



GC CIRCULAR LIVING  
IN  
**ACTION**

**ANNUAL REPORT 2019**  
PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED





## GC CIRCULAR LIVING

Rapid developments around the world are having detrimental environmental impacts. In recognizing the implications, GC has pledged to achieve business growth while maintaining a balance between economic, social and environmental sustainability. We believe that the Circular Living concept is a potential solution, and remain committed to creating products through a combination of creative ideas and innovations to ensure that our resources retain their value and continue to be recycled indefinitely. In the interim, we are ready to build partnerships and promote social engagement that contributes to positive change and strengthen our organizational role model leading to sustainable growth.



### THAILAND'S FIRST RENEWABLE AND ADVANCED POLYMER MANUFACTURING FACILITY

ENVICCO Limited, a new joint venture established in a partnership involving GC and ALPLA, produces two high-performance polymers, rPET and rHDPE, with cutting-edge technology that meets international standards.

ENVICCO AIMS TO RECYCLE

# 60,000+

TONS OF PLASTIC WASTE INTO NEW MATERIALS PER YEAR

## GC CIRCULAR LIVING

### COLLABORATIONS MOVE CIRCULAR LIVING

GC is focused on being a global leader in the chemicals business, incorporating environmentally-friendly innovations and technologies in line with the concept of the Circular Economy, developing products that improve the quality of life of people in society, and providing continued value that fully integrates our social responsibility with the growth of our business.

MEMBER OF

## Dow Jones Sustainability Indices



In collaboration with a RobecoSAM brand

### GC RANKED NUMBER ONE FOR SUSTAINABILITY IN THE DJSI IN THE CHEMICALS SECTOR

GC was recently rated number one in the world for sustainability in the 2019 Dow Jones Sustainability Indices (DJSI), and also ranked among the top 10 companies in the chemicals sector by the DJSI World Index and Emerging Markets Index for the seventh consecutive year.

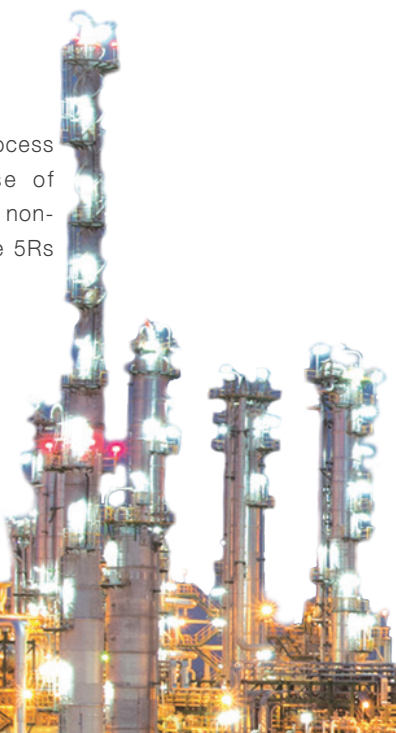


### IMPROVING PRODUCTION PROCESS EFFICIENCY THROUGH THE 5Rs

We support improved production process efficiency by increasing the use of renewable resources while reducing non-renewable resource use through the 5Rs throughout our value chain.

# 5Rs

THROUGHOUT THE VALUE CHAIN



# TOTAL SOLUTIONS FOR EVERYONE

We emphasize the efficient use of resources to maximize their benefits together with building both domestic and international partnerships to develop new ideas to support the circular economy and generate concrete outcomes.

**UPCYCLING**  
by **GC**



**14**  
PET BOTTLES  
= 1 T-SHIRT



**Thailand 1<sup>st</sup> Collection,**  
made from waste plastic bottles from beaches and the sea around Koh Samet in Rayong province.



The 'Upcycling the Oceans, Thailand' project is a collaboration involving three leading organizations, PTT Global Chemical Public Company Limited (GC), the Tourism Authority of Thailand (TAT), and the ECOALF Foundation. Together, we are committed to addressing the problem of plastic waste in Thailand's marine tourist areas by collecting and transforming waste into creative, value-added products that are environmentally-friendly. This initiative also promotes responsible tourism and supporting ocean conservation in Thailand.

**UPCYCLING**  
**THE OCEANS**  
THAILAND

**ThinkCycle Bank**

ธนาคาร ทิ้ง-ไซคิล  
ทิ้งแบบหมุนเวียน...เพื่อเปลี่ยนโลก

Recycled waste can be transformed into money

**In 2019, the ThinkCycle Bank managed to collect and sort approximately 10,478 kilograms of waste.\***

\*Between January-November 2019



GC and Mahidol University teamed up to promote an education campaign on sorting recyclable waste and launched the ThinkCycle Bank involving 22 schools in Rayong and Chonburi. This initiative is developing a database on waste using a systematic approach, and was designed to educate teachers and students on how to effectively sort recyclable waste, and also earn an extra income while promoting a money saving habits.

## The 'Kao Khon La Kao' Project, Positive Steps for Environmental Benefits



ก้าวต่อไปด้วยพลังเล็กๆ  
2 5 6 2 - 2 5 6 3  
ก้าวประเทศไทย



มูลนิธิก้าวคนละก้าว



The 'Kao Khon La Kao' project's activities support lifestyles that reduce waste in five regions using medals made from recycled resin and compostable products such as drinking cups and T-shirt bags for runners. It also creates value from plastic waste by using water bottles collected from the event which are then upcycled into medal ribbons and Kao Khon La Kao T-shirts.

THIS FUNDRAISING PROJECT, WHICH TOOK PLACE IN THE NORTHEASTERN, SOUTHERN, AND NORTHERN REGIONS, COLLECTED

over  
**200,000**  
plastic bottles

which were made into a collection of value-added products, and used over 49,000 GC compostable cups instead of traditional plastic cups. The used GC Compostable cups were collected by GC and the Kao Khon La Kao project and donated to the Department of National Parks, Wildlife and Plant Conservation in the area to be used to plant sprouts.



ANTI BACTERIA



EASY DRY



WRINKLE RESISTANT



**Saving the Planet and Making Merit with Recycled Monk's Robes**



**60**  
PET BOTTLES  
= 1 RECYCLED  
MONK'S ROBE

Wat Chak Daeng and GC teamed up for the 'Turning Waste into Treasure' project in which PET plastic bottles were upcycled into saffron robes for Buddhist monks using cloth made from recycled polyester mixed with cotton and recycled antibacterial polyester zinc, which reduces odors. Thanks to their antibacterial properties, the robes are comfortable to wear, breathable, wrinkle-free, dry easily, and are dyed using colors that meet Buddhist regulatory standards.



## THE GC COMPOSTABLE LABEL

Identifies a product or packaging made from compostable plastic resin.



# FROM THREAT TO THREAD WITH A TOUCH OF THAI STYLE



X

JIM THOMPSON

We partnered with Jim Thompson to use silk yarn and fiber made from recycled plastic, which are woven to develop products that reflect the essence of Thainess.



## PARTNER FOR SUSTAINABILITY



Having earned the trust and confidence of the Ministry of Foreign Affairs, GC was selected as a **Partner for Sustainability** at the ASEAN Summit 2019. GC provided iPad cases made from recycled Polyethylene (PE) plastic which were woven by communities in Rayong and presented as an official souvenir gift for the ASEAN leaders.

One recycled PE iPad case was made using 36 discarded plastic bags as the main raw material. This helped minimize greenhouse gas emissions by 1,124 grams of carbon dioxide which is equivalent to the carbon dioxide absorption from the atmosphere of 27 trees.



## WASTE THIS WAY #รักษ์โลกให้ถูกทาง...

This is the first time that the 74<sup>th</sup> Chula-Thammasat Traditional Football Match implemented effective waste management



GC partnered with Chulalongkorn University and Thammasat University to promote the everyday use of renewable resources, which supports the concept of GC Circular Living, and also committed to creating 'Total Solutions for Everyone' to support environmental conservation among the new generation by addressing the waste problem together with students from the two universities.

We worked with the organizing committee of the Traditional Football Match, consisting of students from both universities, in waste management in various ways that support the use of biodegradable bioplastic packaging (certified with the GC Compostable label) and upcycled products made from discarded plastic, such as T-shirts and survival bags, with an aim to build awareness on the need to efficiently use resources. In addition, each activity conducted at the traditional football match was designed to be measurable. For instance, greenhouse gas emissions were calculated in tons of CO<sub>2</sub> equivalent (eq) at the event.

CO<sub>2</sub>eq

REDUCING GREENHOUSE GAS EMISSIONS BY

18,121

KILOGRAMS OF CO<sub>2</sub>eq

OR PLANTING

= 2,013

TREES





# A Proud Moment for Thailand on the International Stage

## GC Rated Number One

in the World for Sustainability in the DJSI (Chemicals Sector)



MEMBER OF

**Dow Jones  
Sustainability Indices**



In collaboration with a RobecoSAM brand

PTT Global Chemical Public Company Limited (GC) was recently rated number one in world for sustainability in the 2019 Dow Jones Sustainability Indices (DJSI). GC also ranked among the Top 10 in the chemicals sector for the seventh consecutive year. These rankings reflect GC's standards for excellence in its operations as a multinational organization, and as a company that strongly supports the environment, society, and its respective stakeholders. They also show that GC is becoming an important role model for sustainability.

# CONTENT

|  |    |
|--|----|
| Vision, Mission and Corporate Strategies | 2  |
| Financial Highlights                     | 4  |
| Awards and Recognitions                  | 6  |
| Major Events and Activities in 2019      | 8  |
| Message from the Chairman                | 14 |

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## BUSINESS HIGHLIGHTS

|   |    |
|---|----|
| Business Structure  | 18 |
| Business Value Chain                                      | 20 |
| Nature of Business and Performance                        | 22 |
| • Group Performance Center-Refinery and Shared Facilities | 22 |
| • Group Performance Center-Aromatics                      | 23 |
| • Group Performance Center-Olefins                        | 24 |
| • Polymers Business Unit                                  | 25 |
| • EO-Based Performance Business Unit                      | 26 |
| • Green Chemicals Business Unit                           | 27 |
| • Phenol Business Unit                                    | 28 |
| • Performance Materials and Chemicals Business Unit       | 29 |
| • Services and Others                                     | 30 |
| Economic and Market Overview in 2019 and Outlook On 2020  | 31 |
| Management Discussion and Analysis                        | 37 |
| Risk Management and Risk Factors                          | 48 |
| Internal Control  | 58 |
| Shareholding Structure in Subsidiaries and Affiliates     | 62 |
| Revenue Structure   | 64 |
| Connected Transaction                                     | 65 |
| Shareholding Structure                                    | 73 |
| Dividend Payment Policy                                   | 73 |

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## ORGANIZATION STRUCTURE

|                       |     |
|-----------------------|-----|
| GC Board of Directors | 76  |
| GC Executives         | 84  |
| Management Structure  | 101 |

## GOOD CORPORATE GOVERNANCE

|   |     |
|---|-----|
| Good Corporate Governance                           | 124 |
| People Management and Development Policy            | 143 |
| Report of the Corporate Governance Committee        | 148 |
| Report of the Nomination and Remuneration Committee | 150 |
| Report of the Risk Management Committee             | 152 |

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## SUSTAINABLE DEVELOPMENT

|  |     |
|--|-----|
| Social Responsibility and Sustainable Development        | 156 |
| Safety, Occupational Health and Environmental Management | 159 |

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## FINANCIAL EXCELLENCE

|  |     |
|--|-----|
| Audit Committee Report   | 170 |
| Report of the Board of Directors' Accountability to Financial Report | 174 |
| Report of the Independent Certified Public Accountants               | 175 |
| Financial Statements   | 181 |
| Notes to the Financial Statements                                    | 192 |
| Audit Fee and Non-Audit Fee  | 282 |

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## APPENDIX

|   |     |
|---|-----|
| Company Information and Other Important Information | 284 |
| Technical Terms and Abbreviations                   | 287 |

"Investor may search for more detail of Company information in Form 56-1 available at [www.sec.or.th](http://www.sec.or.th) or Company website [www.pttgcgroup.com](http://www.pttgcgroup.com)"



# VISION

## TO BE A LEADING GLOBAL CHEMICAL COMPANY FOR BETTER LIVING

meaning

**“LEADING GLOBAL”** means GC Group, a world-class chemical company

**“CHEMICAL COMPANY”** means GC Group, producers of petrochemicals and chemicals throughout value chain integration through growing businesses via international investment, with a focus on high value-added products

**“BETTER LIVING”** means GC Group, producers striving to meet customers' needs with high-value products, producers with socio-environmental responsibility, and committed to improving the quality of life with chemicals consumed in the downstream market as well as green chemicals.

# MISSION

- 1.** We deliver the best business performance through trustworthiness to create fair and sustainable value for shareholders.
- 2.** We engage and integrate society and the environment into our business, with responsibility and care for sustainable development.
- 3.** We provide superior solutions from innovative products and services to be the best choice for our business partners.
- 4.** We create a workplace that promotes learning and employee wellbeing to develop a workforce that is engaged and committed to professional excellence.

## OBJECTIVES AND GOALS

PTT Global Chemical Public Company Limited (GC) systematically reviews its corporate vision, mission and direction annually for alignment with the current business context and long-term trends. It aspires to become a leader in 3 aspects as follow;

### BUSINESS GROWTH



GC is committed to being a world-class petrochemical and chemical manufacturer with integrated production lines, fostering growth and yielding profits in a sustainable and uninterrupted manner. Its focus is on growing investment in performance and specialty chemicals, green businesses, and international investments.

### RETURN ON INVESTMENT



GC is committed to achieving a return on investment with leading industry players in Asia-Pacific.

### SUSTAINABILITY



GC is committed to operating its businesses under the framework of sustainability by consistently working towards international acceptance as a global leader in sustainability.

# CORPORATE STRATEGIES

The focus of GC's direction and strategic plans lies in establishing and upholding competitiveness and sustainable business growth while grooming itself in all aspects to support future growth plans. To this end, GC has adopted these direction and plans as the operating framework and regularly monitors its performance for short-term and long-term corporate goal achievement.

GC also retains its instrumental role in driving the domestic country by supporting petrochemical projects with capable partners under the Eastern Economic Corridor (EEC) project, which raises the domestic petrochemical industry's competitiveness, establishes regional market connectivity, and bolsters investors' confidence. By investing over 100 billion baht in 2017-2019, GC made major strides towards the New S-Curve and the Circular Economy. GC is in the process of projects studying and decision-making worth over 110 billion baht. Finally, GC promotes bioeconomic development for sustainable development together with conscientious consumption of resources under the GC Circular Living project.

This year GC intensified and drove corporate strategic implementation in keeping with prevailing external circumstances, with the following four strategic focuses:

## 1. STEP CHANGE

GC maintains its competitiveness for current businesses as a fundamental for future growth by creating value from products and existing assets for growth in both domestic and Southeast Asian market. Below are key strategies:

- Enhancing MTP competitiveness by (1) improving operational efficiency through the MAX Infinity project on production, marketing, and product distribution, (2) creating synergy amongst Map Ta Phut plants through MTP integration throughout the supply chain, ranging from feedstock sourcing to product delivery to customers for reducing production costs, preventing losses, and adding value to products, (3) improving assets (plants and infrastructure) to accommodate variety of feedstock while promoting long-term feedstock security, and (4) investing in products value chain extension to support downstream industry's growth.
- Expanding the home base to Southeast Asia to foster long-term distribution security in high-growth markets, aiming at Indonesia and Vietnam. GC will begin with establishment of marketing and sales bases together with seeking opportunities of investments.
- Adding business value by entering high-value businesses to properly meet customers' needs and extending businesses to be in line with the industry's growth and world megatrends.

## 2. STEP OUT

GC's aspiration is to become a world-class petrochemical leader by setting strategies for building international production base which has competitive advantage in feedstock cost and interesting market growth rate, which would favor GC's growth in a situation where the cost structures face challenges arising from emerging technologies. GC is planning to study petrochemical complex project in USA and pursuing opportunities together with PTT Group.

## 3. STEP UP

GC heightens its sustainability operation for business connectivity in response to industrial trends as well as caring for the society and environment through the following key actions:

- **Smart Operating:** GC strives for maximum circulation throughout its processes, ranging from consumption of renewable resources, process improvement, minimization of process waste and greenhouse gas emissions reduction which in line with the climate change response approach.
- **Responsible Caring:** GC values the product design and development throughout its supply chain with innovation to reduce its environmental footprint, response to public policy on plastic waste management, and promote a circular economy. The key approaches consist of reducing single-use plastics production along with promoting compostable plastics.
- **Loop Connecting:** GC links its sustainability approach to business by preparing for establishing joint venture company to produce Recycled PET whose feedstock comes from cooperative projects engaging in establishing systems to sort and collect plastic waste. Furthermore, GC strives for creating broad cooperation from all sectors to promote the Plastic Circular Economy in Thailand.

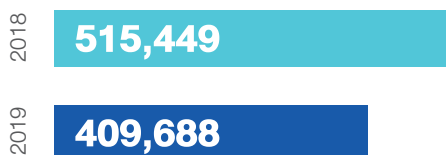
## 4. ENABLER AND GOVERNANCE

GC strives to strengthen corporate drivers to support operation following strategic plans for achievement in corporate long term goals, whether innovation excellence, preparation for entering in new businesses through venture capital, people and organization development, and digitalization management. At the same time, GC strives to strengthen governance, risk management & internal control and compliance (GRC) for full compliance and confidence amongst GC's stakeholders filled with transparency and accountability.

# FINANCIAL HIGHLIGHTS

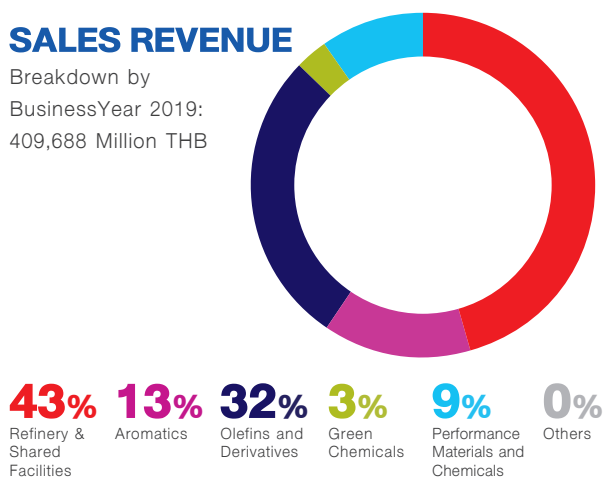
## SALES REVENUE

Unit: Million THB



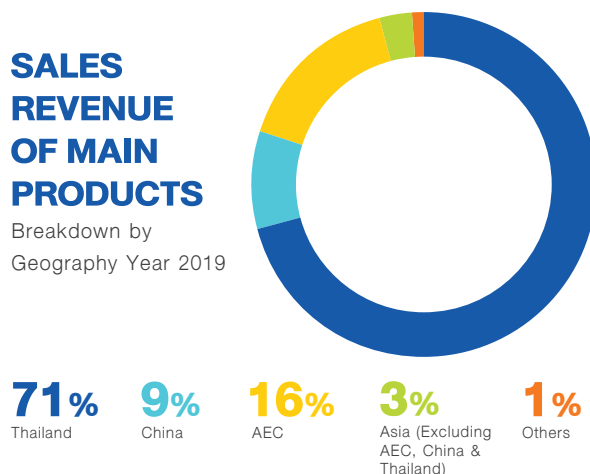
## SALES REVENUE

Breakdown by Business Year 2019: 409,688 Million THB



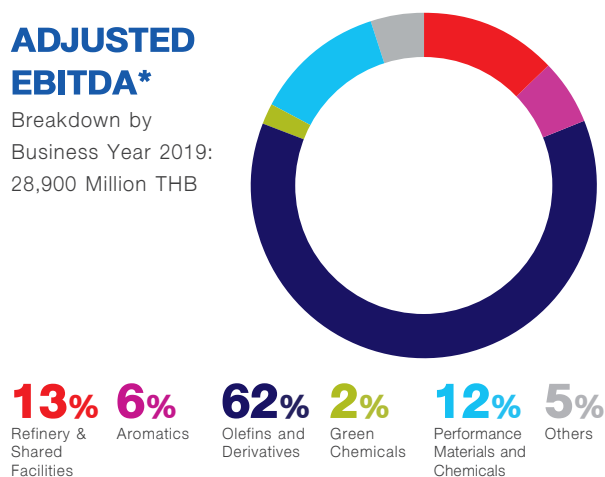
## SALES REVENUE OF MAIN PRODUCTS

Breakdown by Geography Year 2019



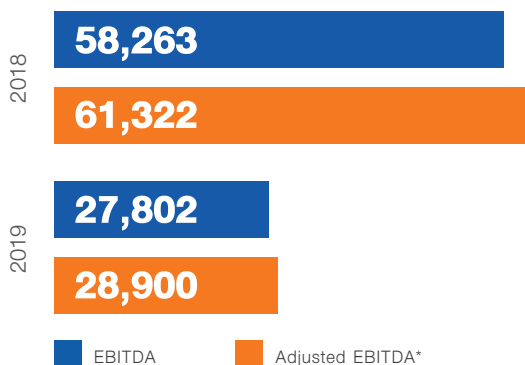
## ADJUSTED EBITDA\*

Breakdown by Business Year 2019: 28,900 Million THB



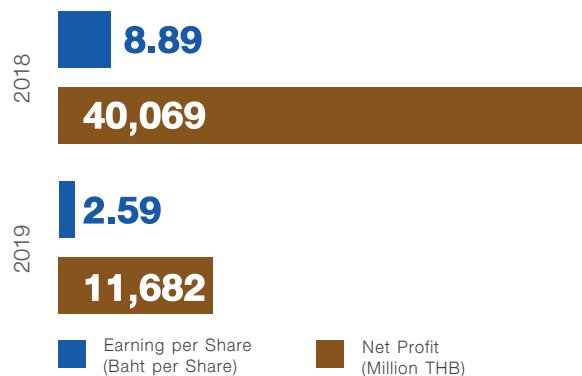
## EBITDA & ADJUSTED EBITDA\*

Unit: Million THB



## NET PROFIT

Unit: Million THB



Note: \* Adjusted EBITDA refers to EBITDA excluding Stock Gain/(Loss), NRV and extra item

| <b>STATEMENT OF FINANCIAL POSITION</b><br>(UNIT: MILLION THB) | <b>2017</b>    | <b>2018</b>    | <b>2019</b>    |
|---|----------------|----------------|----------------|
| <b>Total Assets</b>   | <b>434,964</b> | <b>469,255</b> | <b>452,514</b> |
| Cash and Cash Equivalents + Short-term Investment             | 55,050         | 53,562         | 25,560         |
| Current Assets  | 85,688         | 90,748         | 78,934         |
| Property, Plant and Equipment                                 | 219,689        | 250,330        | 264,564        |
| Non-current Assets  | 74,537         | 74,615         | 83,457         |
| <b>Total Liabilities</b>                                      | <b>154,700</b> | <b>165,773</b> | <b>158,919</b> |
| Interest Bearing Debt (IBD)                                   | 97,813         | 96,907         | 107,087        |
| Other Liabilities   | 56,887         | 68,866         | 51,832         |
| <b>Total Equity</b>   | <b>280,264</b> | <b>303,482</b> | <b>293,595</b> |

| <b>STATEMENT OF FINANCIAL POSITION</b>      | <b>2017</b> | <b>2018</b> | <b>2019</b> |
|---|-------------|-------------|-------------|
| Current Ratio (times)                       | 2.33        | 1.95        | 1.97        |
| EBITDA to Total Revenues (%)                | 14.53       | 11.30       | 6.79        |
| Net Profit to Total Revenues (%)            | 9.00        | 7.77        | 2.85        |
| Return on Total Assets (%)                  | 11.77       | 10.36       | 3.50        |
| Return on Equity (%)                        | 15.09       | 14.04       | 4.02        |
| Interest Bearing Debt to Equity (times)     | 0.35        | 0.32        | 0.36        |
| Net Interest Bearing Debt to Equity (times) | 0.15        | 0.14        | 0.28        |
| Net Interest Bearing Debt to EBITDA (times) | 0.67        | 0.74        | 2.93        |

| <b>DIVIDEND PAID (BAHT/SHARE)</b> | <b>2017</b> | <b>2018</b> | <b>2019*</b> |
|-----------------------------------|-------------|-------------|--------------|
| 1 <sup>st</sup> HALF              | 1.75        | 1.75        | 1.00         |
| 2 <sup>nd</sup> HALF              | 2.50        | 2.50        | 1.00         |
| FULL YEAR                         | 4.25        | 4.25        | 2.00         |
| Earning per Share (Baht/Share)    | 8.79        | 8.89        | 2.59         |
| Dividend Payout Ratio (%)         | 49%         | 48%         | 77%          |

**Note:** \* The Board of Directors' Meeting No. 2/2020 held on February 17, 2020, agreed to propose the Annual General Meeting of Shareholders to consider and approve on the dividend payment for the year 2019 operating performance of Baht 2.00 per share, or dividend payout ratio at 77% of the net profit of consolidated financial statements, of which Baht 1.00 per share was paid as interim dividend on September 13, 2019. The remaining dividend of Baht 1.00 per share is to be proposed to the 2020 Annual General Meeting of Shareholders for approval.

# AWARDS AND RECOGNITIONS

Our efforts in conducting sustainable business in economic, social and environmental dimensions have been recognized by leading organizations both national and international. These represent our excellent performance.

MEMBER OF

**Dow Jones Sustainability Indices**



In collaboration with RobecoSAM brand

## DOW JONES SUSTAINABILITY INDICES (DJSI)

GC has been ranked as the first in the 2019 Dow Jones Sustainability Indices (DJSI) in the chemicals sector and also ranked among the top 10 companies for the seventh consecutive year.



## THE ASSET AWARDS

Engaging Asia's financial decision makers

GC received two awards from the Asset Awards 2019, which were Platinum Award for ESG and Best CEO Award from The Asset magazine, a regional leading financial magazine.



Global Compact  
**LEAD**

## UN GLOBAL COMPACT LEAD

GC is a signatory to UN Global Compact and it is the only one company in Thailand that has been recognized as Global Compact LEAD among other 37 organizations across the world.



## MSCI ESG RATING

GC has been ranked as the world number five in the Commodity Chemicals sector for the BBB level assessment by MSCI. The assessment represents that GC has run the operations in accordance with Environmental, Social and Governance (ESG) principles.



## CARBON DISCLOSURE PROJECT

GC has been rated environmental management in climate change management at Leadership Level (A-List) by CDP.



FTSE4Good

## FTSE4GOOD INDEX

GC passed the evaluation criteria of FTSE and remains a constituent of the FTSE4Good Index Series for the fourth consecutive year. This demonstrates commitments in taking responsibilities on a basis of Environmental, Social and Governance (ESG).



**THSI**  
THAILAND SUSTAINABILITY INVESTMENT 2019

## THAILAND SUSTAINABILITY INVESTMENT

GC has been honored on a list of Thailand Sustainability Investment for the fifth consecutive year (2015-2019). This honor represents GC's efforts in creating a balance between the Environmental, Social and Governance that is in line with THSI assessment.



### SET SUSTAINABILITY AWARDS OF HONOR

GC has won the SET Sustainability Awards for the third consecutive year. This award reflects GC's outstanding efforts in conducting sustainable business and disclosing sustainability performance data in complete and transparent manner.



### AWARD OF HONOUR FOR NETWORK OF OUTSTANDING ORGANIZATIONS

GC received the award of honour from Ministry of Public Health. This award is given to the role model organizations for health promotion and disease prevention for working people.



### ENVIRONMENTAL, SAFETY AND GOOD GOVERNMENTAL AWARD

GC Group received Golden Star Award in Environmental, Safety and Good Governmental Award from Industrial Estate Authority of Thailand. This represents the high standard of environmental and safety management for the fifth consecutive year.



### THAILAND LABOR MANAGEMENT EXCELLENCE AWARD 2019

GC Group received eight awards from The Department of Labor Protection and Welfare, including, Occupational Health, Workplace Environment, and Thailand Labor Management Excellence Award.



### LOW CARBON AND SUSTAINABLE BUSINESS INDEX (LCSi)

GC was recognized as a leading company in the Low Carbon and Sustainable Business Index (LCSi) with an Excellence Score by TGO. This demonstrates GC's commitment to gear toward low carbon business operation.



### CSR-DIW CONTINUOUS AWARD

GC's subsidiaries received CSR-DIW Award from Department of Industrial Works, Ministry of Industry for the 12<sup>th</sup> consecutive year.



### GREEN INDUSTRY

GC Group won 18 awards in the Green Industry Award and has received the green industry level 5 award for four consecutive years since 2016.



### THAILAND VOLUNTARY EMISSION TRADING SCHEME (THAILAND V-ETS) CERTIFICATE

Two plants under GC Group received certification for pilot plant for Thailand Voluntary Emission Trading Scheme (Thailand V-ETS).

# MAJOR EVENTS AND ACTIVITIES IN 2019

## Supporting Strategies to Raise Competitiveness



January 9, 2019

### **GC inaugurated GC-M PTA plant – a major step under the strategy to invest in business chain expansion to add value to Paraxylene (PX) and Mono Ethylene Glycol (MEG)**

GC joined the inauguration of the GC-M PTA plant after the Company and GC Glycol Co., Ltd. (Glycol), together with Mitsui Chemicals Co., Ltd. (MCI), successfully acquired 74% shares (both direct and indirect

shareholding) in Siam Mitsui PTA Co., Ltd. (SMPC), and Thai PET Resin Co., Ltd. (TPRC), an operator and distributor of Purified Terephthalic Acid (PTA) and Polyethylene Terephthalate Resin (PET). SMPC was then renamed GC-M PTA to reflect the cooperation of the two shareholders.

Such share acquisition is regarded as a major step forward by GC under the strategy to invest in business chain expansion to create higher value for PX and MEG. This would raise the Company's competitiveness in managing feedstock while ensuring stability of the business throughout the business chain. The move, moreover, helped strengthen GC Group's polymer market, enabling the Company to completely fulfill demand from PET bottle customers.



January 29, 2019

### **GC laid the foundation stone of GC Innovation: Performance Chemicals Building to grow downstream petrochemical business**

As an auspicious start of operation, GC organized the foundation stone laying ceremony for its Innovation: Performance Chemicals Building at the construction site of GC Innovation, Rayong Office, Rayong. The new building will serve as a chemical laboratory and a prototype factory in support of the growth of GC's downstream petrochemical business. This is an expansion of the chemical value chain of such chemical groups as polyols and high value products in addition to lending support for joint venture partners.



January 29, 2019

### **GC laid the foundation stone of GC Oxirane's Propylene Oxide Project**

GC organized the foundation stone laying ceremony under the Propylene Oxide Project under GC Oxirane Co., Ltd. (GCO), as an auspicious start of operation at the construction site of GCO in Map Ta Phut Industrial Estate, Rayong. This is considered a major investment under the government's Eastern Economic Corridor (EEC), which is planned to become the largest economic zone in ASEAN and one of the world's economic links, in a bid to move GC towards the New S-Curve.



February 27, 2019

**GC and GE jointly extended a maintenance contract for power generators using GE’s advanced technology to raise power process efficiency**

GC signed a contract with General Electric (GE), on maintenance service for power generators using GE’s advanced technology. The 10-year contract covers maintenance service for gas turbine power generators at GC’s Olefins Plant Unit 1, located in Map Ta Phut Industrial Estate, Rayong. GC is GE’s first customer in Thailand to have GE’s Predix Asset Performance Management software installed, which is part of the application of GE’s Total Plant and Digital Solutions. The signing ceremony took place at Centara Grand at Central Plaza, Ladprao, Bangkok.



April 26, 2019

**GC and GPSC jointly invested in the Smart Energy Storage System**

GC and Global Power Synergy Plc. (GPSC) jointly signed an agreement on co-investment in the Smart Energy Storage System (ESS). This is an ESS pilot project designed to enhance power generation from gas turbines and to increase power security for the Company’s Rayong Office. System installation on the Company’s Rayong office and Science & Innovation Center was completed in December 2019. ESS technology will later be applied on a Thailand’s larger scale to enhance the power supply system for plant operation under GC Group. The signing ceremony was held at the Energy Complex, Bangkok.



September 3, 2019

**GC joined Kuraray and Sumitomo in laying the foundation stone for specialty chemicals plants to produce advanced engineering plastic products, an expansion of new investment in EEC**

GC, Kuraray Co., Ltd., and Sumitomo Corporation jointly held a ceremony to lay the foundation stone of an investment project for specialty chemicals to produce advanced engineering plastic products and to expand the new investment in EEC. The project encompasses two production plants, namely a thermoplastic rubber and specialty polyamide plant and butadiene and a downstream product plant. These two plants are to be operated by Kuraray GC Advanced Materials Co., Ltd. (KGC), and Kuraray Advanced Chemicals (Thailand) Co., Ltd. (KAC). The ceremony took place at the project site in WHA Eastern Industrial Estate (Map Ta Phut), Rayong.

## Supporting Strategies to Foster Business Sustainability



January 11, 2019

### GC signed an MOU with Silpakorn University on BioPBS packaging for making the World better

GC signed a memorandum of understanding with Silpakorn University in support of the production and application of environmentally friendly BioPBS packaging products in the forms of compostable bioplastic cups and straws. The cooperation is in line with the university's Be Smart Be Green policy and with GC's Circular Economy business trend, leading towards global sustainability. The signing ceremony took place at the Customer Solution Center, Energy Complex, Bangkok.



January 26, 2019

### Circular Factory by GC Pavilion at Bangkok Design Week 2019 showcased the new lifecycle of plastic products, underscoring the Circular Living concept

GC set up a pavilion to showcase Circular Factory by GC – a future factory which focuses on production and circular application of plastic products. This is to campaign for the GC Circular Living concept – a lifestyle marked by efficient use of limited resources. The concept also promotes knowledge about creative management of plastic products to safeguard the environment and foster awareness among society, creative thinkers, and plastic manufacturers. Innovation and creative designs showed how used plastic products can be turned into value-added lifestyle products to reduce plastic waste problems and ease environmental impacts. The pavilion was built at the Central Post Office building, Charoenkrung Road, Bangkok.



March 13, 2019

### GC joined BJC for product development to expand sustainable business

GC signed a memorandum of understanding with Berli Jucker Plc. (BJC) on the cooperation to develop products, packaging, and raw materials in response to customers' current and future demand and in support of market expansion, both domestically and internationally. Projects under the cooperation include the sourcing of recycled plastics through the BJC business network; application of plastics and bioplastic products in the coffee, food, and retail businesses; and organization of social and environmental activities, such as product exhibition and CSR activities. The signing ceremony took place at BigC Extra, Rama IV branch, Bangkok.



May 14, 2019

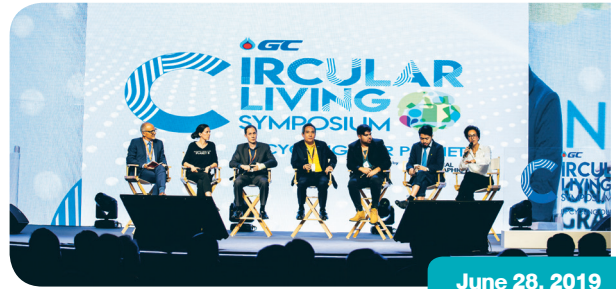
### GC announced ambition of sustainability at the Dutch-Thai Sustainability Conference 2019

GC signed a contract with 14 organizations on business operation for sustainability, which focuses on responsibility for production processes and products. Through integrated cooperation with all sectors, tangible results that could drive the Circular Economy and create awareness of the correct use of plastics. This was part of the Dutch-Thai Sustainability Conference 2019, organized by the Netherlands Embassy at C Asean, Bangkok.



**GC announced its intention to carry on plastic waste management in a sustainable manner under the PPP Plastic Project for 2019**

At a press conference to report the performance of the Plastic Waste Management Subcommittee, GC took part in the announcement of the intention of Thailand Public-Private Partnership for Plastic and Waste Management (PPP Plastic Year 2). Under PPP Plastic Year 2, consumers and business operators in Thailand were encouraged to learn and adjust their behaviors, while nurturing awareness of the proper use of plastics in the interests of the environment and sustainability. PPP Plastic Year 2 aimed to reduce plastic waste in the Thai oceans by no less than 50% by 2027 while increasing waste sorting and recycling ratios, with a focus on shopping bags and plastic straws. This was to promote efficient consumption of resources according to the Circular Economy concept. Also, PPP Plastic Year 2 supported the establishment of Thailand's plastics database as a tool to measure the project's success, establishment of a clean city model on pilot areas of Bangkok and Rayong, and appointment of the project's ambassadors and volunteers. The press conference was held at the Impact Forum, Muang Thong Thani, Nonthaburi.



**GC organized Circular Living Symposium 2019: Upcycling Our Planet, aiming to revolutionize efficient use of resources and advocate the Circular Economy to safeguard the world**

GC organized the Circular Living Symposium 2019: Upcycling Our Planet, the first such conference to be held in collaboration with world-class media National Geographic to foster awareness of participation in natural resource and environmental conservation. The concept of GC Circular Living was promoted for adoption in everyday life. GC Circular Living encourages waste sorting and reduction, efficient use of plastics through reuse, creative and innovative use of recycled or upcycled products, and use of environmentally friendly products. Local and foreign creative thinkers and experts in the Circular Economy also gathered at the symposium to share their knowledge and views. The symposium was meant to be a medium for creating opportunities and for forming connections among different networks and sectors to drive Thailand's policy. The event was held at the Athenee Hotel, Bangkok.



**GC took part in the launching of the first branch of Café Amazon Circular Living Concept, featuring shop decoration with coffee grounds and used plastics**

GC, PTT Plc. (PTT), and PTT Oil and Retail Business Plc. (PTTOR) jointly launched the Café Amazon Circular Living Concept at PTT Station Samyan Branch – the first branch in Thailand to operate in response to the save the world concept and concern for the environment. At the café, coffee grounds and used plastics have been through the upcycling process to increase the value of modern shop furniture under the Circular Economy concept to conserve natural resources and the environment with a focus on efficient use of resources. GC pays attention to turning plastic waste into save the world products through joint creation with designers.

## Supporting Strategies to Foster Business Sustainability



### GC joined Sansiri to establish Thailand's first full-scale Green Society, showcasing leadership in Circular Living

GC announced cooperation with Sansiri Plc. in setting a new standard of responsibility for the environment in an earnest and sustainable way. The cooperation was materialized through the establishment of Green Society, based on the Circular Economy concept, which in turn stems from the cooperation between Sansiri and business allies to develop environmentally friendly furniture that can be used in Sansiri's property projects. This exhibits each other's vision that is consistent in developing a business towards sustainability. Piloting the project are Sansiri x GC: Fulfill Your Living through Innovation and cooperation with two other big brands, namely Pasaya and SB Furniture, in developing environmentally friendly furniture for display at 32 projects under Sansiri, which will result in the reduction of carbon dioxide by 664 kilograms during the initial stage of the project, equivalent to replanting 74 trees.



### GC joined ALPLA to form joint venture company to produce high-quality recycled polymers, the first in Thailand

Mr. Piyasvasti Amranand, GC Chairman, presided over the contract signing between GC and Alpla Packaging, a world-class producer of recycled polymers, on the establishment of ENVICCO Limited, a joint-venture company located in the Asia Industrial Estate, Map Ta Phut, Rayong. The event took place at the St. Regis Bangkok. This joint venture company has been established to produce high-quality recycled plastic pellets, namely rPET and rHDPE. As the first such production plant in Thailand, ENVICCO will create added value for used plastics while providing jobs for the Rayong community. ENVICCO also has a plan to source raw materials through cooperation with local communities.



### GC received 82,000 used plastic bottles and compostable cups from the project 'Kao Khon La Kao' in the South – an attempt to make an innovative journey for plastic waste and encourage a modern lifestyle that focuses on reducing plastic waste

GC received 82,000 used plastic water bottles from 'Kao Khon La Kao' – a run for charity project. These used bottles were intended for upcycling and reproducing into medal straps and T-shirts for sale in the project's run in another region. GC had earlier received 80,000 used water bottles from the run in the Northeast. After the completion of the runs in the Northeast and the South,

a total of 160,000 used plastic bottles were collected and turned into straps with medals and the project's T-shirts as well as some 9,000 GC compostable cups, which were presented to the Royal Forest Department for use as seed pots. The upcycling project supports efficient use of plastics by selling plastic products recycled from waste in Sarn Palung Social Enterprise shops. Part of the proceeds will go to society.

## Supporting Strategy for Strengthening Support Units and Corporate Governance



June 19, 2019

### GC and Chulalongkorn University jointly undertook a feasibility study on innovation to treat cancer patients using cellular and immune therapy

GC and Chulalongkorn University signed a memorandum of understanding on a feasibility study on cancer treatment using cellular and immune therapy, a new hope for terminal-cancer patients and those who have gone through other treatment methods. An investment plan has been drawn up to provide local cancer patients with an equal chance to access the treatment at reasonable costs. Under the MOU, treatment is to be included in the government's universal healthcare scheme and private health insurance schemes. The cooperation, moreover, provides a business opportunity to expand such technology to ASEAN countries, which will result in sustainable medical development in Thailand. The signing ceremony took place at the Customer Solution Center (CSC), Energy Complex, Bangkok.



September 9, 2019

### GC signed a contract with NirvaMed Inc. on partnership and investment in medical technology for dealing with heart failures

At Siriraj Hospital's Medical Research Center, Faculty of Medicine, Mahidol University, GC and Siriraj Foundation together with local leading organizations in both public and private sectors jointly signed a contract with NirvaMed Inc. that encompasses cooperation on medical equipment development by Thai scientists. The cooperation aims to develop medical technology that can save lives, particularly millions of those with heart failures across the globe. This will be the first time that local medical research can revolutionize medical practices on a global scale, resulting in Thailand becoming a world leader in heart failure treatment.



# MESSAGE FROM THE CHAIRMAN



## Dear shareholders,

This year was yet another one of pride for PTT Global Chemical Public Company Limited (GC), thanks to our commitment to driving businesses for sustainability with economic, social, and environmental balance under the sustainability framework, together with adherence to the principles and guidelines of good corporate governance. In parallel was our relentlessly equitable and fair stewardship of all stakeholders. Perhaps not surprisingly, we achieved key national and international goals. To mention a few, membership of the Dow Jones Sustainability Indices (DJSI) with the top score worldwide on sustainable development in the Chemical sector; we were ranked at the prestigious LEAD level among members of the UN Global Compact; at home, accolades including the SET Sustainability Award of Honor for the third straight year.

This year external factors exerted unrelenting pressure on our operations, including tense commercial and economic situations arising from the trade war and highly volatile prices of oil and petrochemical products. Still, we successfully survived these crises. We posted Baht 412,810 million in revenues from sale of goods and rendering of services and Baht 11,682 million in net profit, equivalent to Baht 2.59 in earnings per share. These figures are fruits of efficiency management practices as well as the execution of performance improvement programs to ease the impacts of the above-mentioned factors, including management of production costs, incremental profit from plant reliability enhancement, Project Max and Max Infinity implementation, and strict control of operating expenditure.

### Continue and Expand our Business into the 9<sup>th</sup> Year

We recognize plenty of challenges facing us in the future in view of the petrochemical industry trends that might see structural shifts, including cost breakthroughs of emerging technologies, a big influx of investment into the Asian region, geopolitical issues, and consumers' behavioral shifts – so evident in current campaigns to trim single-use plastics. All these send ripples going through future years' demand for petrochemicals, and so we are gearing up for these imminent scenarios to continue and expand our businesses into the 9<sup>th</sup> Year under the “3 Steps” strategies.

**Step Change:** Strengthen home base. We continue to enhance our business competitiveness and plant reliability together with expand into High Value Business

(HVB) and high-growth Southeast-Asia market base. This strategic element establishes long-term market security in parallel with the creation of added value with premium-value products.

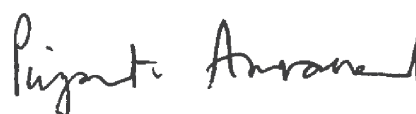
**Step Out:** Leading at Global Level. We seek 2<sup>nd</sup> home base by establishing business platforms abroad where feedstock prices are competitive and markets are robust. We will strive for success of the US Petrochemical Complex Project before entering new businesses via joint ventures or M&As for fast-track growth.

**Step Up:** Become role model organization of sustainability. We enhance sustainability framework by the extension of the Circular Economy concept with socio-environmental responsibility and sustainability integration into core of business.

### Commitment to Becoming a Circular Economy Role Model

With a commitment to becoming a Circular Economy role model – a crucial approach nowadays for resolving resource shortage and easing climate change alike – we take Circular Economy application most seriously. For it could effectively lessen waste and environmental impacts throughout the supply chain through key actions: Smart Operating (shaping new business models that apply technology to process improvement for more efficient natural resource consumption), Responsible Caring (design and green product development), and Loop Connecting (intensifying synergy with stakeholders to integrate businesses to achieve our goal of a true role model of sustainability).

On behalf of the Board of Directors, the management, and employees, I would like to express my heartfelt appreciation to the shareholders and stakeholders in all sectors for their continued wonderful cooperation and support. Our vision and strategies are clear. Thanks to all our personnel's total dedication through thick and thin, our strides will be made with vigor and stability, while we remain a leading chemical company for better living and an integral part of the drive of our national economy.



**Mr. Piyasvasti Amranand**

Chairman

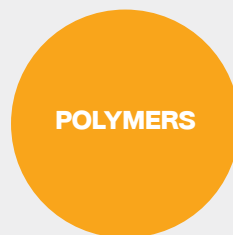
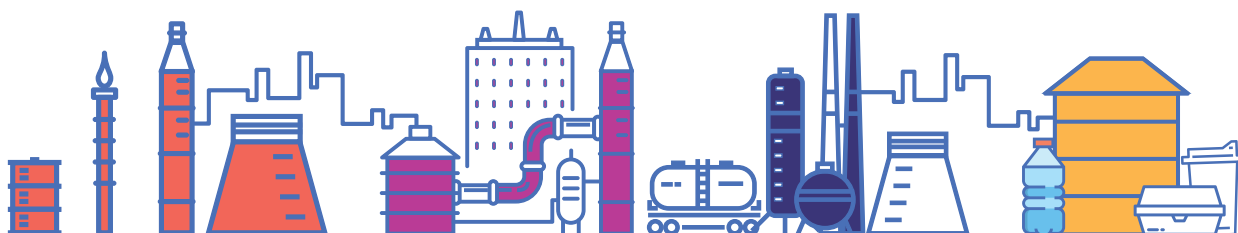
FROM  
TRASH TO  
**TRASHION**



# **BUSINESS HIGHLIGHTS**

# BUSINESS STRUCTURE

In 2019, GC, as a Chemical Flagship of PTT Group with a combined chemical/petrochemical capacity of 11.27 million tons per year and crude oil/condensate distillation capacity of 280,000 barrels per day. GC consists of 8 business groups and has other businesses and services which GC invested for supporting 8 business groups, summarized in the diagram as follows:



## MAIN PRODUCTS

- |                 |                   |             |                        |
|-----------------|-------------------|-------------|------------------------|
| ● LPG           | ● BENZENE         | ● ETHYLENE  | ● HDPE                 |
| ● LIGHT NAPHTHA | ● TOLUENE**       | ● PROPYLENE | ● LDPE                 |
| ● REFORMATE     | ● PARAXYLENE      | ● BUTADIENE | ● LLDPE                |
| ● JET A1        | ● ORTHOXYLENE     | ● BUTENE-1  | ● PP                   |
| ● DIESEL        | ● MIXED XYLENES** |             | ● PTA                  |
| ● FUEL OIL      | ● CYCLOHEXANE     |             | ● PET                  |
|                 |                   |             | ● PS                   |
|                 |                   |             | ● HEXENE-1**           |
|                 |                   |             | ● Rotomolding Compound |

## CAPACITY\*

- |  |   |   |   |
|--|---|---|---|
| ● CRUDE OIL DISTILLATION<br><b>145,000 BARRELS/DAY</b> | ● CONDENSATE DISTILLATION<br><b>135,000 BARRELS/DAY</b> | ● ETHYLENE/ PROPYLENE<br><b>2,888 KTA</b> | ● POLYETHYLENE <b>1,950 KTA</b>         |
|  | ● AROMATICS<br><b>2,419 KTA</b>                         | ● BUTADIENE/ BUTENE-1<br><b>100 KTA</b>   | ● POLYSTYRENE <b>90 KTA</b>             |
|  |   |   | ● POLYPROPYLENE <b>336 KTA</b>          |
|  |   |   | ● PTA <b>718 KTA</b>                    |
|  |   |   | ● PET <b>109 KTA</b>                    |
|  |   |   | ● HEXENE-1 <b>34 KTA</b>                |
|  |   |   | ● Rotomolding Compound<br><b>31 KTA</b> |

## OPERATED BY

- |      |      |      |       |           |
|------|------|------|-------|-----------|
| ● GC | ● GC | ● GC | ● GC  | ● GC-MPTA |
|      |      |      | ● GCS | ● TPRC    |
|      |      |      | ● HMC | ● RGL     |

## SERVICES AND OTHERS

- Jetty and chemical tank farm
- Utility business
- Plant maintenance and engineering design services
- Safety, occupational health, and environmental, and security services
- Pipeline infrastructural services
- Information and Communication Technology Service
- Labor Outsourcing service
- Marketing and sales of Methyl Amine Derivatives, Plastic Compounds, Specialty Products, and Health and Nutrition Products

Operated by TTT  
Operated by GPSC  
Operated by GCME and PTES  
Operated by NPC S&E and NPCSG  
Operated by EFT  
Operated by PTT Digital  
Operated by BSA  
Operated by Solution Creation

- Polymer sales services
  - Logistics services
  - GC Group's liquidity management and financing service
  - Management Consultancy
  - Manufacture procure, sell products and/ or provide services that contributes to society
  - Plastic packaging development Support
  - Land and property management
  - Corporate Venture Capital investment
- Operated by GCM (Polymers Business Unit)  
Operated by GCL (Polymers Business Unit)  
Operated by GCTC  
Operated by PRS Rayong  
Operated by SPSE  
Operated by SPIG  
Operate by GCEC  
Operate by GCV and GCVA



EO-BASED PERFORMANCE

GREEN CHEMICALS

PHENOL

PERFORMANCE MATERIALS AND CHEMICALS

## MAIN PRODUCTS

- ETHYLENE GLYCOL
- ETHANOLAMINE

- METHYL ESTER
- GLYCERIN
- FATTY ACID
- FATTY ALCOHOL
- ETHOXYLATE
- SPECIALTY OLEOCHEMICALS
- BIOPLASTIC

- PHENOL
- BISPHENOL A
- ACETONE

- HEXAMETHYLENE DISOCYANATE AND DERIVATIVES
- ACRYLONITRILE
- METHYL METHACRYLATE

## CAPACITY\*

● 473 KTA

● 917 KTA

● 954 KTA

● 250 KTA

## OPERATED BY

● GLYCOL

- GGC
- PTTMCC
- EMERY
- NATUREWORKS

● PPCL

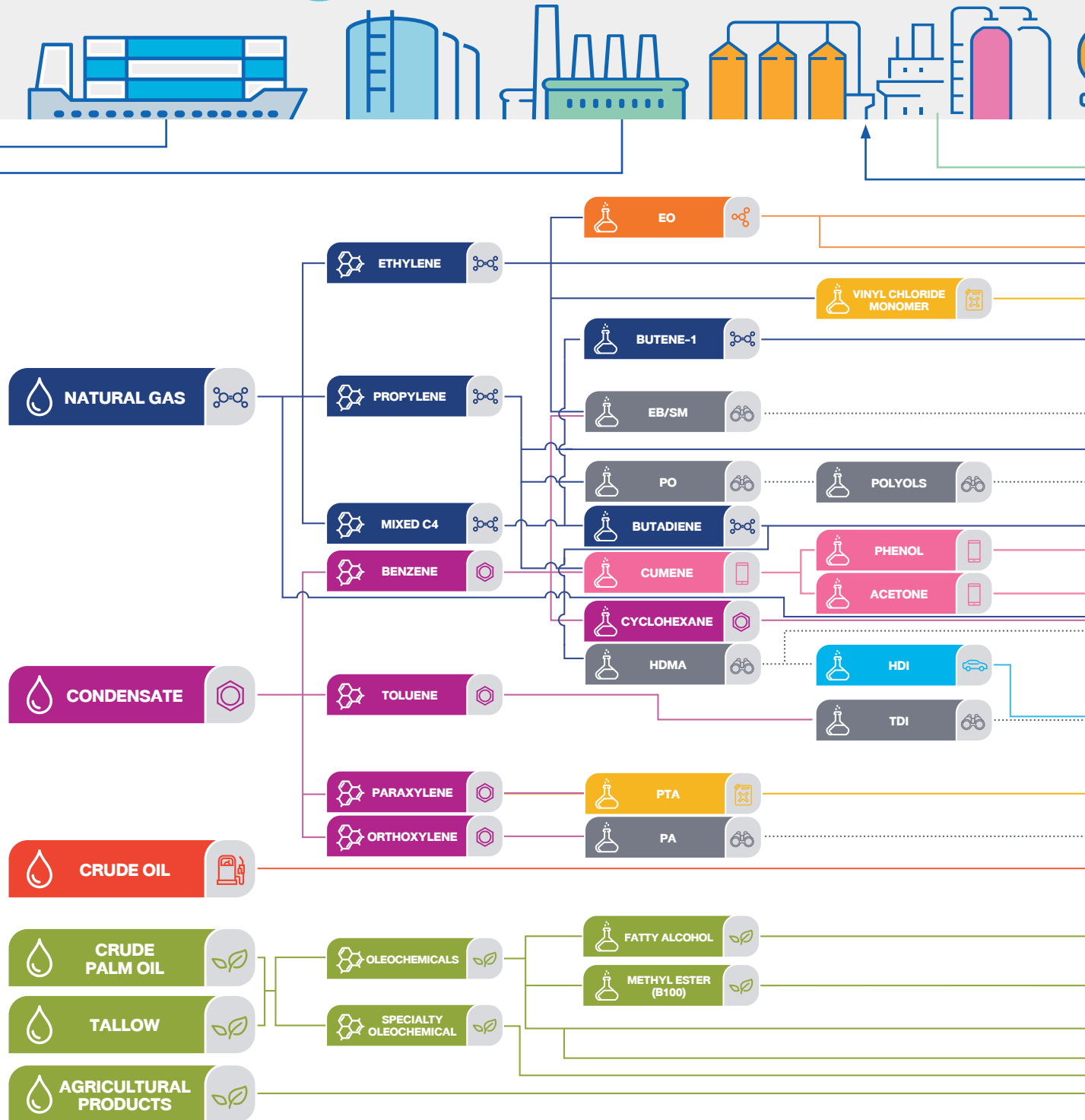
- VENCOREX
- PTTAC

### Remarks:

\* Only capacity that GC hold equal to or more than 25% share and calculate proportion by percent share.

\*\* For internal use

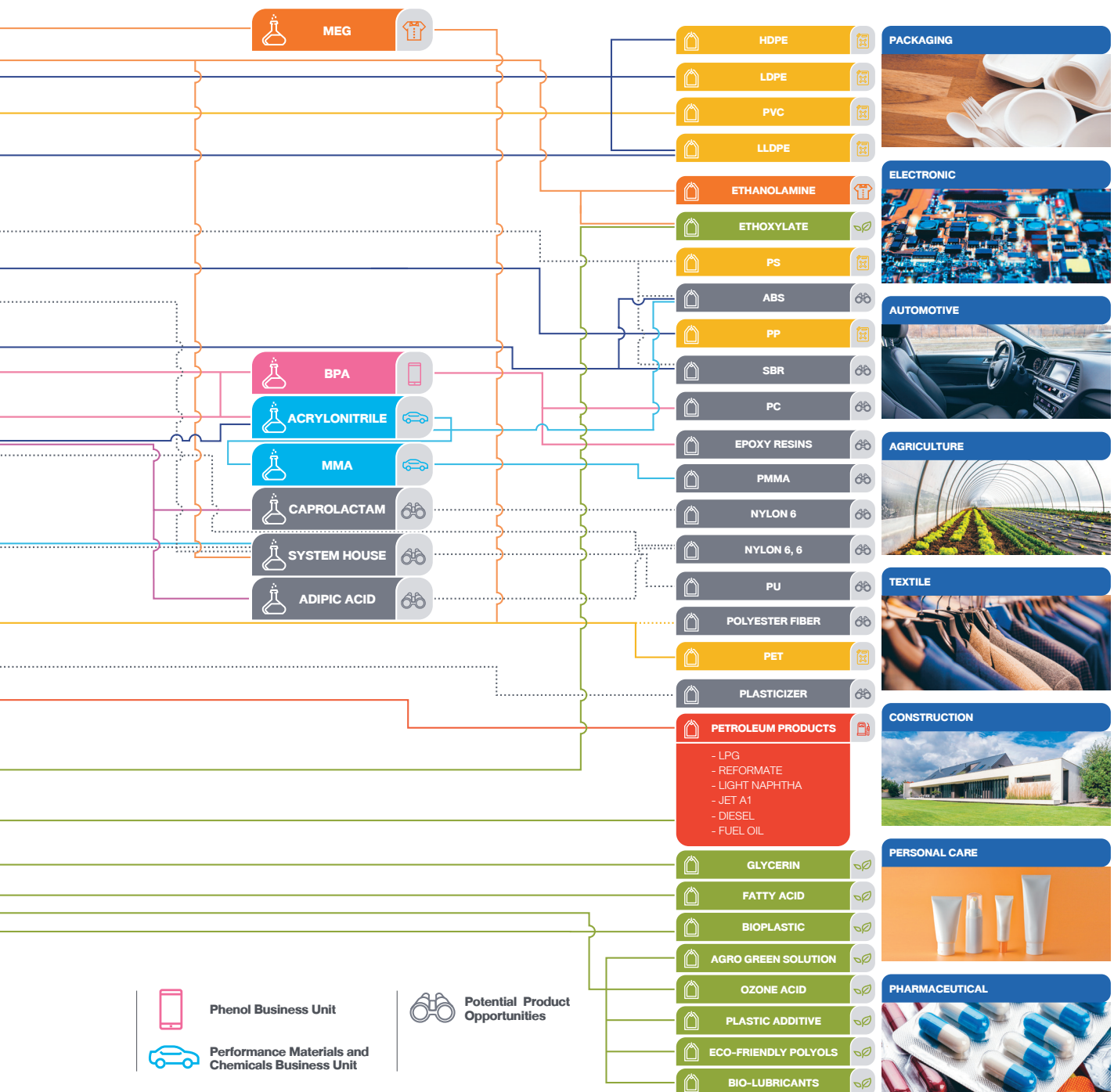
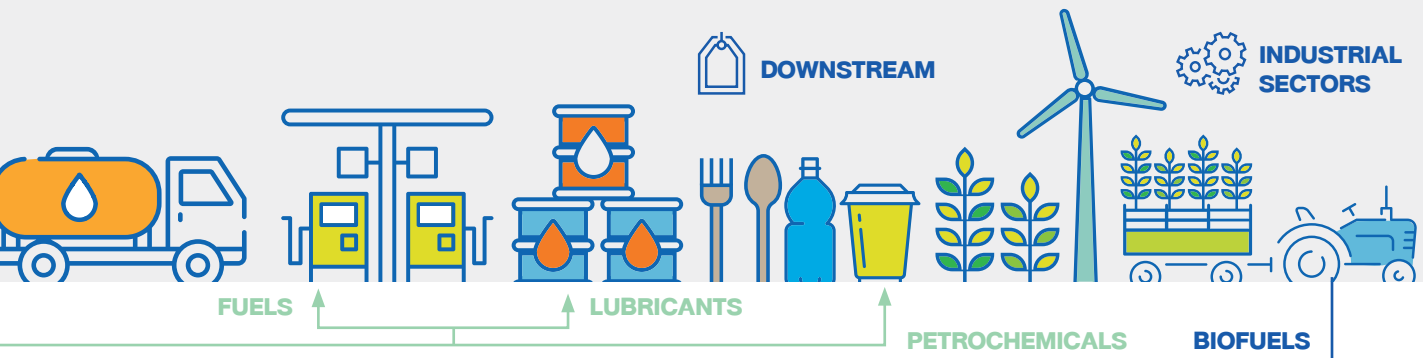
# BUSINESS VALUE CHAIN



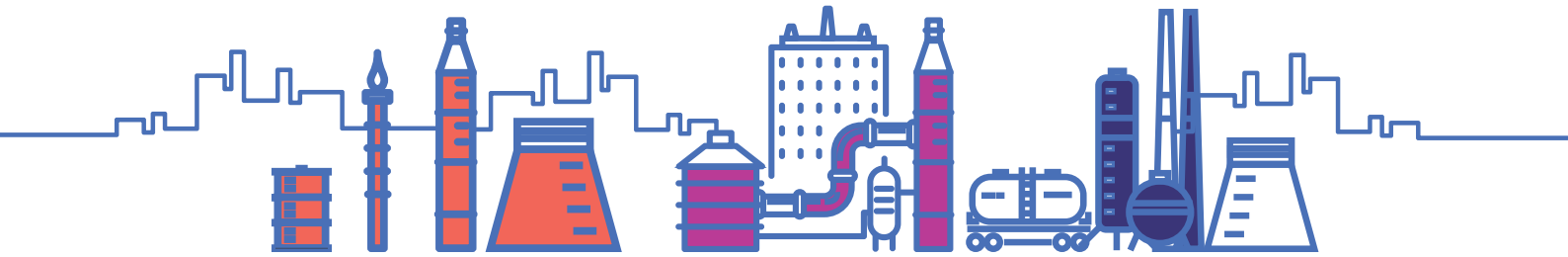
Group Performance Center-Refinery & Shared Facilities  
 Group Performance Center Aromatics

Group Performance Center-Olefins  
 Polymers Business Unit

EO-Based Performance Business Unit  
 Green Chemicals Business Unit



# NATURE OF BUSINESS AND PERFORMANCE



## GROUP PERFORMANCE CENTER - REFINERY AND SHARED FACILITIES

As Thailand's leading refiner and distributor of petroleum products, GC owns and operates a modern complex refinery equipped with hydrocracker and visbreaker units, capable of converting low-value

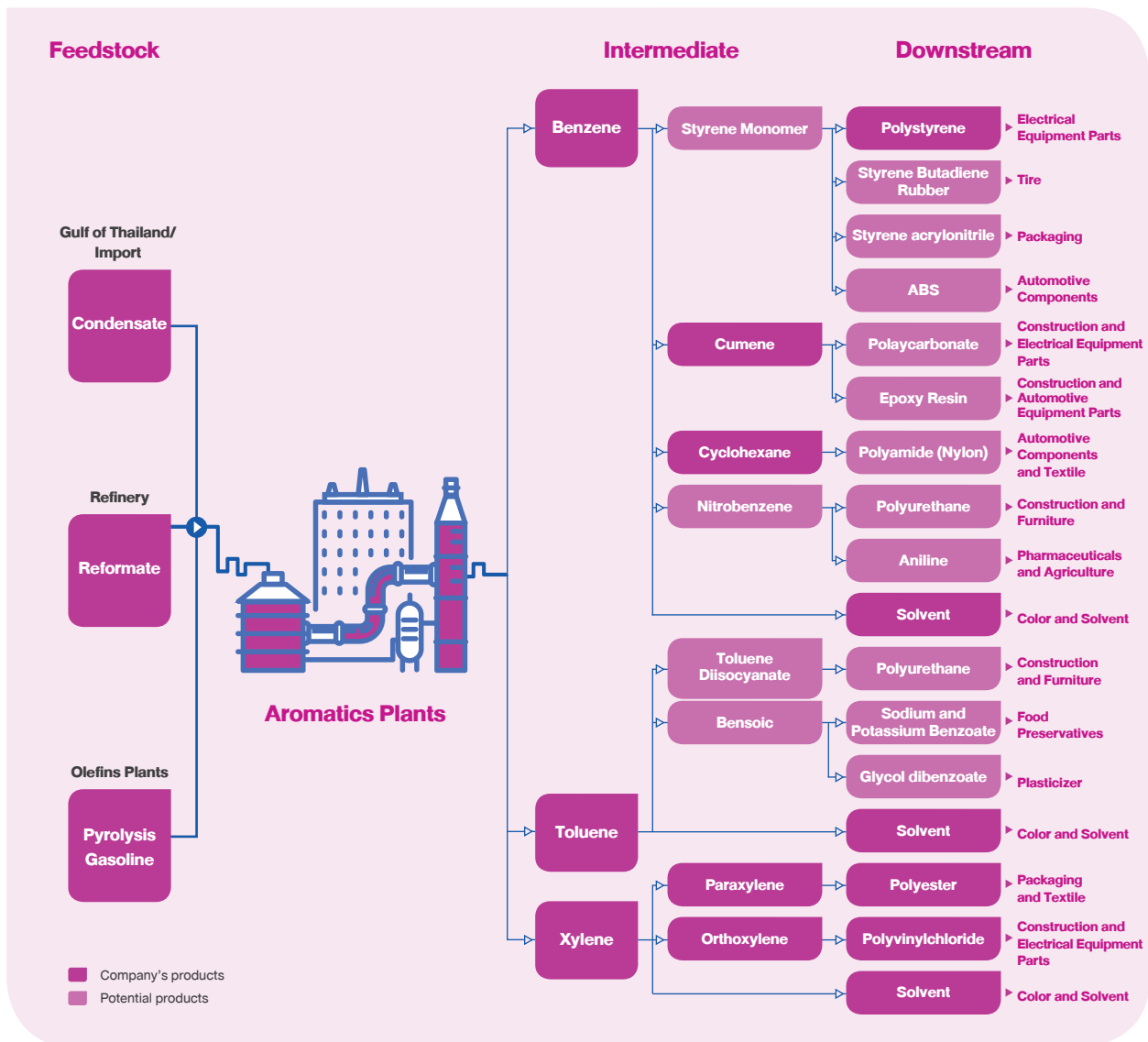
fuel oil to more valuable middle-distillate products. Our average refining capacity stands at 145,000 barrels per day of crude and 135,000 barrels per day of condensate. Additionally, our refining process is flexible, ready to be adjusted to accommodate customer demand and volatility in the market. Below is a summary of our refined products and their usage:

| Petroleum Product |                               | Usage   |
|-------------------|-------------------------------|---|
| Light Distillate  | Liquefied Petroleum Gas (LPG) | <ul style="list-style-type: none"> <li>Fuel</li> <li>Petrochemical feedstock (Olefins plants)</li> </ul>                          |
|                   | Light Naphtha                 | <ul style="list-style-type: none"> <li>Gasoline blending component</li> <li>Petrochemical feedstock (Olefins plants)</li> </ul>   |
|                   | Reformate                     | <ul style="list-style-type: none"> <li>Gasoline blending component</li> <li>Petrochemical feedstock (Aromatics plants)</li> </ul> |
| Middle Distillate | Jet Fuel                      | <ul style="list-style-type: none"> <li>Aviation fuel</li> </ul>   |
|                   | Diesel                        | <ul style="list-style-type: none"> <li>Fuel for industrial and transport sectors</li> </ul>                                       |
| Heavy Distillate  | Fuel Oil                      | <ul style="list-style-type: none"> <li>Fuel for industrial sector and maritime transport</li> </ul>                               |

As of 2019, GC has a domestic middle-distillate market share of approximately 21 percent.

## GROUP PERFORMANCE CENTER - AROMATICS

GC produces and distributes aromatics products, namely paraxylene, benzene, orthoxylene, mixed xylene, toluene, and cyclohexane. These products are used as feedstock in various industrial processes, detailed in the chart below:



Aside from these products, GC's aromatics plants yield multiple by-products, including liquefied petroleum gas (LPG), light naphtha, heavy aromatics, and condensate residue. LPG and light naphtha are

used as feedstock in our olefins plants, while heavy aromatics and condensate residue are used as feedstock in our refinery to produce jet fuel, diesel, and fuel oil.

GC currently operates two aromatics plants with a combined capacity of 2,419 thousand tons per year. The table below details the nameplate capacity of each product:

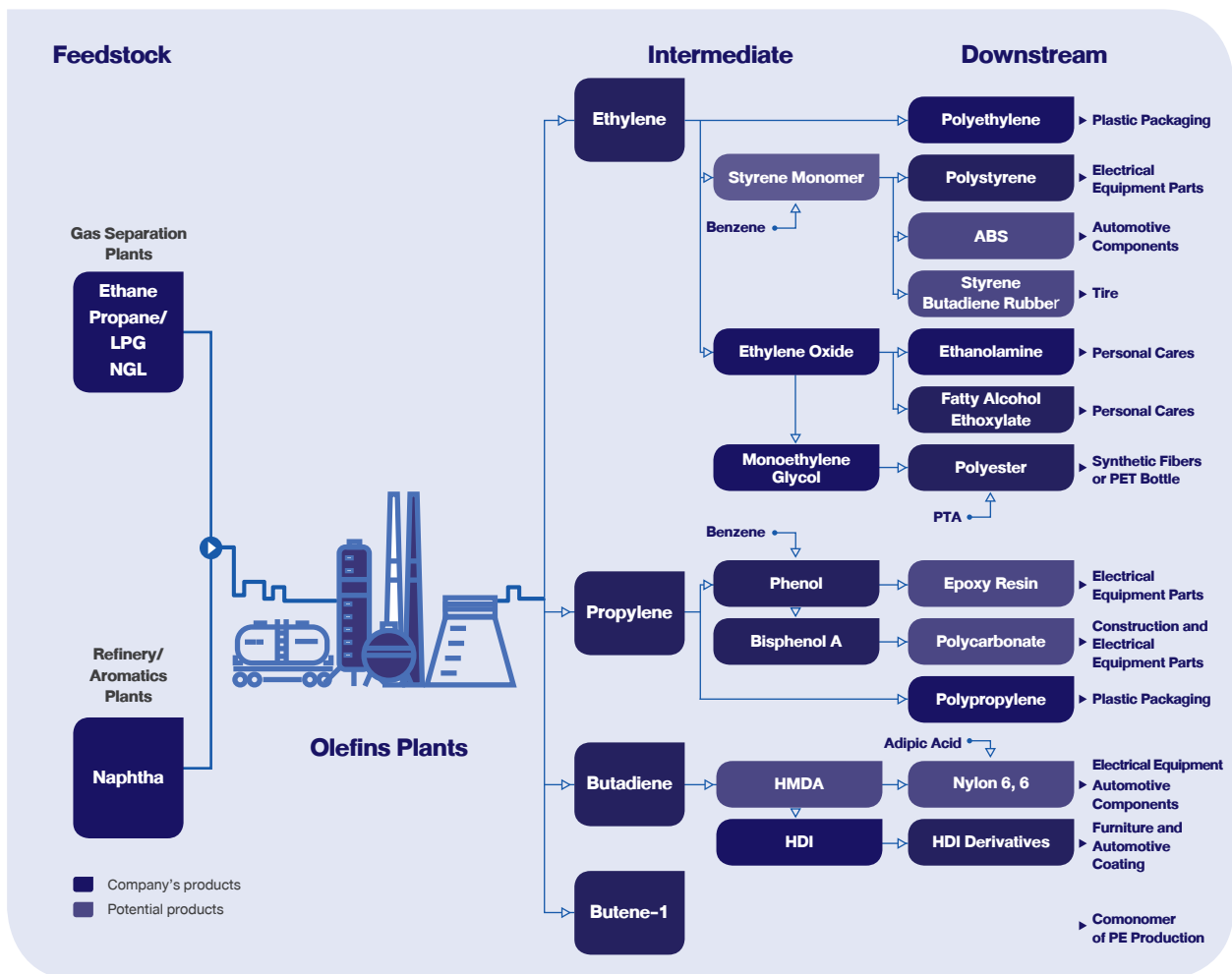
| Company | Product       | Nameplate Capacity (thousand tons per year) |
|---------|---------------|---|
| GC      | Benzene       | 697   |
|         | Toluene*      | 50  |
|         | Paraxylene    | 1,310                                       |
|         | Orthoxylene   | 86  |
|         | Mixed Xylene* | 76  |
|         | Cyclohexane   | 200   |

Remarks: \* Toluene and mixed xylene are currently used as feedstock at both aromatics plants.

As of 2019, GC has a domestic aromatics market share of approximately 70 percent.

## GROUP PERFORMANCE CENTER - OLEFINS

Olefins products obtained from GC's olefins plants mainly consist of ethylene and propylene. The chart below shows the feedstock for the production and their sources, as well as intermediate and downstream products:



The olefins plants also yield various by-products, such as pyrolysis gasoline, mixed C4, tail gas, cracker bottom, and hydrogen. GC enriches the values of these by-products through synergy with the refinery and aromatics plants. For example, pyrolysis gasoline is turned into aromatics products; cracker bottom is distilled into petroleum products; hydrogen is used in the refinery as a substitute for hydrogen produced by the Hydrogen Manufacturing Unit (HMU), which otherwise requires a higher production cost; and mixed C4 is turned into butadiene and butene-1 at the by-product value-added plant.

At GC, we also produce utilities (electricity, steam, and industrial water) for our own use, which enhances our production capability and competitiveness. Surplus volumes of the utilities are sold to Electricity Generating Authority of Thailand (EGAT) and neighboring petrochemical plants.

GC has four olefins plants with a combined nameplate capacity of 2,988 thousand tons per year of ethylene, propylene, butadiene and butene-1. The table below shows a breakdown of their capacities:

| Company | Product   | Nameplate Capacity<br>(thousand tons per year) |
|---------|-----------|--|
| GC      | Ethylene  | 2,376  |
|         | Propylene | 512  |
|         | Butadiene | 75   |
|         | Butene-1  | 25   |

As of 2019, GC has a domestic ethylene and propylene market share of approximately 35 and 30 percent, respectively.

## POLYMERS BUSINESS UNIT

Polymers are downstream petrochemicals primarily used as feedstock for everyday plastic products. They are commonly molded into multiple shapes and forms of plastic packaging, such as bags, bottles, containers for food and general goods, lubricant containers, buckets, and crates. Polymers are also used as feedstock for other downstream industries, such as electrical appliances, polyester fibre, fishery, agriculture, and construction. Our key polymer products are as follows:

- High-density polyethylene (HDPE)
- Linear low-density polyethylene (LLDPE)
- Low-density polyethylene (LDPE)
- Polypropylene (PP)
- Purified terephthalic acid (PTA)
- Polyethylene terephthalate (PET)
- Polystyrene (PS)
- Rotomolding compound.

Polyethylene (PE) are produced by GC and sold under the InnoPlus trademark. Polypropylene (PP) are produced by HMC Polymers Co., Ltd., and sold under the Moplen, Purell, Clyrell, Adstif and Adsyl trademarks. Purified terephthalic acid (PTA) is produced by GC-M PTA Co., Ltd. (GC-M PTA), while polyethylene terephthalate (PET) are produced by Thai PET Resin Co., Ltd. (TPRC), and sold under the InnoPlus trademark. Polystyrene (PS), available as general-purpose polystyrene (GPPS) and high-impact polystyrene (HIPS), are produced by GC Styrenics Co., Ltd. (GCS), under the management of GC's Polymers Business Unit and sold under the DIAREX trademark. Rotomolding compound is produced by Revolve Group Limited (RGL) and sold under the Matrix Polymers trademark.

GC Group currently operates 18 commercial polymer plants in Map Ta Phut Industrial Estate and Pha Daeng Industrial Estate, Rayong. Rotomolding compound plants operate in Malaysia, the UK, Poland, Australia, and New Zealand. The capacities of major polymer products are shown in the table below:

| Company  | Product              | Nameplate Capacity<br>(thousand tons per year) |
|----------|----------------------|--|
| GC       | HDPE                 | 850  |
|          | LLDPE                | 800  |
|          | LDPE                 | 300  |
|          | Hexene-1*            | 34   |
| HMC      | PP                   | 810  |
| GC-M PTA | PTA                  | 970  |
| TPRC     | PET                  | 147  |
| GCS      | PS                   | 90   |
| RGL      | Rotomolding Compound | 64   |

**Remarks:** \* For internal use as feedstock for LLDPE (metallocene)

## EO-BASED PERFORMANCE BUSINESS UNIT

To supplement value to current olefins products and satisfy rising demand from the industrial sector and general consumers, GC recognizes the need for high-value products which has not manufactured in Thailand yet. This is not only for import substitution, but also to raise Thailand's petrochemical competitiveness. GC has expanded businesses into ethylene-oxide-based performance products and downstream products. Our key EO-based performance products and their applications are described as follows:

### A) ETHYLENE OXIDE (EO)/ETHYLENE GLYCOL (EG)

As a downstream product of ethylene, EO used as feedstock for EG and other downstream products. EG-based products consist of mono ethylene glycol (MEG), diethylene glycol (DEG), triethylene glycol (TEG), and polyethylene glycol (PEG). Among these

products, MEG is the main feedstock combined with PTA for the production of PET bottles and polyester textile.

### B) ETHANOLAMINE (EA)

Derived from EO, EA primarily comes in either the monoethanolamine (MEA), diethanolamine (DEA), or triethanolamine (TEA) form. EA products are used as ingredients for the production of shampoos, hair conditioners, fabric softeners, and cosmetic products, as well as in pharmaceutical and cement industries, among others.

All of these EO-based products are produced by GC Glycol Co., Ltd. (Glycol).

In 2019, the EO-Based Performance Business Unit commercially operates two plants located in WHA Eastern Industrial Estate (Map Ta Phut), Rayong. The breakdown of production capacities appears in the table below:

| Company | Product | Nameplate Capacity<br>(thousand tons per year) |
|---------|---------|--|
| Glycol  | MEG     | 423  |
|         | EA      | 50   |

## GREEN CHEMICALS BUSINESS UNIT

Green chemicals are products manufactured from natural feedstocks such as palm oil, palm kernel oil, vegetable oil, animal fat, corn, sugar made from sugarcane, and cassava. These products can be used in various downstream industries, such as personal care, pharmaceuticals, food, biochemicals, and bioplastics industries. Our green chemical products are divided into two key categories as follows:

### A) VALUE-ADDED OLEOCHEMICALS (VAO)

#### METHYL ESTER

Methyl ester is a basic oleochemical. Also known as B100, it can be blended into diesel to make biodiesel that meets EN14214 European standards for diesel engines. Methyl ester helps augment the efficiency of diesel, for both lubrication and combustion. It also increases an engine's lifespan and, more importantly, minimises environmental impacts of conventional diesel.

#### FATTY ALCOHOL

Fatty alcohol is a basic oleochemicals used as a feedstock in a number of different processes in the personal care industry. Also used as an ingredient or a component of many other products, including surfactants, plasticisers, solvents, aroma compounds for perfumes, detergents, foam stabilizers, lubricants, cosmetics, plastic intermediates, shampoos, as well as paints and coating products. They are also found in leatherwear and ink.

#### FATTY ALCOHOL ETHOXYLATE

Derived from fatty alcohol and EO, fatty alcohol ethoxylate is used as feedstock for shampoo, personal care, and home care products. In textiles, it is used as a scouring agent, which is part of the preparation process, and as softener, which is the last step in fibre preparation.

#### GLYCERIN

Glycerin, a by-product of methyl ester and fatty alcohol production, is used in pharmaceuticals, food, and personal care industries.

## FATTY ACID

Fatty acid is a basic oleochemical product used for personal care production, such as soap and cosmetics, also used as a feedstock in specialty oleochemicals downstream production.

## SPECIALTY OLEOCHEMICALS

Specialty oleochemicals are made from basic oleochemicals in a downstream process. These specialty products are used in multiple industries, including cleaning products, personal care products, plastic additives, construction, and oil well drilling. Examples of specialty oleochemicals are ozone acid, bio-lubricants, green polymer additives, agro-green solutions, and eco-friendly polyols.

### B) BIOPLASTICS AND BIOCHEMICALS

Bioplastics and bio-based chemicals are derived from natural feedstock, including sugar from sugarcane, cassava, and corn. The feedstock, depend on type, is turned into chemicals such as, lactic and succinic acids. These two chemicals are used in the production of bioplastic such as polylactic acid (PLA) and polyesters such as polybutylene succinate (PBS), respectively.

The Company produces these value-added oleochemicals (VAO) through Global Green Chemical Public Company Limited (GGC), Emery Oleochemicals (M) Sdn. Bhd. (EOM) and Emery Specialty Chemicals Sdn. Bhd. (ESC) (EOM and ESC together called Emery), a joint venture between GC and Sime Darby Plantation (M) Sdn. Bhd., headquartered in Malaysia. Emery is a world-class producer and distributor of oleochemicals. Emery has plants in key regions across the globe, including Malaysia, Germany, and the U.S., and a worldwide network of subsidiaries to support trading and marketing. Its distribution agents are also present in all geographical regions.

GC operates the bioplastics and biochemicals business through NatureWorks LLC and PTTMCC Biochem Co., Ltd. (PTTMCC). NatureWorks, a joint venture with Cargill Inc. of the U.S., is the proprietor of a polylactic acid (PLA) technology with a commercial capacity of 150,000 tons per year. PTTMCC is a joint venture with Mitsubishi Chemical Corporation (MCC), established for the production and distribution of

polybutylene succinate (PBS), an environment-friendly product composable in ambient temperature. PTTMCC is the world's sole producer of bio-PBS, owning a plant in Rayong with a capacity of 20,000 tons per year.

The capacities of commercial plants in Thailand and abroad under the Green Chemicals Business Unit are shown in the table below:

| Company     | Product                         | Nameplate Capacity (thousand tons per year) |
|-------------|---------------------------------|---|
| GGC         | Methyl Ester                    | 500   |
|             | Glycerin                        | 31  |
|             | Fatty Alcohol                   | 100   |
|             | Fatty Alcohol Ethoxylate        | 124   |
| Emery       | Basic Oleochemicals in US       | 291   |
|             | Basic Oleochemicals in Asia     | 260   |
|             | Specialty Oleochemicals in US   | 48  |
|             | Specialty Oleochemicals in Asia | 53  |
|             | Specialty Oleochemicals in EU   | 46  |
| NatureWorks | Polylactic Acid (PLA)           | 150   |
| PTTMCC      | Polybutylene Succinate          | 20  |

## PHENOL BUSINESS UNIT

Phenol is used as feedstock for the production of downstream products, such as engineering plastics. These products are in high demand in high-growth industries, including automotive, electrical appliance and electronics, and construction. GC Group operates the phenol business through PTT Phenol Company Limited (PPCL) with key products listed below:

### A) PHENOL

Phenol, an intermediate petrochemical derived from benzene and propylene, is a key feedstock for bisphenol A (BPA), phenolic resin, and various derivatives for the plastic, pharmaceuticals, and chemical industries.

### B) ACETONE

Acetone, a by-product from phenol production, is a very common solvent in various industries, such as chemical, cosmetics, and medical industries. Acetone is also used as feedstock for bisphenol A and methyl methacrylate, used in plastics and coating industries, among others.

### C) BISPHENOL A

Bisphenol A is an intermediate petrochemical and feedstock for polycarbonate (PC), an engineering plastic used in various industries, such as the automotive industry, electrical appliance and electronics industry, and construction industry. BPA is also a key feedstock for epoxy resin.

In 2019, PPCL operates three commercial plants located in WHA Eastern Industrial Estate (Map Ta Phut), Rayong, as detailed in the following table:

| Company | Product     | Nameplate Capacity<br>(thousand tons per year) |
|---------|-------------|--|
| PPCL    | Phenol      | 492  |
|         | Acetone     | 304  |
|         | Bisphenol A | 158  |

## PERFORMANCE MATERIALS AND CHEMICALS BUSINESS UNIT

Performance materials and chemicals are major components in burgeoning downstream industries, such as the automotive, construction, and engineering plastic industries. Products under the business unit consist of:

### A) HEXAMETHYLENE DIISOCYANATE (HDI) AND DERIVATIVES

HDI is an intermediate petrochemical used in the production of PU coating, which plays a prominent role in construction and automotive industries. PU coating can also be applied to wood, metals, plastics, furniture, and vehicles to enhance their glossy and scratch-resistant properties. GC produces HDI and HDI derivatives through Vencorex Holding France (Vencorex) in France.

### B) ACRYLONITRILE (AN)

AN is an intermediate petrochemicals widely used as monomers for the production of acrylonitrile polymers, such as acrylic fibre and other synthetic fibres for component of garments and carpets production. AN is also used as feedstock for conducting acrylonitrile-butadiene-styrene (ABS). Thanks to its strength, resistance to scratch,

friction, wear and tear, and easy to clean properties, ABS is generally molded into exterior shells of electrical and electronics appliances. AN is also used as feedstock for nylon, which is popular in the automotive industry, particularly in car parts and joints, due to its superior hardness and toughness. Nylon parts can maintain their forms and withstand impacts; they can better resist friction, heat, and chemicals than ordinary plastics.

### C) METHYL METHACRYLATE (MMA)

MMA is an intermediate petrochemical and the main feedstock for polymethyl methacrylate (PMMA) and PMMA acrylic sheets, which are components of furniture, commercial light boxes, smartphone screens, television screens, and computer screens. They are also an ingredient for emulsion and paint, commonly used in the construction industry.

GC produces AN and MMA through PTT Asahi Chemical Co., Ltd. (PTTAC), whose plant is located in WHA Eastern Industrial Estate (Map Ta Phut), Rayong.

Vencorex's plants are located in industrial estates in France, the U.S., and Thailand, while PTTAC's plant is located at WHA Eastern Industrial Estate (Map Ta Phut), Rayong. Their production capacities are shown below:

| Company  | Product                   | Nameplate Capacity<br>(thousand tons per year) |
|----------|---------------------------|--|
| Vencorex | HDI and HDI Derivatives   | 127  |
| PTTAC    | Acrylonitrile (AN)        | 200  |
|          | Methyl Methacrylate (MMA) | 70   |

## SERVICES AND OTHERS

In addition to the eight business units and performance centers, GC values businesses and activities that support business stability and comprehensiveness of the business chain. These various endeavors are listed below:

- 1) Jetty and Chemical Tank Farm:** Thai Tank Terminal Limited (TTT), provides terminals and liquid chemicals storage for industrial customers in Map Ta Phut Industrial Estate.
- 2) Utility Business:** GC has invested by holding Global Power Synergy Public Company Limited (GPSC) shares, GPSC produces and supplies electricity, steam, and industrial water to companies under PTT Group and other industrial plants.
- 3) Plant Management and Engineering Design Services:** GC Maintenance and Engineering Co., Ltd. (GCME), provides multiple services, including plant maintenance, design and engineering, construction, pipework, procurement, material work, and process administration are offered to petroleum and petrochemical operators in Map Ta Phut Industrial Estate, as well as other industries both in Thailand and Asia. GC has also joined hands within PTT Group in establishing PTT Energy Solutions Co., Ltd. (PTTES), to provide technical engineering consultation service.
- 4) Safety, Occupational Health, Environmental, and Security Services:** NPC Safety and Environmental Service Co., Ltd. (NPC S&E), provides integrated services concerning safety, occupational health and environmental training; design and installation of fire protection systems; and consultation on international standard management. Its subsidiary, NPC S&E Security Guard Co., Ltd. (NPCSG), provides security service, and safety consulting and training.
- 5) Pipeline Infrastructure Service:** EFT pipeline infrastructure service for petroleum and petrochemical operators in Map Ta Phut Industrial Estate and nearby areas through Eastern Fluid Transport Co., Ltd. (EFT).
- 6) Information and Communication Technology Service:** PTT Digital Solutions Co., Ltd. (PTT Digital), provides integrated ICT services. The service also covers design, development, and maintenance of ICT systems suiting corporate customers.
- 7) Outsourcing Service:** Business Services Alliance Co., Ltd. (BSA) supplies manpower and contractors to PTT Group.
- 8) Marketing and Sales of Methyl Amine Derivatives, Plastic Compounds, Specialty Products, and Health and Nutrition Products:** As GC's marketing arm, Solution Creation Co., Ltd., is in charge of selling GC products while seeking marketing opportunities in niche markets. It also works on product development to supplement value and satisfy the diverse demand of various industries, including packaging, household chemicals, electronics, textile, food and dietary supplements.
- 9) Polymer Sales and Marketing Service:** GC Marketing Solutions Co., Ltd. (GCM) takes charge of marketing and sales of polymer-based products. Currently, GCM has authorized dealers both in Thailand and in all regions of the world.
- 10) Logistics Service:** GC Logistics Solutions Co., Ltd. (GCL), takes charge of providing integrated logistics services for producers of polymers under GC Group.
- 11) GC Group's Liquidity Management and Financing Vehicle Service:** GC Treasury Center Co., Ltd. (GCTC), manages financial affairs and fund acquisition for companies under GC Group GCTC.
- 12) Management Consultancy:** Pracharath Rak Samakkee Rayong (Social Enterprise) Co., Ltd. (PRS RAYONG), offers advice on business administration in various areas, such as agriculture and trading.
- 13) Social Enterprise:** Sarn Palang Social Enterprise Co., Ltd. (SPSE), produces, buys and sells products and services of community, social, and environmental benefit.
- 14) Plastic Packaging Development Support:** S. P. Petpack Inter Group Co., Ltd. (SPIG), and TBPI & Myanmar Star Co., Ltd. (TPBIMS), fosters the development of plastic packaging in preparation for market growth in Myanmar.
- 15) Land and Property Management:** GC Estate Co., Ltd. (GCEC), manages land and property to support the company's investment and/or strategic joint ventures.
- 16) Corporate Venture Capital Investment (CVC):** GC Ventures Co., Ltd. (GCV), and GC Ventures America Corporation (GCVA) invest both direct and indirect in the form of corporate venture capital.

# ECONOMIC AND MARKET OVERVIEW IN 2019 AND OUTLOOK ON 2020

## ECONOMIC OVERVIEW

In 2019, global economic was slow down due to the uncertainty of U.S.-China trade war, Brexit, geopolitics in middle east region, Hong Kong protest, and strain between Japan and South Korea. These factors also impacted on petroleum and petrochemical industries.

## PETROLEUM AND PETROCHEMICAL MARKET OVERVIEW

### PETROLEUM

The situation of crude oil market in 2019 was highly volatile. In the first half of 2019, Dubai crude price was increased to 65 USD per barrel on average due to crude production cut policy (at 1.2 million barrels per day) from OPEC meeting on December 2018, the end of waiver grace period on May 2019 for 8 countries which imported crude from Iran, and US sanction on Venezuela which impacted to crude volume for export 0.5 to 0.8 million barrels per day. Although the extension crude production cut of OPEC and allies' policy was occurred, the chronic trade war and the increasing of US crude production (the highest record at 12.6 million barrels per day) on October 2019 still negatively impacted on the crude price. From these factors, the Dubai crude price in 2019 was 63.5 USD per barrel on average, declining 5.9 USD per barrel on average from previous year. Meanwhile, petroleum crack spread in 2019 was also highly volatile from weather fluctuation, concerning of economic slowdown, and the preparation for the new regulation of International Marine Organization (IMO) for banning fuel with high Sulphur content of marine ships. These were negatively impacted on petroleum crack spread compared to 2018.

### AROMATICS

The situation of paraxylene market in 2019 was affected from new capacity and poor demand. From supply side, the new capacity was 6.4 million tons, increased global capacity in 2019 to 57.7 million tons.

The new capacity mainly came from China due to self-sufficiency policy which aimed to reduce import volume. From demand side, paraxylene derivatives were pressured by the trade war. Nonetheless, some producers, which use high feedstock cost such as Mixed Xylene, were stop their production due to no economic worth to run. With these factors, the market price spread between paraxylene and naphtha in 2019 was 378 USD per ton on average, declining 87 USD per ton on average from previous year.

The situation of benzene market in 2019 was affected same as the paraxylene market. From supply side, the benzene supply was increased from the additional paraxylene capacity (as discussed above), since benzene is a by-product. From demand side, benzene derivatives were also pressured by the trade war. However, the benzene production cut from high cost producers and the return from plant turnaround activities of styrene monomer producers were eased the situation of benzene market in the second half of 2019. With these factors, the market price spread between benzene and naphtha in 2019 was 118 USD per ton on average, declining 101 USD per ton on average from previous year.

### OLEFINS

The situation of ethylene market in the beginning of 2019 was good due to the supply loss from unplanned shutdown of some producers in Europe and South Korea. However, since second quarter, the ethylene price was decreased significantly from many factors such as some producers in middle east reduced downstream' s production and export ethylene more to Asia, additional capacity from North East Asia producers, the polyethylene resin export from U.S. to Asia, and the trade war. Therefore, the ethylene price of South East Asia (SEA) in 2019 was 823 USD per ton on average, declining 318 USD per ton from previous year. Meanwhile, the market price spread between ethylene and naphtha was 300 USD per ton on average, declining 227 USD per ton from previous year due to decrease of 28% in ethylene price.

The situation of propylene market in the first half of 2019 was weak due to additional capacities from North East Asia producers and propylene derivative plants maintenance. For the second half of 2019, the market situation was improved a bit from olefins plants including on-purpose propylene plants maintenance in North East and South East Asia. However, the market situation still had a negative impact from additional capacities from North East Asia producers. Therefore, the propylene price of South East Asia (SEA) in 2019 was 838 USD per ton on average, declining 150 USD per ton from previous year. Meanwhile, the market price spread between propylene and naphtha was 315 USD per ton on average, declining 59 USD per ton from previous year.

## POLYMERS

The situation of PE market in 2019 was volatile continuously from 2018 due to the uncertainty of the trade war, which gave negative impacts on customers confidence and directly to manufacturers in China, and PE trade flow changing of US export from China to South East Asia. These factors including additional capacities suppressed PE price in South East Asia. Therefore, HDPE LLDPE and LDPE price of South East Asia in 2019 were 991 952 and 1,019 USD per ton on average, declining 339 229 and 188 USD per ton, respectively, from previous year. Meanwhile, the market price spread between PE and naphtha was 464 USD per ton on average, declining 161 USD per ton from previous year.

The situation of PP market in 2019 was weak compared to previous year due to the decreasing of PP demand in Asia Pacific, as a result of the economic slowdown and customer confidence, and crude oil price volatility. In 2019, the PP additional demand was 3 million tons while the PP additional capacity was 3.8 million tons from additional capacities of North East Asia and Malaysia producers. Therefore, PP price of South East Asia in 2019 was 1,101 USD per ton, declining 168 USD per ton from previous year. Meanwhile, the market price spread between PP and naphtha was 578 USD per ton on average, declining from previous year.

For the situation of PET in 2019, the demand growth was 5.1% per annum by additional demand at 1.2 million tons (total demand at 25 million tons per year) while additional capacity was 0.8 million tons (total capacity

at 32 million ton per year). PET market price was affected by the trade war and feedstock prices (PX, PTA, and MEG) declining due to the flooding of additional capacities. Therefore, PET market price in 2019 was 960 USD per ton on average, declining 276 USD per ton from previous year. For PTA, as a polyester's feedstock, it was also affected by the same factors as mentioned above. Furthermore, the manufacturers were careful about feedstock procurement in order to control feedstock inventory. So, the demand growth of PTA was declined from 11% to 5-6% per annum compared to the previous year. Therefore, PTA market price was 737 USD per ton on average in 2019, declining 119 USD per ton from previous year.

For the situation of PS in 2019, the global demand and global capacity increased to 10.7 and 15.2 million ton per year, respectively. However, the PS demand for both GPPS and HIPS was pressured by the buyer's concern from the trade war, therefore, PS producers had to compete in term of pricing. Meanwhile, the styrene monomer (SM) price was volatile following benzene and crude price. Therefore, the market price spread between PS and SM in 2019 was 235 USD per ton on average, increasing 51 USD per ton from previous year.

## ETHYLENE OXIDES

In 2019, the MEG demand growth was slowdown compared to previous year due to the trade war, while, the MEG supply was increased from the additional capacity especially the new capacity from US which has cost competitiveness advantage comparing to others. Therefore, MEG China spot market price (ASP) in 2019 was 574 USD per ton on average, declining 332 USD per ton from previous year.

For EA market, the demand was impacted from the economic slowdown and the declining of ethylene price. Therefore, the EA China market price in 2019 was 1,002 USD per ton on average, declining 184 USD per ton from previous year.

## GREEN CHEMICALS

The 2019 methyl ester market was up, driven by higher demand of 0.2 million tons from 2018 to 1.6 million tons per year, mainly due to the state promotional

measure for higher biodiesel consumption to absorb the surplus crude palm oil in the market and the state policy to promote B10 as alternative fuel for diesel, beginning in May 2019, by setting the price spread 1 Baht per litre below B7, and later 2 Baht per litre below B7 in October 2019. These measures were aimed to promote B10 to be national primary diesel grade, replaced B7, on January 1, 2020. The B20 diesel market became more and more popular after several diesel engine manufacturers certified the compatibility, and a price incentive of 5 Baht per litre discount to the B7 diesel. The daily B20 consumption surged to 7 million litres per day, surpassing the government target of 5 million litres per day. With a shift in government policy toward B10 as a national prime fuel, the Ministry of Energy slashed the discount incentive from 5 to 3 Baht per litre in October 2019, whilst the market was very competitive, driving down the retail margin amidst very high volatility of raw material prices and glut. The 2019 total production of methyl ester stood at 2.6 million tons, 0.5 million tons up from 2018. The 2019 price of methyl ester, fluctuating with the price of crude palm oil, equaled 25.85 Baht per kilogram, declining 2.07 Baht per kilogram or 7% from the average price of 27.91 Baht per kilogram in 2018.

The 2019 demand for natural fatty alcohols was relatively stable due to competitive pricing with alternative products, particularly synthetic fatty alcohols. However, demand from China was subdued by the trade war and the weakening RMB currency, whilst the supply also sank following the permanently closure of Shell Chemical's plant in England in early 2019 with a capacity of 120,000 tons of natural fatty alcohols per year and the exit of some producers in China disqualified by stricter environmental regulations, as well as the exit of producers in India with negative profit margins due to higher costs of crude palm oil imports after higher import tariffs. With the above demand and supply scenario, the 2019 price falling 318 USD per ton to 1,250 USD per ton, a 20% decline from 1,568 USD per ton in 2018, falling in line with the price of crude palm oil.

The 2019 ethoxylate fatty alcohols market growth was down from the previous year, following the sluggish economy impacted by the trade war inhibiting demand and affecting the home and personal care business. The ethoxylate fatty alcohols market was also under pressure from the pricing competition

adopted by other producers in Southeast Asia and other related factors, including volatility of exchange rates, particularly the continuously rising Baht currency against the U.S. dollar and neighbors' currencies, hurting export and overall competitiveness, as well as a volatile natural fatty alcohol price which effects to product cost management.

The demand for PLA in 2019 grew with higher environmental awareness and unique properties of bioplastics on natural raw materials and natural composable, which target mainly on packaging business, an industry with continuous growth. The target market was products that can be replaced by bioplastic with film extrusion injection and thermoforming processes.

PTT MCC Biochem Co., Ltd. a GC subsidiary, began its business development in 2018 with products specifically suited with unique properties and the pricing structure of PBS and turned into strategic applications, including marketing compatible with PBS and development of products with brand owners. These strategic applications became successful in early 2019 with end products like coffee capsules, tableware and cutlery, barrier film and paper coating. Notably these products are home compostable (single-use and naturally degradable).

## PHENOL

The phenol market was relatively stable in early 2019, continuing from 2018, but slowed down in the latter half of 2019, due mainly to impacts of the trade war directly affecting downstream businesses, particularly the automotive industry. On the supply side in 2019, 200,000 additional tons per year from a new factory in India were added amidst shutdowns at several other producers, compared with 2018. The trade flow and profit margins of phenol producers exporting to China were squeezed after the anti-dumping measure launched by the Chinese government in May 2019. All the above cut the price spread between products and feedstock from 480 USD per ton to 340 USD per ton in 2019.

The acetone market in 2019 was affected same as phenol. However, demand rose in the last quarter of 2019 after start-up of MMA plant with a capacity of 235,000 tons per year and an isopropyl alcohol (IPA) factory, with a capacity of 50,000 tons per year in China, driving up the price of acetone in China's markets.

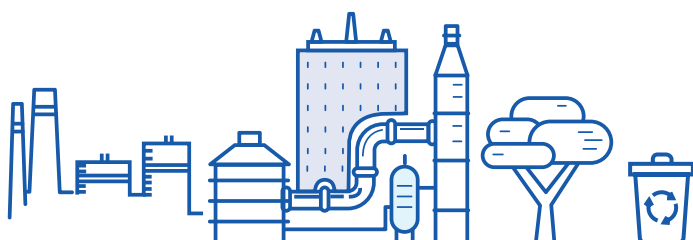
The 2019 bisphenol A (BPA) demand was slowdown from the trade war, especially that for polycarbonate products as automotive parts. In terms of supplier, there were two new plants in China with a total capacity of 255,000 tons per year, squeezing the bisphenol A business in the latter half of 2019. All the above drove the price spread between BPA products and feedstocks from 376 USD per ton down to 277 USD per ton in 2019.

## PERFORMANCE MATERIALS AND CHEMICALS

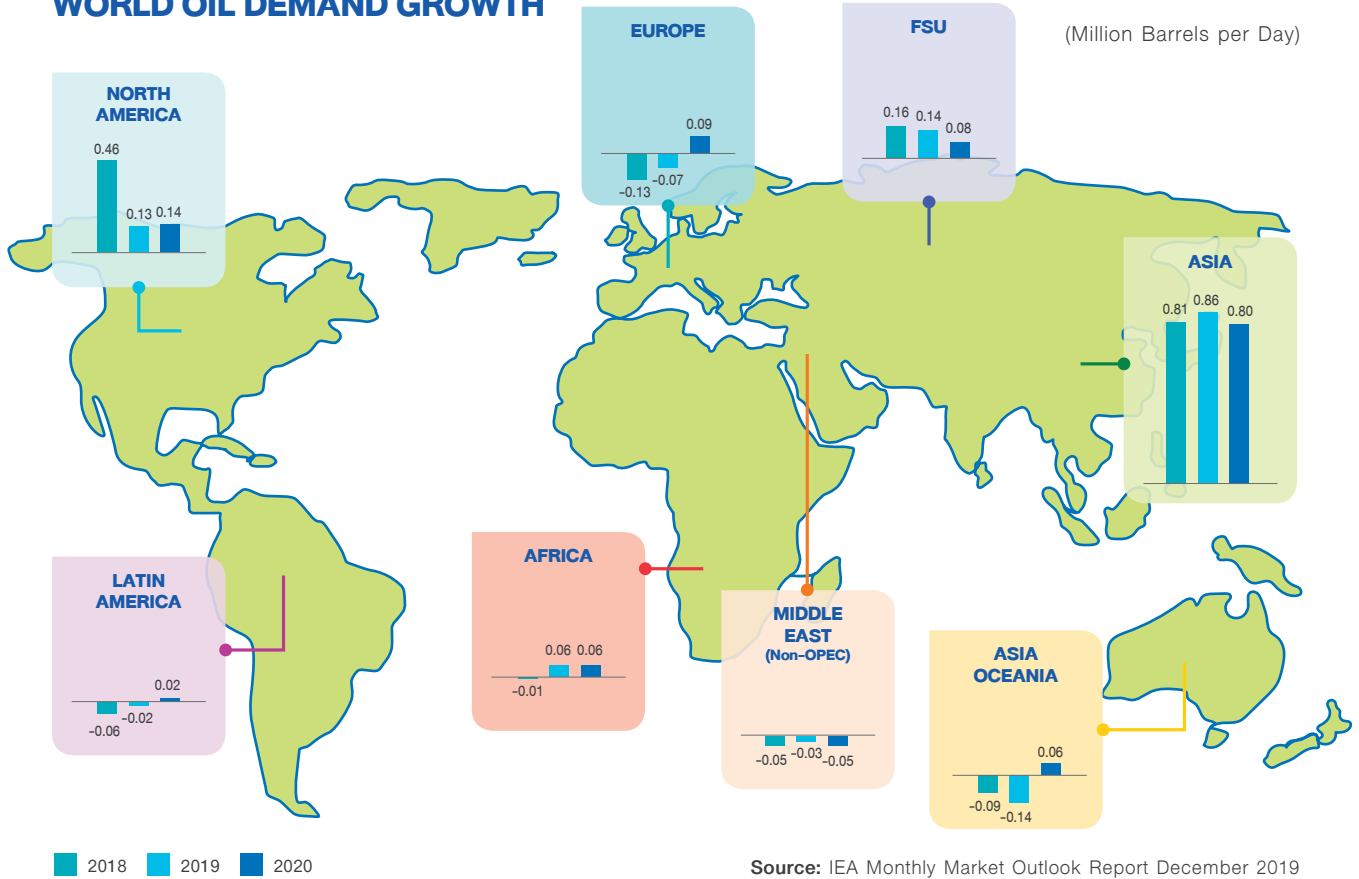
The 2019 global aliphatic diisocyanate market, including HDI and HDI derivatives, gained 7% from 2018 to 315,000 tons with Asia is the largest market. Vencorex is the Thailand's first manufacturer of HDI products with growth potential, while other big manufacturers in Asia and Europe are Covestro BASF and Wanhua.

The 2019 global AN demand was 6.1 million tons with an average global growth projection of 4% per annum, and with Northeast Asia as the world's largest market, accounting for 57% of the global consumption, equivalent to 3.5 million tons. AN is the monomer of several products: 39% for acrylonitrile butadiene styrene (ABS), 21% for acrylic fiber, 18% for acrylamide, and 8% for nitrile rubber. With continuous consumption growth of automobiles and electrical appliances in Asia, AN consumption is projected to soar. However, the ongoing trade war and geopolitical tension were still pressured the demand for AN products. The 2019 AN price equaled 1,626 USD per ton, down from 1,973 USD per ton in 2018.

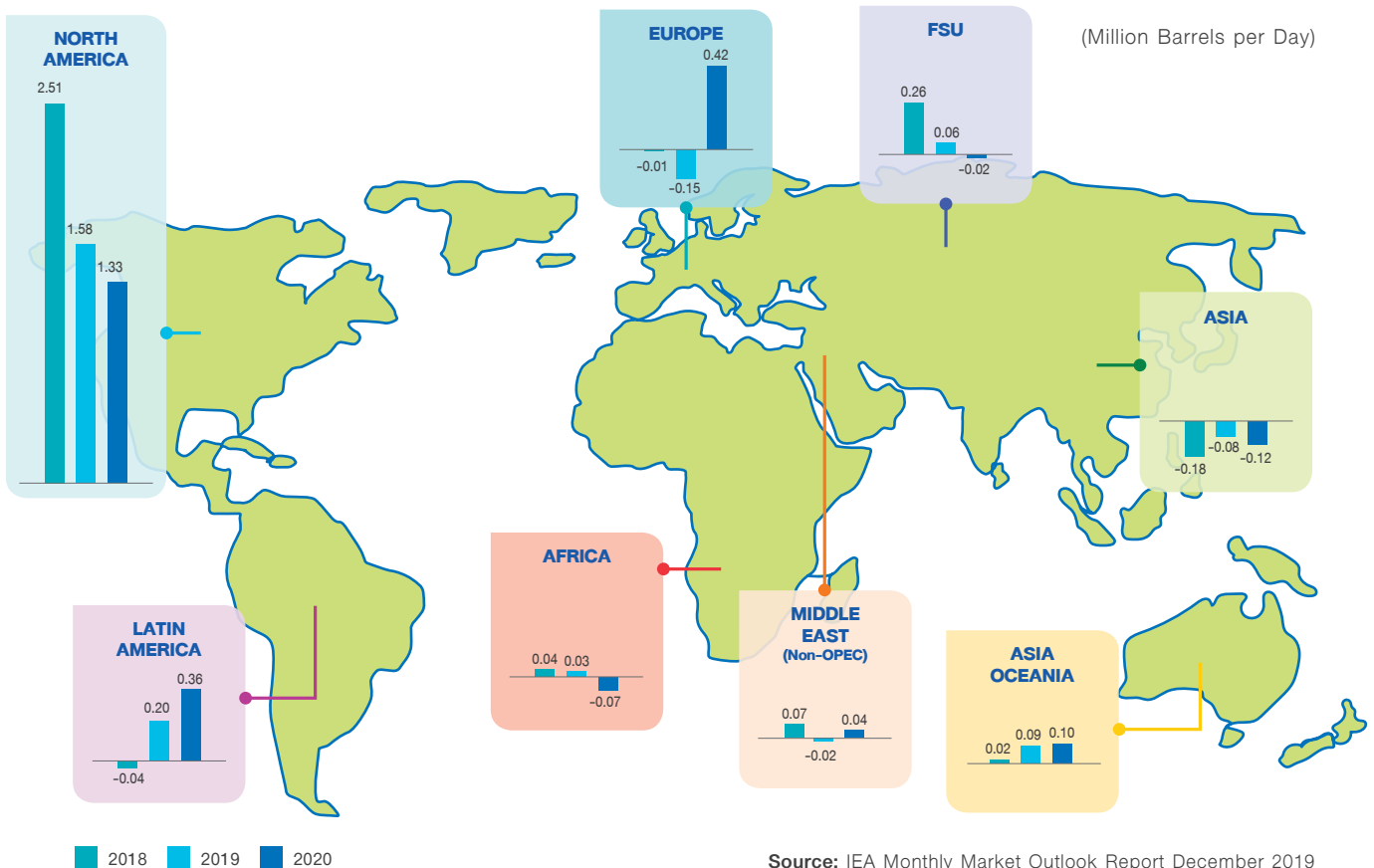
The 2019 global market size of MMA was around 3.6 million tons and is projected to grow 3.6% per annum. The demand for MMA in Asia is currently around 2.1 million tons, accounting for 60% of global demand. Most of the MMA, 64% of total, is used for production of acrylic sheets and plastic MMA (PMMA) molding compounds, with demand growth in parallel with the construction industry, industrial goods and the automotive industry. However, the impact of trade war kept the MMA product price down from 2,592 USD per ton in 2018 to 1,818 USD per ton in 2019.



## WORLD OIL DEMAND GROWTH



## WORLD OIL SUPPLY GROWTH



## 2020 OUTLOOK

The 2020 global economic is likely to grow, leading by the emerging markets countries which drive global economic recovery. However, uncertainties do exist including the ongoing trade war, Brexit, and geopolitical tension in various regions, as well as concerns about economic recession. These uncertainties will continuously depress the overall global economic growth in 2020.

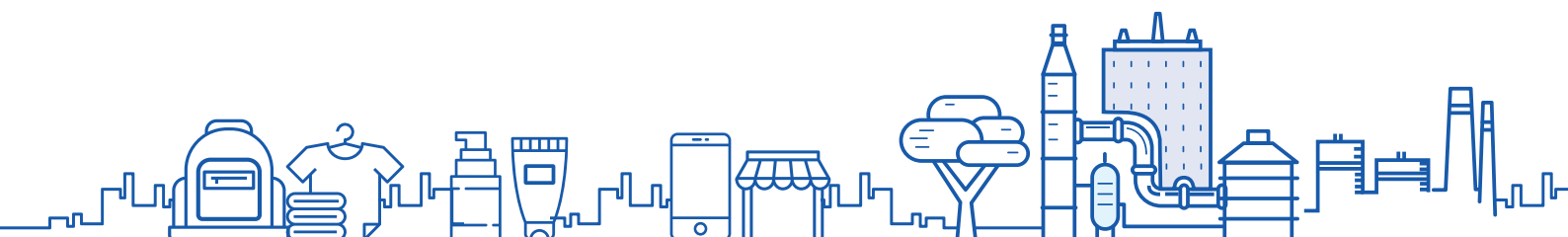
The International Energy Agency (IEA) issued a projection of global demand growth of crude oil in 2020 at 1.2 million barrels per day to 101.5 million barrels per day under the same set of concerns mentioned above. Despite the U.S. economic sanction on exports of crude oil from Iran and Venezuela, production from the U.S. would continue to rise. The OPEC and allies therefore decided on December 5, 2019, to develop a resolution to stabilize the global crude price.

The 2020 refining industry is set with a positive push from the International Maritime Organization (IMO)'s measure to set the use of fuel oil with sulfur contents

lower from 3.5% to 0.5% in weight, effective on January 2020. The enforcement will push up demand for diesel and low-sulfur fuel oil for marine vessels and slow the demand for high-sulfur fuel oil. The overall refining industry in 2020 is projected to perform better than in 2019.

The 2020 market for aromatics and its derivatives is projected to be comparable with the 2019 market. In addition to all the economic factors mentioned above, the market will still come under pressure from additional capacity mostly from China. This could be offset by lower production and shutdowns of high-cost producers who cannot sustain the profit margins and higher demand from derivatives product producers.

The 2020 market for olefins and its derivatives is expected to be comparable with the 2019 market. In addition to all the above economic parameters, demand is expected to grow. However, market still pressured by additional capacity from cost-competitive producers in the U.S. to the Asian market, generally in the form of polyethylene and the lower import of olefins into China under the state policy on self-sufficiency.



# MANAGEMENT DISCUSSION AND ANALYSIS

For 2019 performance, PTT Global Chemical Public Company Limited (the Company) had total sales revenue at Baht 409,688 million, declined by 21% from the previous year, and had Net profit at Baht 11,682 million, declined by 71% from the previous year, which mainly due to the decrease in average product prices and lower sales volume. Average products prices decreased as a result of concerns on global economic impacted by U.S.-China trade tension throughout the year, total sales volume decreased due to planned maintenance shutdown of major businesses including Aromatics unit in Q2/2019, and Refinery unit in Q4/2019,

whilst Thai Baht continue its appreciation. These resulted to the declining in performance of major businesses. Furthermore, in 2019, the company had Share of Profit from Investments in JV and associates at Baht 4,570 million, when combining with Stock Loss net Reversal of NRV at Baht 114 million, Commodity Hedging gain at Baht 1,248 million, FX gain at Baht 2,007 million, and realized expenses on new regulation about employee benefit under Labor Protection Act at Baht 784 million (Net Deferred income tax), the Company recorded net profit at Baht 11,682 million (Baht 2.59 per share), decreased by 71% from 2018.

## PERFORMANCE SUMMARY

| (Unit: Million Baht)                                | 2018    | 2019    | YoY % +/- |
|---|---------|---------|-----------|
| Sales Revenue                                       | 515,449 | 409,688 | -21%      |
| EBITDA  | 58,263  | 27,802  | -52%      |
| EBITDA Margin (%)                                   | 11%     | 7%      | -40%      |
| Share of profit of investments in JV and Associates | 6,932   | 4,570   | -34%      |
| Net Profit  | 40,069  | 11,682  | -71%      |
| EPS (Baht/Share)                                    | 8.89    | 2.59    | -71%      |
| Adjusted EBITDA*                                    | 61,322  | 28,900  | -53%      |
| Adjusted EBITDA Margin (%)                          | 12%     | 7%      | -5%       |

**Remark:** \* Adjusted EBITDA refers to EBITDA excluding Stock gain/(loss), NRV and Extra item.

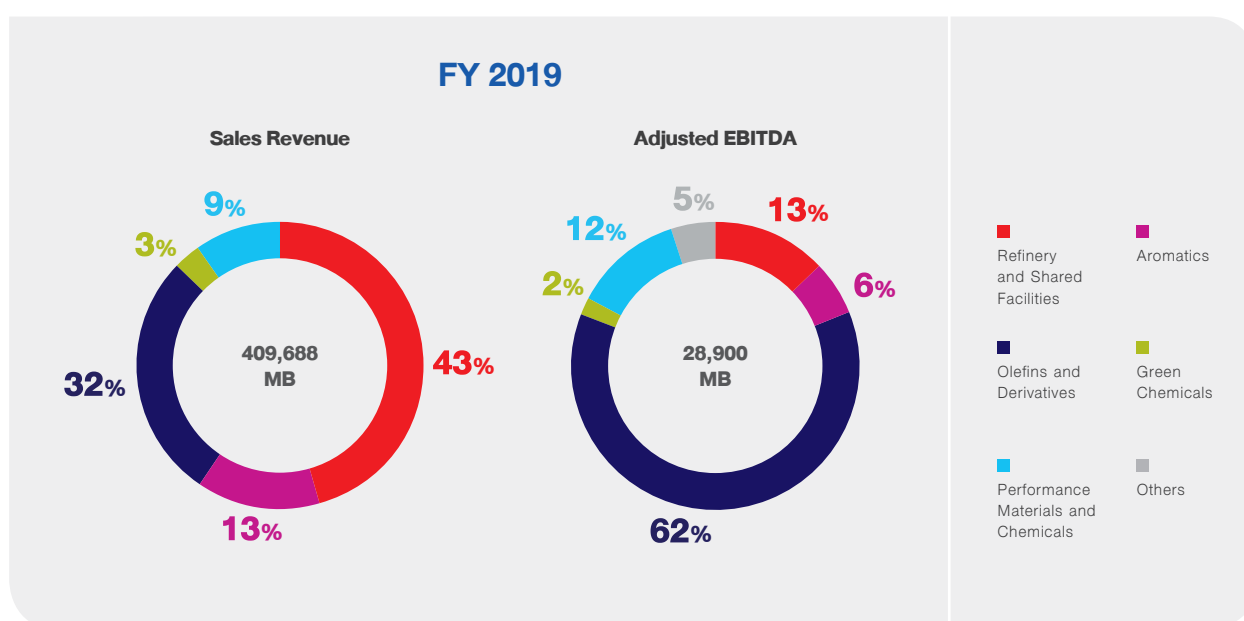
In 2019, Refinery's Market GRM declined from the previous year mainly due to the decrease of overall Refined products over Dubai crude oil spread which impacted by an uncertainty of global economic. The planned maintenance shutdown of Refinery plant led to lowering utilization rate from 102% to 87% in 2019 and this led to the declining in operating profit comparing with the previous year. Aromatics business performance was declined due to the decreasing of products over feedstock spread for both Paraxylene and Benzene, whilst Aromatics business BTX utilization rate decreased from 93% in 2018 to 88% in 2019

caused by planned maintenance shutdown to improve the production efficiency in Aromatics plant I in May and June 2019 for 49 days. Olefins and Derivatives business had an increasing in sales generated from the full year commercial operation of LLDPE II plant, whilst EO-based business sales volume also increased although the planned maintenance shutdown took place in 2019. However, Olefins and Derivatives performance declined since overall products prices declined. These contributed toward the Company's 2019 net profit of Baht 11,682 million.

## ADJUSTED EBITDA MARGIN

| % Adj. EBITDA Margin                | 2018      | 2019     |
|-------------------------------------|-----------|----------|
| Business Unit:                      |           |          |
| Refinery and Shared Facilities      | 5         | 2        |
| Aromatics                           | 7         | 3        |
| Olefins and Derivatives             | 26        | 15*      |
| Green Chemicals                     | 6         | 5        |
| Performance Materials and Chemicals | 15        | 10       |
| <b>Average</b>                      | <b>12</b> | <b>7</b> |

Remark: \* If included PTA, PET, % Adj. EBITDA Margin in 2019 is 14%.



## REFINERY & SHARED FACILITIES BUSINESS UNIT

### CRUDE PRICE & PETROLEUM PRODUCT SPREADS

| (Unit: USD per barrel)   | 2018  | 2019  | YoY % +/- |
|--------------------------|-------|-------|-----------|
| Dubai Crude Oil          | 69.42 | 63.53 | -8%       |
| Gasoline-Dubai Crude Oil | 10.53 | 8.96  | -15%      |
| Jet-Dubai Crude Oil      | 15.37 | 13.71 | -11%      |
| Diesel-Dubai Crude Oil   | 14.63 | 13.70 | -6%       |
| Fuel Oil-Dubai Crude Oil | -2.67 | -4.91 | -84%      |

The crude oil market situation in 2019 was highly fluctuated. In the beginning of 2019, the market was supported by an agreement of OPEC and its allies in December 2018 to balance the market by lowering their supply to 1.2 million barrel per day for 6 months until June 2019, the U.S. sanction on Iran and Venezuela which reduced crude oil export from those countries. The U.S. announced ending of sanctions waivers for Iran oil imports for 8 countries (China, India, Japan, South Korea, Taiwan, Turkey, Italy and Greece) since May 2, 2019 which raised the tension in the Middle East region. These factors supported crude oil market in short term and resulted in crude oil price average at 63.53 USD per barrel, 8% lower than 2018.

For 2019, the Petroleum products price and product spread over crude oil price had been fluctuated as well as crude oil price. The average Diesel over Dubai crude oil spread was 13.70 USD per barrel, decreased by 0.93 USD per barrel from previous year, due to the impact of U.S.-China trade tension and economic slowdown which led to declining in production activity. However, the preparation for the IMO implementation in January 2020 helped to support Diesel demand in the second half of 2019. The average high-sulfur fuel oil over Dubai crude oil spread was -4.91 USD per barrel, declined by 2.24 USD per barrel, which was under pressure from IMO implementation which most refineries tried to sell their high-sulfur fuel oil as much as possible before the implementation begins and the demand converts to low-sulfur fuel oil which led to increasing supply in high-sulfur fuel oil.

## GROSS REFINERY MARGIN

| (Unit: USD per barrel)      | 2018          | 2019         | YoY % +/-   |
|-----------------------------|---------------|--------------|-------------|
| Market GRM                  | 6.08          | 3.86         | -37%        |
| CDU GRM                     | 6.46          | 3.61         | -44%        |
| CRS GRM                     | 4.39          | 5.00         | 14%         |
| Hedging Gain/(Loss)         | 0.11          | 0.26         | 144%        |
| Stock Gain/(Loss) net NRV   | -1.08         | 0.34         | 132%        |
| <b>Accounting GRM</b>       | <b>5.11</b>   | <b>4.46</b>  | <b>-13%</b> |
| <b>Adjusted EBITDA (MB)</b> | <b>10,259</b> | <b>3,843</b> | <b>-63%</b> |
| <b>Adjusted EBITDA (%)</b>  | <b>5%</b>     | <b>2%</b>    | <b>-3%</b>  |
| <b>Utilization Rate</b>     | <b>102%</b>   | <b>87%</b>   | <b>-15%</b> |

For 2019, Market GRM at 3.86 USD per barrel. As for 2019, CDU utilization rate was 87%, decreased by 15% from 2018 due to the planned maintenance shutdown in Q4/2019. The Company realized Stock Loss net Reversal of NRV at 0.34 USD per barrel due to decline in crude oil price in Q3/2019. The Company

recorded net gain from Commodity Hedging of 0.26 USD per barrel. These resulted in Refinery business Accounting GRM of 4.46 USD per barrel, declined from 2018. The Adjusted EBITDA of Refinery business in 2019 was Baht 3,843 million, 63% decreased from 2018. The Adjusted EBITDA Margin was at 2%.

## AROMATICS BUSINESS UNIT

### AROMATICS PRODUCT PRICES AND SPREADS OVER CONDENSATE

| (Unit: USD per ton)          | 2018  | 2019 | YoY % +/- |
|------------------------------|-------|------|-----------|
| Condensate                   | 606   | 544  | -10%      |
| Paraxylene (TW)              | 1,067 | 901  | -16%      |
| Paraxylene (TW)-Condensate   | 461   | 357  | -23%      |
| Paraxylene (FECP)            | 1,057 | 895  | -15%      |
| Paraxylene (FECP)-Condensate | 451   | 351  | -22%      |
| Benzene (Spot Korea)         | 821   | 641  | -22%      |
| Benzene-Condensate           | 215   | 97   | -55%      |
| Naphtha-Condensate           | 8     | -21  | <-200%    |

#### PARAXYLENE

In 2019, Paraxylene (FECP) over Condensate spread declined by 22% from 2018 to the average at 351 USD per ton. Paraxylene price was under pressure from increasing of global supply by 6.4 million tons to 57.7 million tons which mainly come from China according to its self-sufficient economy policy that led to decrease import volume.

#### BENZENE

In 2019, Benzene over Condensate spread decreased by 55% to the average at 97 USD per ton. In the first half of 2019, Benzene market was under pressure from high inventory level in China and declining demand from downstream Styrene Monomer and Phenol due to planned maintenance shutdown of several plants in the region which mainly impacted to lower product spread and some producers decided to cut run or cease their operations. However, in the second half of 2019, Benzene demand picked up since Styrene Monomer producers completed their maintenances and also arbitrage window for exporters in Asia to North America helped to balance Benzene market in the region. Consequently, Benzene over Condensate spread improved in the second half of 2019.

### AROMATICS MARKET P2F

| (Unit: USD per ton)         | 2018         | 2019         | YoY % +/-   |
|-----------------------------|--------------|--------------|-------------|
| Market P2F                  | 197          | 130          | -34%        |
| Hedging Gain/(Loss)         | -6.5         | 10.5         | >200%       |
| Stock Gain/(Loss) net NRV   | -9.7         | -8.0         | 17%         |
| <b>Accounting P2F</b>       | <b>181</b>   | <b>132</b>   | <b>-27%</b> |
| <b>Adjusted EBITDA (MB)</b> | <b>6,492</b> | <b>1,721</b> | <b>-73%</b> |
| <b>Adjusted EBITDA (%)</b>  | <b>7%</b>    | <b>3%</b>    | <b>-4%</b>  |
| <b>Utilization Rate (%)</b> | <b>93%</b>   | <b>88%</b>   | <b>-5%</b>  |

In 2019, BTX utilization rate was at 88% declined from 93% in previous year due to planned maintenance shutdown of Aromatics plant I in May and June 2019 for 49 days in order to change the catalyst and improve production efficiency. In addition, Aromatics products spread significantly declined in both Paraxylene and Benzene. Paraxylene over Condensate spread dropped by 22% whilst Benzene over

Condensate spread dropped by 55% which impacted to lower Market P2F per ton BTX to 130 USD per ton. Furthermore, the Company had Stock Loss net NRV at -8.0 USD per ton and realized hedging gain at 10.5 USD per ton, resulted in the Accounting P2F of 132 USD per ton. In 2019, the Company had Adjusted EBITDA of Baht 1,721 million and Adjusted EBITDA Margin at 3%.

## OLEFINS AND DERIVATIVES BUSINESS UNIT

### PRICES AND SPREADS OF OLEFINS AND DERIVATIVES

| (Unit: USD per ton) | 2018  | 2019  | YoY<br>% +/- |
|---------------------|-------|-------|--------------|
| Naphtha (MOPJ)      | 614   | 523   | -15%         |
| Ethylene (SEA)      | 1,141 | 823   | -28%         |
| Propylene (SEA)     | 988   | 838   | -15%         |
| HDPE                | 1,330 | 991   | -25%         |
| HDPE-Naphtha        | 716   | 468   | -35%         |
| LLDPE               | 1,181 | 952   | -19%         |
| LLDPE-Naphtha       | 567   | 429   | -24%         |
| LDPE                | 1,207 | 1,019 | -16%         |
| LDPE-Naphtha        | 593   | 496   | -16%         |
| PP                  | 1,269 | 1,101 | -13%         |
| PP-Naphtha          | 655   | 578   | -12%         |
| MEG (ACP)           | 1,108 | 754   | -32%         |
| MEG-0.65 Ethylene   | 367   | 219   | -40%         |

As for the situation in 2019, Polyethylene market continued its fluctuation from 2018 which U.S.-China trade tension affected to the declining in Polyethylene price due to market buyers reacted to market condition by slowing down their purchasing, and the anticipation of the affect from new supply in the market. The average

price of HDPE, LLDPE, and LDPE in 2019 decreased to 991 USD per ton, 952 USD per ton, and 1,019 USD per ton respectively. MEG (ACP) was also pressured by similar factors as the Polyethylene market which led to lower product price by 32%.

## ADJUSTED EBITDA OF OLEFINS AND DERIVATIVES

| (Unit: Million Baht)          | 2018   | 2019   | YoY<br>% +/- |
|-------------------------------|--------|--------|--------------|
| Adjusted EBITDA               | 35,353 | 17,800 | -50%         |
| Adjusted EBITDA (%)           | 26%    | 15%*   | -11%         |
| Utilization Rate Olefins (%)  | 101%   | 102%   | 1%           |
| Utilization Rate Polymers (%) | 100%   | 102%   | 2%           |

**Remark:** \* If included PTA, PET, % Adj. EBITDA Margin in 2019 is 14%.

For the situation in 2019, Olefins business utilization rate improved as well as Polymers utilization rate, compared to the previous year, mainly due to less planned maintenance shutdown than in 2018. Olefins businesses utilization rate was at 102% and Polymers utilization rate was at 102% including the full year production of LLDPE II Plant which led to increasing polymers sales volume. In term of the price situation, overall products prices were under pressure from

lower price from the previous year which affected by global economic slowdown, uncertainty of U.S.-China trade tension, and the new supply in the market. These resulted in Adjusted EBITDA of Baht 17,800 million and Adjusted EBITDA margin of 15%. In term of feedstock volume in 2019, the portion of feedstock used of Gas and Naphtha were 88% and 12% respectively, equal to the previous year.

## ADJUSTED EBITDA BY BUSINESS UNIT

| Adjusted EBITDA (Million Baht)      | 2018          | 2019          | YoY<br>% +/- |
|-------------------------------------|---------------|---------------|--------------|
| Business Unit:                      |               |               |              |
| Refinery and Shared Facilities      | 10,259        | 3,843         | -63%         |
| Aromatics                           | 6,492         | 1,721         | -73%         |
| Olefins and Derivatives             | 35,353        | 17,800        | -50%         |
| Green Chemicals                     | 860           | 632           | -27%         |
| Performance Materials and Chemicals | 7,010         | 3,554         | -49%         |
| Services and Others                 | 1,347         | 1,351         | 0%           |
| <b>Adjusted EBITDA* (MB)</b>        | <b>61,322</b> | <b>28,900</b> | <b>-53%</b>  |

**Remark:** \* Adjusted EBITDA refers to EBITDA excluding Stock gain/(loss), NRV and Extra item.

## OPERATING PERFORMANCE

| Unit: Million Baht                    |                                      | 2018           | 2019          | YoY<br>% + /(-) |
|---------------------------------------|--------------------------------------|----------------|---------------|-----------------|
| <b>Sales Revenue</b>                  |                                      | 515,449        | 409,688       | -21%            |
| Feedstock Cost                        |                                      | (400,501)      | (325,677)     | -19%            |
| <b>Product to Feed Margin</b>         |                                      | <b>114,948</b> | <b>84,011</b> | <b>-27%</b>     |
| 1                                     | Variable Cost                        | (27,920)       | (29,224)      | 5%              |
| 2                                     | Fixed OH                             | (16,478)       | (17,479)      | 6%              |
| 3                                     | Stock Gain/(Loss) and NRV            | (3,059)        | (114)         | 96%             |
| 4                                     | Gain/(Loss) on Commodity Hedging     | (272)          | 1,248         | >200%           |
| 5                                     | Other Revenue                        | 4,686          | 4,431         | -5%             |
| 6                                     | SG&A Expenses                        | (13,642)       | (15,071)      | 10%             |
| <b>EBITDA</b>                         |                                      | <b>58,263</b>  | <b>27,802</b> | <b>-52%</b>     |
| 7                                     | Depreciation & Amortization          | (19,278)       | (19,513)      | 1%              |
| 8                                     | Loss from GGC's inventory**          | (2,004)        | 232           | -112%           |
| 9                                     | Gain on Bargain Purchase             | 1,355          | 31            | -98%            |
| <b>EBIT</b>                           |                                      | <b>38,336</b>  | <b>8,552</b>  | <b>-78%</b>     |
| 10                                    | Net Financial Expense                | (2,418)        | (2,131)       | -12%            |
| 11                                    | FX Gain/(Loss)                       | 407            | 2,007         | >200%           |
| 12                                    | Share of Gain/(Loss) from Investment | 6,932          | 4,570         | -34%            |
| 13                                    | Corporate Income Tax                 | (2,986)        | (649)         | -78%            |
| 14                                    | <b>Net Profit after Tax</b>          | <b>40,271</b>  | <b>12,349</b> | <b>-69%</b>     |
| <b>Profit/(Loss) Attributable to:</b> |                                      |                |               |                 |
| 15                                    | Non-controlling Interests            | 202            | 667           | >200%           |
| 16                                    | <b>Owners of the Company</b>         | <b>40,069</b>  | <b>11,682</b> | <b>-71%</b>     |
| 17                                    | <b>Adjusted EBITDA*</b>              | <b>61,322</b>  | <b>28,900</b> | <b>-53%</b>     |

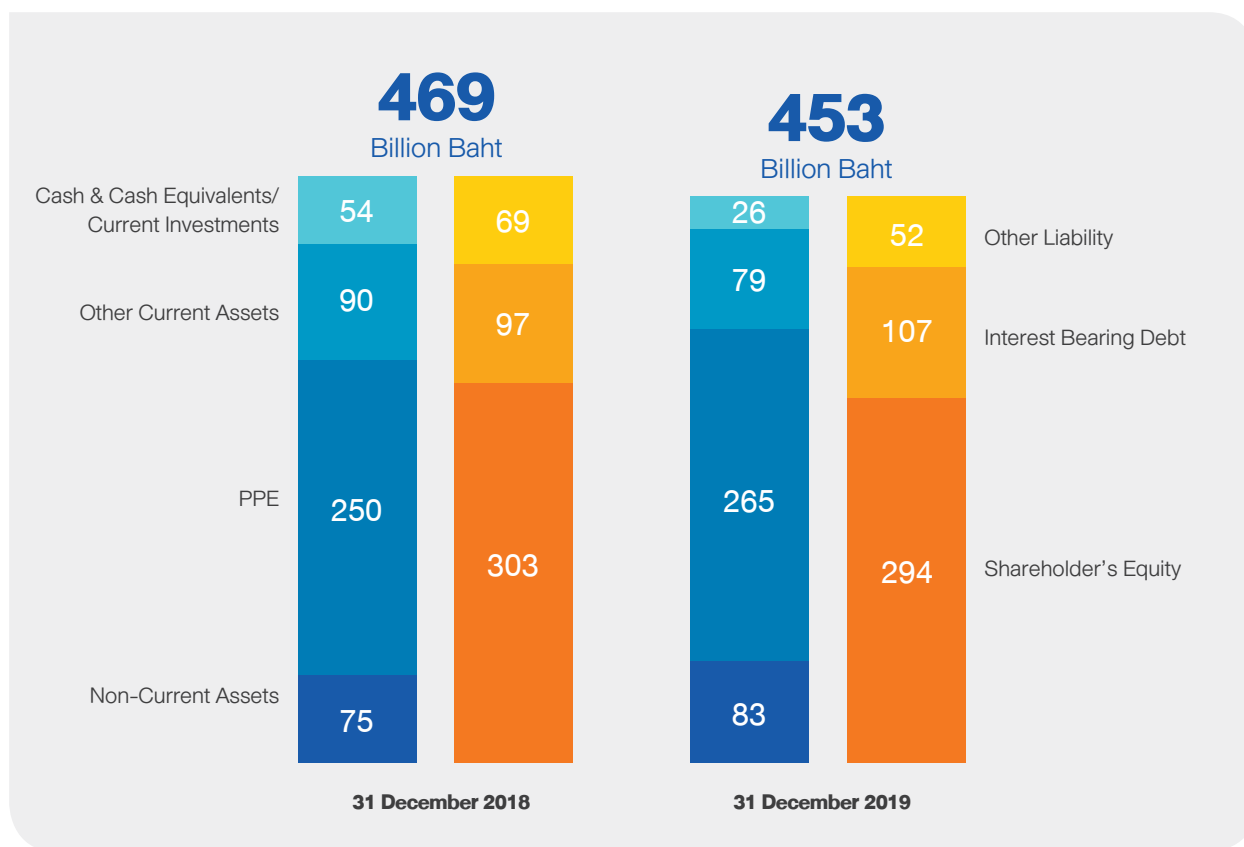
**Remark:**

\* Adjusted EBITDA refers to EBITDA excluding Stock gain/(loss), NRV and Extra item.

\*\* In 2018, effect from Inventory Loss per shareholding of 72.29% was 1,261 million baht.

## STATEMENT OF FINANCIAL POSITION

Unit: Billion Baht



As of December 31, 2019, the company had Total asset of Baht 452,514 million, decreased by Baht 16,741 million from December 31, 2018. Total Current asset declined by Baht 39,816 million mainly due to decreasing of Cash and Cash Equivalents and Short-term investment by Baht 28,002 million, decreasing of Account receivables of Baht 7,834 million, decreasing of inventory by Baht 3,113 million, and decreasing of Other current assets by Baht 867 million. However, the company had higher Non-current assets by Baht 23,075 million which derived from increasing in Property, plant and equipment led by purchasing and construction of property within the period net amount of Baht 28,470 million, whilst other non-current assets increased by Baht 8,842 million as a result of increasing of Investment in Associate company, GPSC. For this period, the Company had total Shareholders' Equity of Baht 293,595 million, decreased by Baht 9,887 million from December 31, 2018 due to dividend payment during the year and the company recognized the difference arising from the change in the ownership interest in investment according to GPSC Tender offer which made payment for shares of GLOW.

Cash and Cash Equivalents and Current Investments decreased by Baht 28,002 million from the end of last year. The company had cash flow from operation of Baht 30,175 million while cash flow used in investment activities of Baht 41,780 million which mainly invested in the purchasing of property, plant and equipment and intangible assets on the projects such as Olefins Reconfiguration Project, Propylene Oxide by GC Oxirane Co., Ltd. and Polyols & PU System by GC Polyols Co., Ltd. and Cash payment invested in equity injection in GPSC of Baht 16,819 million. However, there was cash received from the sale of available-for-sale securities of Baht 10,369 million, the sale of short-term investments of Baht 4,246 million, from selling of private fund and in-house investment, and dividend income of Baht 2,248 million. The Company's cash flow used in financing activities of Baht 6,461 million mainly used for dividend payment of Baht 16,336 million, net Loan repayment of Baht 3,901 million, interest payment to financial institutions and hire-purchase contracts of Baht 3,094 million, and cash payment for treasury stock of Baht 1,188 million. However, the company had cash received from issuing

corporate bond net corporate bond redemption of 18,058 million, therefore, as of December 31, 2019 the company had total Cash and Cash Equivalents of Baht 18,840 million, including short term investment of Baht 6,720 million and long-term investment in private fund and in-house of Baht 2,337 million, the company had

totaling cash and cash equivalent and investment of Baht 27,897 million, decreased by Baht 32,468 million from the end of last year. Additionally, the Company had net interest-bearing debt to equity at 0.28 times and Net interest-bearing debt to EBITDA at 2.93 times.

## KEY FINANCIAL RATIOS

| Financial Ratios                |         | 2017   | 2018   | 2019   |
|---------------------------------|---------|--------|--------|--------|
| <b>Liquidity Ratios:</b>        |         |        |        |        |
| Current Ratio                   | (Times) | 2.33   | 1.95   | 1.97   |
| Quick Ratio                     | (Times) | 1.60   | 1.29   | 1.13   |
| Operating Cash Flow Ratio       | (Times) | 1.08   | 0.80   | 0.48   |
| Account Receivables Turnover    | (Times) | 10.98  | 12.31  | 10.75  |
| Account Receivable Days         | (Days)  | 33.34  | 29.74  | 33.96  |
| Inventory Turnover              | (Times) | 10.20  | 11.93  | 10.33  |
| Days Sales in Inventory         | (Days)  | 35.90  | 30.69  | 35.33  |
| Account Payables Turnover       | (Times) | 13.03  | 14.01  | 13.02  |
| Account Payables Days           | (Days)  | 28.02  | 26.05  | 28.03  |
| Cash Cycle                      | (Days)  | 41.22  | 34.37  | 41.26  |
| <b>Profitability Ratios:</b>    |         |        |        |        |
| Gross Margin Ratio              | (%)     | 11.16  | 10.78  | 4.65   |
| EBIT/Sales Revenue              | (%)     | 11.43  | 9.09   | 3.93   |
| Cashflow from Operation/EBIT    | (%)     | 124.11 | 114.47 | 187.21 |
| Net Profits to Sales Revenue    | (%)     | 9.00   | 7.77   | 2.85   |
| Return on Equity                | (%)     | 15.09  | 14.04  | 4.02   |
| <b>Efficiency Ratios:</b>       |         |        |        |        |
| Return on Total Assets          | (%)     | 11.77  | 10.36  | 3.50   |
| Return on Fixed Assets          | (%)     | 26.77  | 25.54  | 12.12  |
| Total Asset Turnover            | (Times) | 1.03   | 1.14   | 0.89   |
| <b>Leverage Ratios:</b>         |         |        |        |        |
| Interest Bearing Debt to Equity | (Times) | 0.35   | 0.32   | 0.36   |
| Interest Coverage Ratio         | (Times) | 16.67  | 16.39  | 10.17  |
| Dividend Payout Ratio           | (%)     | 49     | 48     | 77     |

## PROJECT PROGRESS IN 2019

In 2019, the Company had an ongoing investments and under study as followed:

### OLEFINS RECONFIGURATION PROJECT

The Company had approved an investment for the new Olefins plant (Olefins Reconfiguration Project) with the use of Naphtha and Liquefied Petroleum Gas (LPG) as major feedstocks. The plant will consists of Ethylene capacity of 500,000 tons per year and Propylene capacity of 250,000 tons per year. This project will increase the Company's total Ethylene capacity from 2,988,000 to 3,738,000 tons per year. The plant is expected to start commercial operation within year 2020. The total investment is USD 985 million or approximately Baht 36,000 million. The project has been on progressed for 85% (as of December 2019).

### PROPYLENE OXIDE (PO) AND POLYOLS & PU SYSTEM PROJECT

The purpose of PO/Polyols Project is to expand toward downstream business of Polyurethane; a high value product. The Company has set up a wholly-owned, GC Oxirane Company Limited, to produce PO with the capacity of 200,000 tons per year and is expected to start commercial operation in 2020. The Company had also set up a joint venture, GC Polyols Company Limited, with shareholdings of GC 82.1%, with Polyols capacity of 130,000 tons per year and PU System products with the capacity of 20,000 tons per year. PO and Polyols Projects have been on progressed for 85% and 85% respectively (as of December 2019).

## ESTABLISHMENT OF JOINT VENTURE COMPANY "ENVICCO LIMITED" TO MANUFACTURE HIGH-QUALITY RECYCLED PLASTICS

The Company and ALPLA, a world-class manufacturer of high-quality recycled plastic resins, have signed a cooperation agreement to establish a Joint venture company to be called ENVICCO Limited at Asia Industrial Estate in Rayong province. The joint venture company was established with the objectives to be Thailand's first manufacturer of high-quality recycled plastic resins, namely rPET and rHDPE, which will be able to create value added to used plastics. The Joint venture company was set up on February 3, 2020.

## MARKET AND BUSINESS OUTLOOK IN 2020

For the global oil outlook in 2020, average Dubai crude oil price is expected to be 58-62 USD per barrel. The International Energy Agency (IEA) had estimated the crude oil demand (as of December 2019) in 2020 at 101.5 million barrel per day, increased by 1.2 million barrel per day. However, there are uncertainties from the prolonged US-China trade tension, which will impact the global economic condition, the economic slowdown in European Region in both manufacturing and service sector, the Britain's leaving the European Union (Brexit), the cooperation of OPEC and its allies to lower their crude oil production, and the expected crude oil export from the US which has continuously increased since Q4/2019. These factors can put pressure on the crude oil price.

For Petroleum product, the Company anticipates that products price and products spread will be supported from the International Marine Organization (IMO) implementation to control sulfur level in Fuel oil used in marine vessel which began on January 1, 2020. This led to increasing demand for Diesel and low-sulfur fuel oil (LSFO) as a fuel for vessel and results to expected Diesel over Dubai crude oil spread to be 14-15 USD per barrel while LSFO over Dubai crude oil spread to be 20-21 USD per barrel amid lower demand for high-sulfur fuel oil (HSFO). The HSFO over Dubai crude oil spread is expected to be -11 to -10 USD per barrel, whilst Gasoline will be under pressure from high inventory level and increasing production from high utilization rate of Refineries in North America region. The expected Gasoline over Dubai crude oil spread is 10-11 USD per barrel. As for the company's Refinery utilization rate, it will be operated around 101%.

For Aromatics product, Paraxylene over Naphtha spread, in 2020, is expected to be 250-300 USD per ton which steady from the previous year. Despite the new supply from China, the demand from Fiber and Filaments industries, Purified Terephthalic Acid (PTA), and PET Bottle Resin are expected to potentially grow supported by new capacities in these downstream products and the cut run from high cost producers. Benzene over Naphtha spread is expected to be 150-175 USD per ton which steady from the previous year since Benzene market will be supported by demand from new capacities of downstream products such as Styrene Monomer and Phenol. In 2020, the Company has a planned maintenance shutdown of Aromatics plant II in Q2/2020 in order to improve production efficiency. The company expects that utilization rate of 2020 will be 90%.

The outlook for Olefins and Derivatives product is expected to maintain from the previous year, even new supply is expected to be higher in 2020. However, from the situation in Q4/2019, Polyethylene price was at the lowest point in the last ten years and it is expected that high cost producers will reduce their operating rate. However, an uncertainty from a prolonged U.S.-China trade tension will continue, even some positive signs have been emerged since both parties have reached and already signed Phase 1 agreement in January 2020. The average Polyethylene price in 2020 is expected to be 910-1,030 USD per ton. For MEG market, MEG price is expected to be remained from the previous year. MEG supply is expected to increase from new capacities in the U.S. and China, but MEG will be supported by downstream demand especially Textile industry and Packaging industry which has potential to grow. The company expects that the average MEG (ASP) will be 550-580 USD per ton. In 2020, Olefins plants utilization rate will be around 98% since there are planned maintenance shutdown in Q1/2020 whilst Polymers plants utilization rate will be around 102%.



# RISK MANAGEMENT AND RISK FACTORS

## RISK MANAGEMENT

PTT Global Chemical Public Company Limited (GC) places great importance on continuously improving our risk management to ensure an integrated process covering all our operations. Information technology has been used to increase organizational efficiency. Our policies are geared towards ensuring that strategic growth is managed using effective risk management and that we can deal with current and future disruptive events while providing a framework within our risk appetite to seek potential business opportunities that support sustainable growth. We adhere to COSO (The Committee of Sponsoring Organizations of the Treadway Commission) or ERM COSO (2017) and ISO (International Organization for Standardization) or ISO 31000:2018 standards as well as the Corporate Governance Code and anti-corruption principles. We have also been certified as a member of the Private Sector Collective Action Coalition against Corruption (CAC) – Thailand’s private-sector movement against corruption. We review our own compliance, with results presented to the Audit Committee, the Corporate Governance Committee, and the Board of Directors to ensure that we have processes in place to combat corruption, including adequate internal controls.

In 2019 GC was 1<sup>st</sup> ranked in the Dow Jones Sustainability Indices and stayed in the Top 10 global chemical companies for the seventh consecutive year. We also got the first rank in Risk and Crisis Management section in 2019. This achievement reflects our standards of risk and crisis management on a par with international standards.

## RISK MANAGEMENT STRUCTURE

Our risk management is organized into three levels: corporate, business units, and operations. At the corporate level, the Board appointed Risk Management Committee (RMC) is responsible for defining the direction of risk management guided by the risk appetite, risk policy, and five risk management frameworks: corporate, foreign exchange, price-and-

spread, subsidiaries, and investment. The Enterprise Risk Management Committee (ERMC) is comprised of executive officers from each function responsible for regularly monitoring risk management progress.

For specific business risk, GC defines risk management for business units and functions or for specific committees as explained below.

- **THE VALUE CHAIN MANAGEMENT (VCM) COMMITTEE** is responsible for closely monitoring and managing pricing, foreign exchange, and supply chain risk weekly using a risk management framework approved by the Risk Management Committee.
- **GC GROUP’S SUSTAINABILITY DEVELOPMENT COMMITTEE (SDC)** is responsible for overall monitoring and follow-up on sustainable development issues as well as ensuring an appropriate direction for managing our long-term sustainability risk.
- **THE INVESTMENT COMMITTEE (IC)** is responsible for governance and considers investment projects aligned with our strategy as well as ensuring effective risk assessment and mitigation for maximum investment efficiency and optimal benefits.
- **OTHER COMMITTEES** include the GC Operational Excellence Committee; the Safety, Health, and Environmental Governance Committee; the Digital and Technology Governance Committee; and the Water Management Task force.

For the business units’ level, the heads of business units apply the corporate risk direction to their units. At the operations level, results of the Control Self-Assessment (CSA) and Operational Risk Management (ORM) are applied to appropriately manage process risk. As for GC’s subsidiaries, there are the GC Way of Conduct harmonizes governs the risk management direction.

## RISK MANAGEMENT TOOLS

GC has studied and adopted several risk management tools. Risk has been assessed and prioritized on a risk map, with progress followed up using mitigation plans

and key risk indicators. The Monte Carlo simulation technique has also been employed to model impacts to our operating results using value at risk (VaR) as a metric. Furthermore, we have identified emerging risk using an early warning system (EWS) to increase preparedness, resulting in a proactive approach to risk mitigation.

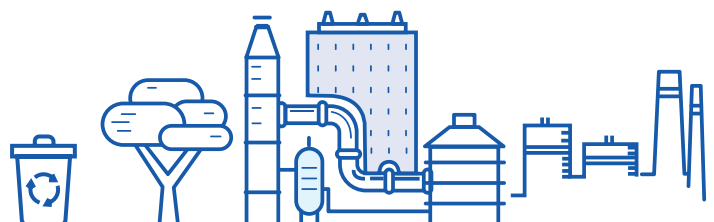
### RISK MANAGEMENT CULTURE

We have promoted a risk management culture covering governance, risk management, and internal control and compliance throughout GC to help support stable and sustainable growth. The Board and executives decide risk management policy, objectives, and frameworks used as guidelines and continue to monitor progress at both the management and operation levels. Moreover, we review roles and responsibilities related to risk management, communicating the results to strengthen risk management knowledge for the entire organization.

In 2019, we organized a workshop to foster awareness for the Management, developed newsletters, conducted training sessions, and developed an e-learning platform at the staff level. We have a development plan that fosters the right mindset in all our employees and ingrains it in our work culture. The plan includes extending these values to our subsidiaries in the future.

### SUSTAINABILITY AND RISK MANAGEMENT

GC always give precedence to sustainability issue by integrating such matter into our business started with defining our strategies until risk assessment. We appoint risk factors related with sustainability, for example, climate change and water management and continuous increasing environmental concerns (as detail demonstrated in the next section). Besides, we intend to add sustainability, eco-technology and reduction of GHG emission viewpoint into our future investments (as elaborated in investment risk). In 2019, we dedicated new function named Sustainability and Corporate Branding, and also revised sustainability committee to manage all related sustainability issue. These present our intention to manage risk together with sustainability to build confidence for our stakeholders.



## RISK FACTORS

We have analyzed both internal and external business environments, along with relevant economic societal, political, technological, industrial, and competitor trends to define our corporate risk categorized into the three groups below.

### CURRENT BUSINESS-RELATED RISK FACTORS

| Corporate Risk Factors   | Important Mitigation Measures   |
|--|---|
| <p><b>Operational and Safety Risk</b></p> <p>We strive to maintain high operational standards. To this end, we place the utmost importance on managing our operation and safety risk to ensure that our production processes are both safe and reliable. Our Operational Excellence Management System (OEMS) and Process Safety Management (PSM) are applied continuously: The aim is world-class process safety management.</p> | <p>The following are the measures that GC continuously applied to maintain our operation reliable and safety.</p> <ul style="list-style-type: none"><li>• Collaborate with PTT Group experts to assess OEMS performance and effectiveness. Also, improve reliability by enhancing technical standards and maintenance to maintain stable operations within the first-quartile level.</li><li>• Cooperate with consultants to strengthen our Process Safety Management, raising it to an international standard during 2017-2022. There are focus on promoting a company-wide culture where employees pride themselves on applying safety to all aspects of work with discipline, with a good example set by executives and the Management downwards.</li><li>• Assess operation of utility suppliers and together define risk and mitigations. We also continuously follow up such plan to ensure that our suppliers focus on their maintenance efficiently and reliable operate with safety. This directly consequence to our reliability, minimize risk of emergency shutdown and achieve GC's target.</li><li>• With knowledge gained from consultant development experts and capable employees, nurture experts, develop company personnel, and share such knowledge with all business units and GC Group.</li><li>• Apply the Business Continuity Management System (BCMS) and develop an Incident Management System (IMS) to manage emergency and crisis events which could interrupt our business to lessen impacts from these events and reduce the recovery period. Our Business Continuity Plan is rehearsed regularly.</li><li>• GC Group has the necessary insurance to lessen impacts resulting from operational failures.</li></ul> |

## Corporate Risk Factors

## Important Mitigation Measures

### Price Volatility Risk

The economic slowdown from the ongoing U.S.-China trade war, OPEC production cuts, and new supply capacity have led to price volatility risk and deviate from our business plan: a mitigation plan is being prepared to handle this situation.

The following are the measures that GC has put forth to closely and continuously mitigate its price volatility risk.

- The risk of price spread, and oil inventory have been managed by applied derivatives and forward sales-and-purchase agreements under a policy and framework approved by the Risk Management Committee and closely controlled and monitored by the Value Chain Management Committee.
- Closely monitor market situation, feedstock, and product prices to adjust sales and production plans for our value chain facing rapidly changing situations.

### Sales & Marketing Risk

Our performance results also depend on our ability to maintain sales revenues—especially with volatile business conditions, demand-supply imbalances, trade wars, and geopolitics as factors contributing to market instability.

We always proceed sale and marketing mitigations as follows.

- Closely monitor market situation to accordingly adjust sales and production plan.
- Diversify product portfolio and define sales portfolio including expanding to emerging markets such as the CLMV countries.
- Enter the end-use market and acquire new customers interested in developing high-performance products distinguished by their technology and innovation to meet the needs of the end-use consumer. To this end, we have created a Customer Solution Center to build relationships with partners and customers on product development.
- Develop and improve an end-to-end sales and marketing process in keeping with the changing of business context, consumer behavior, and sales channels.

### Joint-Venture Partnership Management Risk

If we grow our business by finding partners with expertise and experience in the target business, we will manage business partners' expectations to achieve the joint-venture target objectives.

GC continuously applies the below mitigation to manage our Joint-Venture Partnership as below.

- Form a joint-venture management team to collaborate with our business partners at all levels to ensure that the joint-venture partnership is aligned with its own targets and our strategy.
- Pursue synergistic opportunities and ways to expand the business with joint-venture partners to foster good working relationships by growing together.
- Implement the GC Way of Conduct (WOC) and continuously monitor. In 2019, we did preliminary assessment to evaluate how our subsidiaries applied the GC WOC and use such assessment to improve the operation. We also communicate the GC WOC to all related parties to raise awareness and understanding.

## FUTURE BUSINESS-RELATED RISK FACTORS

Successfully executing established strategies leads to achieving long-term goals, but this may be coupled with volatility and rapid changes in the business environment. Thus, we have managed risk factors related to our future business operations.

| Corporate Risk Factors  | Important Mitigation Measures   |
|---|---|
| <p><b>Innovation Risk</b></p> <p>We focus on innovation to develop new products with increased value to meet market demand, thus developing our capability to carry out research with commercially feasible results is another important factor for our future sustainable growth and maintain our competitiveness.</p> | <p>The following are what GC apply to continuously manage the risk.</p> <ul style="list-style-type: none"><li>• Pursue innovation opportunities through Corporate Venture Capital and Technology Scouting to relentlessly enhance technology, capability, and knowledge of our personnel.</li><li>• Assess and manage investment risk associated with innovation, including monitoring the progress of invested projects regularly.</li><li>• Recruit external experts to quickly strengthen innovation capability and related technology to serve targeted customers' expectations.</li></ul> <p>Also, we additionally mitigate such risk as below.</p> <ul style="list-style-type: none"><li>• Develop market and cooperate with customers to expand business opportunities especially both domestic and international brand owners to support long-term sustainability growth for downstream business focusing on high-value products.</li><li>• Seek technology to further expand into High Value Business (HVB). It also includes to seek opportunities for HVB investment matched with the End-Use market requirements.</li><li>• Develop digital infrastructure to link all important information together to support and increase innovation performance.</li></ul> |

## Corporate Risk Factors

### Investment Risk

Investments that support our long-term growth give rise to risk requiring close monitoring. This includes selecting the right technologies to invest in and managing resources to achieve our long-term expansion goals.

## Important Mitigation Measures

Here are our measures to manage investment risks continuously.

- Implement a stage-gate process to govern investment decisions from the opportunity-seeking stage until investment approval known as Corporate Investment Process: CIM. For projects requiring high capital investment, the Risk Management Committee considers the adequacy of risk assessment performed and the mitigation measures chosen.
- Systematically monitor to ensure investment project progress as planned.
- Perform a lookback analysis to monitor completed projects and use the lessons learned to improve the investment process and increase the success of future investments.
- Prepare investment capital and maintain liquidity as financial policy to support future investment.
- Develop and include sustainability factors covering ecofriendly technology and greenhouse gas (GHG) emissions into investment criteria.

### Climate Change Risk

Climate change remains a recurring issue on the international stage, resulting in risk including severe natural disasters and drought. Governments have therefore issued policies, regulations, and laws in response to COP21 with continued emphasis on reducing greenhouse gas emissions. Altering our current processes to accommodate these actions may inevitably increase production costs, while affecting competitiveness and business sustainability.

We continuously manage our GHG emission and water management as following mitigations.

- Establish a climate change team to monitor climate-related activities such as promoting more efficient energy usage, supporting the use of renewable energy, applying eco-design measures for product development, and closely monitoring laws and regulations related to climate change and GHG emissions to ensure our readiness to comply. Thus, we should be able to reduce greenhouse gas emissions as targeted which is aligned with governmental policy and the COP21 Paris Agreement.
- Become involved in the Thailand Voluntary Emission Trading Scheme (Thailand V-ETS) to prepare for the buying and selling of permits for greenhouse gas (GHG) emission allowances.
- Increase the portion of downstream and performance products that release less GHG emissions than the upstream business.

Moreover, the additional mitigations as below.

- Develop a policy and framework to support investment in renewable energy projects and investment to reduce GHG emissions as part of GHG emission mitigation.
- Apply carbon pricing as part of our investment criteria to limit GHG emission in GC's future projects.

## Corporate Risk Factors

### People and Organization Risk

Our strategic growth plans are always supported by developing our human resources. For effective operation and long-term growth of our business, both in Thailand and overseas, we need to continue developing our employees' knowledge and skills.

## Important Mitigation Measures

GC always give priority to manage our people as followed.

- Develop managers at all levels as defined in the people portfolio and continuously develop high-potential employees (Top talent) to support our long-term growth plan.
- Prepare succession plans in time for retiring executives and company growth.
- Continuously strengthen the organizational culture by driving GC SPIRIT through the 4 Core Behaviors.
- Apply technology to enhance our learning program focusing on self-learners.
- Improve performance management to support future sustainable growth.

(More detail in the section "People Management and Development Policy")

### Policy & Regulatory Change Risk

We strictly adhere to all laws, regulations, and policies imposed by the government. Changes in these laws and regulations can impact our operations or investment opportunities, thus we monitor these changes regularly and adjust our operations accordingly.

We prepare ourselves for managing the chain in policy and regulatory by following mitigations.

- A laws-and-regulations working team closely monitors important news and information related to proposed changes in regulations and, when enforced, communicates these to related functions to properly comply and apply these policies and regulations to assess the economic feasibility of our investments.



## EMERGING RISK FACTORS

With volatility and unexpected changes in business conditions, we have monitored emerging risk to ensure that proactive mitigation measures are in place before they impact our business.

| Corporate Risk Factors  | Important Mitigation Measures   |
|---|---|
| <p><b>Continuous Increasing Environmental Concerns</b></p> <p>Environmental concerns are becoming more serious both domestically and globally. Consumers with increased awareness of long-term environmental impacts have become more empowered. Their significant behavioral changes might impact the future of our business in several ways:</p> <ul style="list-style-type: none"> <li>• The Thai government announced the plastic waste management plan 2018-2030 with a target of replacing single-use plastics with environmentally sustainable products or recyclable plastics by 2022.</li> <li>• Consumers value ecofriendly products and the trend to reduce usage of single-use plastics, with producers needing to change their products, leading to decreased plastics demand in the next 2-3 years.</li> <li>• Awareness of the importance of the circular economy: Our image and reputation of our products bearing on the environment.</li> <li>• Place importance and active on PM 2.5 pollution problem.</li> <li>• Image and reputation of company and our product in term of environmental impact.</li> </ul> | <p>GC has implemented the following mitigations preparing for handle with continuous increasing environmental concerns trend.</p> <ul style="list-style-type: none"> <li>• Reduce business risk by diversifying our portfolio from single-use plastics to durable or semi-durable plastics.</li> <li>• Develop bioplastics and biodegradable plastics business certified by both national and international standards as an ecofriendly alternative solution for consumers.</li> <li>• Implement integrated circular economy concept by cooperating with related parties along the value chain to develop product served with consumer's expectations and raise up awareness to people for the use of petrochemical products as well as preserving the environment together through the projects such as the Upcycling the Oceans; the Thailand/Upcycling Plastic Waste Project; the ThinkCycle Bank Project and the Public Private Partnership (PPP Plastic).</li> <li>• Support cooperation with communities and agencies in sorting plastic waste and using it as raw material for plastic recycling prototype plants, to be operated with experienced business partners for future recycling business.</li> </ul> <p>Besides, we intend to implement more measures as below.</p> <ul style="list-style-type: none"> <li>• Promote biodegradable plastics to replace single-use plastics for non-recyclable contaminated products by inventing the GC Compostable label to illustrate GC's commitment to applying innovation to take care of the environment. We restrict the use of such label to our operators as a way of adding value to products and containers.</li> <li>• Associate with Our Khung BangKachao Project to develop end-to-end waste management system, setup learning resources and value added from the waste.</li> <li>• Promote circular economy concept and</li> <li>• Inspire new ideas to optimal resources by Circular Living Symposium 2019: Upcycling Our Planet.</li> </ul> |

| Corporate Risk Factors   | Important Mitigation Measures  |
|--|--|
|  | <ul style="list-style-type: none"> <li>GC and our subsidiaries intend to support our product comply with Ministry of Energy policy about PM 2.5 pollution reduction actions. Presently, our refinery plant can produce diesel under EURO 5 standard and our subsidiary, Global Green Chemicals Company Limited, can produce Methyl Ester which is a part of diesel type B10 and B20.</li> <li>Support corporation with related parties to sort plastic waste correctly and recycle them as concept of Circular Economy</li> </ul>  |
| <p><b>Digital Technology Transformation: Business Impact of Technological Advances</b></p> <p>The rapid development of technology and digital technology plays a key role in changing market, product development as well as innovation. This means that every business must increasingly make adjustments to take advantage of new opportunities:</p> <ul style="list-style-type: none"> <li>For petrochemicals, crude oil-to-chemicals (COTC) refers to transformative technology converting crude to higher-value petrochemicals on a scale that would disrupt our business.</li> <li>E-Mobility development of electronic vehicles and batteries might replace the internal combustion engine.</li> <li>Artificial intelligence (AI), robotics, data analytics, and smart factories will disrupt various businesses.</li> <li>Technology infrastructure development and digitalization present the challenge of how to develop our people's capability to cope with these technological advances.</li> </ul> | <p>We conduct the following measures to manage impact arising from technological advances.</p> <ul style="list-style-type: none"> <li>Pursue innovation extension opportunities by open innovation and Corporate Venture Capital (CVC) as elaborated in innovation risk.</li> <li>Follow up and study technological solutions to improve our processes, enhance our competitiveness, and create more value from our products to maintain our competitiveness.</li> <li>Establish a digital technology transformation function to manage digitalization and maintain our competitiveness by focusing on three main perspectives: <ul style="list-style-type: none"> <li>(1) Business Perspective by using digital technology to maintain our competitive advantage and meet stakeholders' expectations</li> <li>(2) Technology Perspective by developing IT and data architecture to more effectively manage cyber threats, and</li> <li>(3) People Perspective by enhancing employees' capabilities aligned with the technological and digital technology transformation.</li> </ul> </li> </ul> |

## Corporate Risk Factors

### Cyber Threats

Increased dependence on technology leads to increased risk of cyber threats to our production processes and all our operating platforms that rely on Internet connections. Theft of important information or production process interruptions would affect our reliability, credibility, and reputation.

## Important Mitigation Measures

We seriously and continuously watch out cyber threats through key mitigations are as follows.

- Monitor and be alert for new cybersecurity threats at both plants and offices. Also, perform penetration tests and vulnerability assessments regularly to be proactive in planning preventive mitigation measures for possible attacks.
- Carry out cybersecurity drills and disaster recovery tests regularly to manage and lessen the impacts should these events occur so as to ensure business continuity.
- Implement an information security management system and asset security practices in accordance with cyber-related international standard.
- Continuously foster cybersecurity awareness, for example, how to defend against cyber threats and IT laws related to employees. The company also regularly performs phishing tests so that employees may exercise caution when using IT communication platforms.

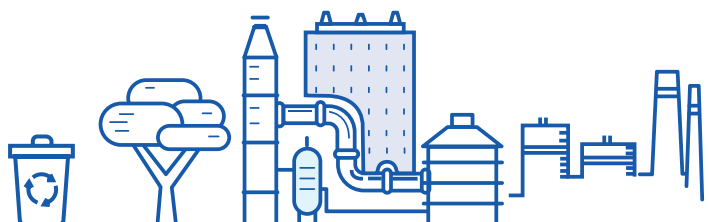
### Water Crisis

Climate change is one of the factors could have an affect on water level changing in various area including Thailand. It is possible to turn into water crisis which affect to either drought or declining water quality and interrupt our production and business.

We implement following mitigations to handle water situation which might impact to our operation and business.

- Continuously monitor and analyze water level in Rayong and nearby area to assess situation and risk which possibly to occur.
- Water management using control measures such as the 3Rs (Reduce, Reuse, Recycle); increasing water usage efficiency in our processes; increasing effectiveness of water desalination in our seawater reverse osmosis unit work with agencies in eastern Thailand to develop water resources.

We believe that these mitigation measures can help us minimize risk, increase opportunities for sustainable growth, and achieve our business goals stated in our direction and strategic plans.



# INTERNAL CONTROL

PTT Global Chemical Public Company Limited (GC) runs an Internal Control System in accordance with the international standards of the Committee of Sponsoring Organizations of the Treadway Commission (COSO) to achieve internal control objectives relating to operations, reporting, and compliance with laws and regulations.

During Board of Directors Meeting 2/2020 held on February 17, 2020, the GC's system was evaluated based on an internal control assessment report prepared by the Management following the Securities and Exchange Commission, Thailand (SEC) guidelines. Together with the results of the Audit Committee's internal control review, the Board viewed that GC's internal control was adequate and effective for its businesses. No significant problems or material shortcomings were detected that could interfere with achieving internal control objectives. GC's Internal Control System was functioning properly in an adequate manner. The operation was efficiently managed with sufficient numbers of qualified and competent employees and processes. In addition, GC implemented a monitoring system to ensure the achievement of business objectives with effective, efficient operations, reliable reporting, and compliance with applicable laws and regulations as well as safeguarding GC Group's assets against misuse or unauthorized use by the Board, Management, or employees.

GC improved on internal control procedures and processes in 2019 to increase robustness and speed in identifying risks. GC's Internal Control System in accordance with COSO can be summarized in five categories:

## 1. CONTROL ENVIRONMENT

The Board and the Management strive to promote a corporate culture that focuses on integrity and ethics. They also supervise operations to ensure compliance with the organizational vision and mission and to ensure that GC's control environment is appropriate for implementing the Internal Control System, as detailed below.

- The Board and the Management establish the Corporate Governance Policy, Business Code of Conduct, Corporate Compliance Policy, Internal Control System Policy, and Anti-Corruption Guidelines setting out preferred practices for all directors, the Management, and employees. All employees are accountable for their internal control activities and for maintaining an effective internal control system. These policies are regularly communicated and promoted to all employees through training courses and other activities. These activities include monthly key meetings (Hook Talk) conducted by top management and used as a platform to communicate ethics and business code of conduct to employees, and to promote a good corporate governance culture. In 2019, GC emphasized communicating and promoting corporate governance and business code of conduct through a roadshow activity called "Hook Walk" on "How to perform duties in line with Governance and Compliance" to all departments as well as organizing a "GC Group Compliance Day" to communicate the importance of compliance to GC group employees. In addition, GC revised E-CG & Business Code of Conduct Handbook in electronic form for delivery to the Management and employees as guidelines including a written pledge to comply with the policy, principles, and business ethics. Also, an online Conflict of Interest application on intranet was developed to increase efficiency in data collection and storage, including security of information access.
- The Board is independent from the Management and is responsible for supervising overall operations as well as expressing views on the direction and strategy used as guidelines to formulate business and operating plans. Furthermore, the Board regularly monitors GC's performance and its subcommittees to ensure that GC achieve objectives and goals.
- GC's corporate structure is grouped into business units and functions that best support its business operations efficiently and with good governance. This structure comes with a system of checks and balances, with duties and responsibilities

delegated appropriately. Furthermore, all employees acknowledge their roles, authorities, responsibilities, and accountabilities.

- GC specifies qualifications for all positions: These form the basis for recruitment and personnel development aligned with corporate culture. Succession plans are in place for key management positions to ensure business continuity. Furthermore, performance-management and fair-reward systems are in place as incentives to motivate employee efficiency. In 2019, GC implemented agility testing—a tool for assessing the readiness of top talent to help plan career development. Moreover, “GC people website” was developed to gather information on human resources, employee activities, executive perspectives, recruitment, and relevant personnel information.
- GC regularly organize exhibitions to raise awareness of fraud risks and impacts from corruption, also providing related governance guidance to the Management and employees through activities and training programs such as GC Group CG Day, CG Role Model: Focus on Action and Ethical Leadership. In 2019 training programs were expanded to division managers of GC and GC group.

## 2. RISK ASSESSMENT

The Board and the Management recognize the importance of risk management in achieving short-term and long-term goals. The Risk Management Committee, appointed by the Board, along with the Enterprise Risk Management Committee, appointed by the CEO, are collectively responsible for overseeing risk management and ensuring that it is managed appropriately, effectively, and efficiently as specified under “Risk Management and Risk Factors”.

GC takes into consideration changes in internal and external factors along with the potential for fraud and corruption in assessing risks that can prevent GC from achieving objectives. Mitigation plans are drawn up to manage these risks. Risk-and-mitigation plans are reviewed and monitored monthly. All departments are responsible for managing risks to an acceptable

level. Furthermore, to meet the long-term goals, GC appoint taskforces to deal with specific risks that affect the business in the long run to ensure effective countermeasures.

- GC develops Key Risk Indicators (KRI) to monitor changes in risk factors so that these risks are managed efficiently and in a timely manner. GC also developed databases for risk management information to help every function access it for further analysis.
- In 2019, GC tested the robustness of “Cyber Incident Response” by simulating events (tabletop exercise) from cyberattacks with data leakage and hacking that could disrupt business operations and affect reputation. During this test, relevant operations and support functions were involved. This should assure all stakeholders that GC is well prepared to cope with such crises effectively.

## 3. CONTROL ACTIVITIES

GC develops efficient, effective control activities to mitigate risks to achieving goals and ensuring that risk remains acceptable. These include:

- Designing control activities aligned with internal control principles, including segregation of duties, policies, and good practices for conflict-of-interest transactions. In addition, the business is operated in a transparent, fair, and auditable manner. A transparent transaction-approval process provides the utmost benefit to the organization.
- Rules, regulations, policies, and procedures are in place with clear boundaries of authorization to limit the power and authority of the CEO, the President, the Management, and other employees. Furthermore, operations are reviewed regularly to ensure compliance with rules, regulations, policies, and procedures.
- GC implements the automated control of crucial processes: For example, SAP GRC Access Control is in place to ensure that SAP operating system access rights accord with good practices in segregation of duties. GC also use the Continuous Control Monitoring System (CCMS) for crucial processes to help detect and follow up exceptional transactions and to notify designated employees

to correct problematic transactions in a timely manner. In 2019, GC installed additional automated control systems such as blockchain for bank guarantees and Robotics Process Automation (RPA) for more efficient, effective procurement processes minimizing work process time and human errors, resulting in increased credibility and trust.

- GC has in place an Information Technology Security Policy in accordance with the ISO27001 – Information Security Management standards and the Control Objectives for Information and Related Technologies (COBIT), including reviewing, revising, and updating GC's policy covering important activities to ensure information security. Furthermore, Cyberthreat-prevention news and training are provided regularly to all employees. In 2019, GC increased the efficiency of an Information Technology Security by using two-factor authentication as two-step verification when accessing critical systems. In addition, to raise GC's information technology security standards, USB drive usage was cancelled, with the Cloud and intranet used to store or transfer data instead.
- Guidelines govern companies GC has invested in to ensure that these companies align with GC in terms of operating direction as well as complying with GC's policies, procedures, and strategic direction. Operations of these companies are monitored regularly and continuously.
- GC offers guidance called the GC Way of Conduct to govern and manage its subsidiaries, which is improved and continually communicated to affiliates in GC group. In 2019, GC provided training programs for executives of GC Group to raise understanding and awareness about the GC way of conduct and provided an assessment form to reinforce this guidance. The progress of this program was regularly reported to top management for acknowledgment.
- GC strengthens Governance, Risk Management, & Internal Control and Compliance (GRC) implementation by selecting employees to be accountable for driving, executing, and monitoring this program in its key business units. In 2019, GC provided GRC workshops for executives to raise GRC awareness as well as understanding. GRC personnel provides recommendations for improving corporate controls. GC also continually drove GRC in six subsidiaries through GRC committees by arranging quarterly meetings to govern, review, monitor, and assess GRC performance.

## 4. INFORMATION AND COMMUNICATION

GC values the quality of information and communication that supports the effectiveness of its Internal Control System, as detailed below.

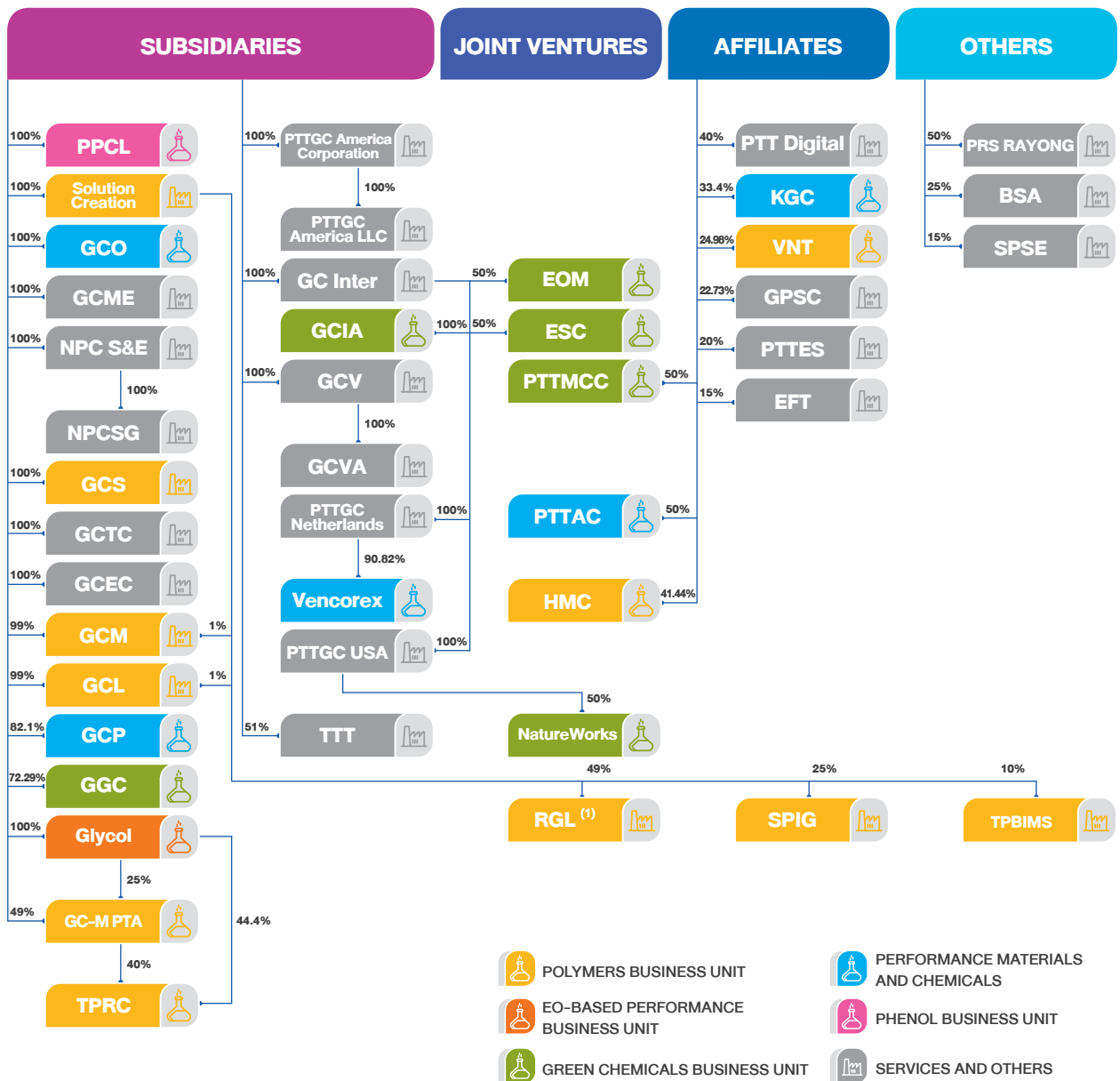
- GC have established information classification along with instructions for filing important and controlled documents, including information from both internal and external sources. This process is intended to ensure that important information about GC and its business operations is accurate, complete, adequate and timely.
  - GC has implemented SAP ECC 6.0 to process key business transactions, reducing duplication of small legacy systems, and enhancing the efficiency of management reporting.
  - GC has in place a database for information on key external factors to aid in preparing strategic plans, including systematically maintaining information on each business unit's plans aligned with GC strategies.
  - GC also developed an Incident Management System (IMS) Mobile Application to facilitate communicating information in the event of a crisis for more efficient information management.
  - In 2019, GC established the GC EYE team of analysts with expertise in business, the economy, and market outlook from various departments to strengthen the external-factors analysis and help GC anticipate developments that could affect business operations. GC EYE's news and analysis are communicated to executives and relevant parties through mobile application platform accessible anywhere and anytime.
- GC communicate relevant information to the Board, the Management, employees, and stakeholders to support efficient operations and internal controls.
  - Crucial information related to GC's performance is delivered to directors before Board meetings to allow sufficient time for them to study, review, and make decisions. When necessary, the Board may request additional information from specific departments or employees. Furthermore, to easily and swiftly dispatch information and meeting documents, GC implements "Digital Join", with information sent to directors' electronic devices protected by data encryption.

- Several internal communication channels are available: These include Town Hall activities for facilitating communication from top management to employees, the organization's intranet, and email. In addition, new employees receive important information through orientation sessions. Employees can also access useful information through a knowledge-based system and e-learning. GC develops "WE GC mobile phone application" enables all employees to access corporate news via mobile phone.
- GC use external communication channels to communicate with external stakeholders, such as company website, Facebook, and Twitter. In addition, designated departments are responsible for disclosing important information to all stakeholders regularly. A Customer Solutions Center is a communication channel for external stakeholders, founded as a one-stop center for interested parties to learn and gather information relating to GC products and services. Moreover, shareholders are invited to propose the agenda for the Annual General Meeting of Shareholders (AGM) and names of qualified candidates to be nominated for election as company directors to enhance good corporate governance regarding the rights and equitable treatment of shareholders.
- GC has established an open communication channel for whistleblowers. This allows employees and external individuals to be confident that any complaints will be handled with transparency, straightforwardness, confidentiality, and in a timely manner. In 2019, GC assessed employees' understanding of and confidence in whistleblowing with a survey to improve the whistleblower system, with survey results reported to the CG Board for acknowledgment.
- GC evaluates the adequacy of corporate internal controls system annually. In addition, GC implements Control Self-Assessment (CSA) for process owners to evaluate internal control mechanisms at the process level. The adequacy and appropriateness of assessment results are verified by the Internal Control System Division and GRC personnel who also provide recommendations for correcting any internal control deficiencies. Reporting and monitoring procedures are also in place to report deficiencies to the Management and track remediation progress to ensure that problems are addressed in a timely manner. In 2019 information-sharing sessions between internal audit, internal control, and GRC personnel were held to develop and improve internal control efficiency.
- Internal Audit, an independent unit reporting directly to the Audit Committee, examines and evaluates the effectiveness and operation of current internal control activities according to the audit plan approved by the Audit Committee. This audit plan is aligned with GC's strategy and its associated risks as well as providing suggestions and support for internal control. Deficiencies and recommendations are communicated by the management team to those responsible. The audit reports and findings are presented to the Audit Committee quarterly. Internal controls for financial reporting are reviewed by external auditors who report to the Audit Committee quarterly and yearly.
- GC has continually performed compliance monitoring and reporting for GC Group to ensure compliance with a compliance checklist used to monitor adherence to the corporate compliance policy.
- GC becomes also a certified member of the Private Sector Collective Action Coalition against Corruption (CAC) by performing annual self-assessments every year, with the results audited by the Audit Committee and signed by Chairman of the Audit Committee and Chairman of the Board of Directors every three years to prove that GC has indeed established anti-corruption policies, guidelines, and measures to prevent corruption as well as operating its business under GC's good corporate governance principles.

## MONITORING ACTIVITIES

GC continually monitors and evaluates the adequacy of its internal controls. Development and improvement processes are also in place to ensure efficient, effective internal controls as shown below.

# SHAREHOLDING STRUCTURE IN SUBSIDIARIES AND AFFILIATES



**Remarks:** Significant Change in the shareholding structure in subsidiaries and affiliates from January 1, 2019 to December 31, 2019

- March 26, 2019: The company invested in RGL through Solution Creation, as a result holding 49% of the shares.
- July 31, 2019: GC Inter sold all shares in PT Indo Thai Trading.

## SUBSIDIARIES

|                           |  |
|---------------------------|--|
| GCO                       | GC Oxirane Company Limited                           |
| GCS                       | GC Styrenics Company Limited                         |
| Glycol                    | GC Glycol Company Limited                            |
| PPCL                      | PTT Phenol Company Limited                           |
| Solution Creation         | Solution Creation Company Limited                    |
| GCL                       | GC Logistics Solutions Company Limited               |
| GCM                       | GC Marketing Solutions Company Limited               |
| GCP                       | GC Polyols Company Limited                           |
| GGC                       | Global Green Chemicals Public Company Limited        |
| GC-M PTA                  | GC-M PTA Company Limited                             |
| TPRC                      | Thai PET Resin Company Limited                       |
| Vencorex                  | Vencorex Holding                                     |
| GCEC                      | GC Estate Company Limited                            |
| GCME                      | GC Maintenance and Engineering Company Limited       |
| GCTC                      | GC Treasury Center Company Limited                   |
| NPC S&E                   | NPC Safety and Environmental Service Company Limited |
| NPCSG                     | NPC S&E Security Guard Company Limited               |
| TTT                       | Thai Tank Terminal Limited                           |
| GCIA                      | PTTGC Innovation America Corporation                 |
| GC Inter                  | PTTGC International Private Limited                  |
| GCV                       | GC Ventures Company Limited                          |
| GCVA                      | GC Ventures America Corporation                      |
| PTTGC America Corporation | PTTGC America Corporation                            |
| PTTGC America LLC         | PTTGC America LLC                                    |
| PTTGC Netherlands         | PTTGC International (Netherlands) B.V.               |
| PTTGC USA                 | PTTGC International (USA) Inc.                       |

## JOINT VENTURES

|             |                                     |
|-------------|-------------------------------------|
| EOM         | Emery Oleochemicals (M) Sdn. Bhd.   |
| ESC         | Emery Specialty Chemicals Sdn. Bhd. |
| HMC         | HMC Polymers Company Limited        |
| NatureWorks | NatureWorks LLC                     |
| PTTAC       | PTT Asahi Chemical Company Limited  |
| PTTMCC      | PTT MCC Biochem Company Limited     |
| RGL         | Revolve Group Limited               |

## AFFILIATES

|             |   |
|-------------|---|
| EFT         | Eastern Fluid Transport Company Limited       |
| GPSC        | Global Power Synergy Public Company Limited   |
| KGC         | Kuraray GC Advanced Materials Company Limited |
| PTT Digital | PTT Digital Solutions Company Limited         |
| PTTES       | PTT Energy Solutions Company Limited          |
| SPIG        | S. P. Petpack Inter Group Company Limited     |
| VNT         | Vinythai Public Company Limited               |

## OTHERS

|            |  |
|------------|--|
| BSA        | Business Services Alliance Company Limited                         |
| PRS RAYONG | Pracharath Rak Samakkee Rayong (Social Enterprise) Company Limited |
| SPSE       | Sarn Palung Social Enterprise Company Limited                      |
| TPBIMS     | TPBI & Myanmar Star Company Limited                                |

# REVENUE STRUCTURE

| Business Unit   | 2017                     |            | 2018                     |            | 2019                     |            |
|---|--------------------------|------------|--------------------------|------------|--------------------------|------------|
|   | Revenue<br>(Million THB) | %          | Revenue<br>(Million THB) | %          | Revenue<br>(Million THB) | %          |
| <b>1. Refinery and Shared Facilities</b>                    |                          |            |                          |            |                          |            |
| Total   | 187,424                  | 42.7       | 227,034                  | 43.8       | 175,036                  | 42.4       |
| <b>2. Aromatics</b>   |                          |            |                          |            |                          |            |
| Total   | 65,195                   | 14.7       | 92,601                   | 17.8       | 54,653                   | 13.2       |
| <b>3. Olefins</b>   |                          |            |                          |            |                          |            |
| Total   | 31,052                   | 7.0        | 29,267                   | 5.6        | 22,437                   | 5.4        |
| <b>4. Polymers</b>  |                          |            |                          |            |                          |            |
| Total   | 80,919                   | 18.4       | 89,353                   | 17.2       | 99,760                   | 24.2       |
| <b>5. EO-Based Performance</b>                              |                          |            |                          |            |                          |            |
| Total   | 15,903                   | 3.6        | 16,506                   | 3.2        | 10,141                   | 2.5        |
| <b>6. Green Chemicals</b>                                   |                          |            |                          |            |                          |            |
| Total   | 18,195                   | 4.1        | 15,233                   | 2.9        | 12,017                   | 2.9        |
| <b>7. Performance Materials and Chemicals</b>               |                          |            |                          |            |                          |            |
| Total   | 39,198                   | 9.0        | 46,751                   | 9.1        | 36,769                   | 8.9        |
| <b>8. Services and Others</b>                               |                          |            |                          |            |                          |            |
| Total   | 2,035                    | 0.5        | 1,910                    | 0.4        | 1,997                    | 0.5        |
| <b>Net Total after deduction from connected transaction</b> | <b>439,921</b>           | <b>100</b> | <b>518,655</b>           | <b>100</b> | <b>412,810</b>           | <b>100</b> |



# CONNECTED TRANSACTION

## CONNECTED TRANSACTION BETWEEN RELATED COMPANIES

For the 2019 accounting period, PTTGC conducted significant business transactions with its subsidiaries and related companies with common shareholders and/or Directors. Connected transactions with other entities which may result in conflicts of interest are based on market or contractual prices (the prices agreed in previous contracts) - if there are no reference market prices. Details of the relationships with these companies are as follows:

(Unit: Million THB)

| Company   | Relationship<br>As at 31 <sup>st</sup> December 2019  | Connected Transaction                            | 2017    | 2018    | 2019    |
|---|---|--|---------|---------|---------|
| 1. PTT Public Company Limited (PTT)                   | <ul style="list-style-type: none"> <li>Major shareholder holding 47.92% of the shares in PTTGC</li> <li>Common Directors:                             <ol style="list-style-type: none"> <li>Mr. Don Wasantapruerk</li> <li>Mr. Supattanapong Punmeechaow</li> </ol> </li> <li>Directors who are PTT Executives:                             <ol style="list-style-type: none"> <li>Mr. Wittawat Svasti-xuto</li> <li>Mrs. Arawadee Photisaro</li> <li>Mr. Disathat Panyarachun</li> <li>Mr. Kongkrapan Intarajang</li> </ol> </li> <li>Common Management:                             <ol style="list-style-type: none"> <li>Mr. Kongkrapan Intarajang</li> <li>Miss Duangkamol Settanang</li> </ol> </li> <li>Sales/Purchases transaction of products and services</li> </ul> | <b>Statements of Income Transactions</b>         |         |         |         |
|   |   | Sales of goods or rendering of services          | 148,614 | 124,542 | 29,047  |
|   |   | Purchases of goods or receiving of services      | 244,807 | 310,191 | 237,553 |
|   |   | Other income                                     | 40      | 76      | 26      |
|   |   | Other expense                                    | 88      | 115     | 504     |
|   |   | <b>Statements of Financial Position Balances</b> |         |         |         |
|   |   | Trade accounts receivable – related parties      | 12,625  | 3,576   | 2,265   |
|   |   | Other accounts receivable – related parties      | 210     | 49      | 38      |
|   |   | Trade accounts payable – related parties         | 23,189  | 23,678  | 17,400  |
|   |   | Other accounts payable – related parties         | 36      | 43      | 90      |
| 2. Global Power Synergy Public Company Limited (GPSC) | <ul style="list-style-type: none"> <li>Associate company (GC holds 22.73% of the shares)</li> <li>Major shareholder (PTT) holds 22.81% of the shares</li> <li>Common Director: Mr. Wittawat Svasti-xuto</li> <li>Executives who are Directors of GPSC:                             <ol style="list-style-type: none"> <li>Mr. Kongkrapan Intarajang</li> <li>Mr. Boonchai Chunhawiksit</li> </ol> </li> <li>Sales/Purchases transaction of products and services</li> </ul>   | <b>Statements of Income Transactions</b>         |         |         |         |
|   |   | Sales of goods or rendering of services          | 42      | 37      | 69      |
|   |   | Purchases of goods or services                   | 8,290   | 8,966   | 9,405   |
|   |   | Interest income                                  | -       | -       | 163     |
|   |   | Other income                                     | 24      | 9       | 7       |
|   |   | Other expense                                    | 3       | -       | 2       |
|   |   | <b>Statements of Financial Position Balances</b> |         |         |         |
|   |   | Trade accounts receivable – related parties      | 9       | 10      | 25      |
|   |   | Other accounts receivable – related parties      | 65      | 159     | 173     |
|   |   | Trade accounts payable – related parties         | 1,634   | 1,771   | 1,024   |
| Other accounts payable – related parties              | 11  | 13   | 6       |         |         |
| Payables to contractors – related parties             | 17  | 19   | 21      |         |         |

(Unit: Million THB)

| Company  | Relationship<br>As at 31 <sup>st</sup> December 2019   | Connected Transaction                            | 2017   | 2018                                     | 2019 |
|--|--|--|--|--|------|
| 3. PTT Digital Solutions Company Limited (PTT DIGITAL) | <ul style="list-style-type: none"> <li>Associate company (GC holds 40% of the shares)</li> <li>Major shareholder (PTT) holds 20% of the shares</li> <li>Executives who are Directors of PTT DIGITAL:               <ol style="list-style-type: none"> <li>Mr. Pirun Krimwongrut</li> <li>Mrs. Chatsuda Kanjanarat</li> </ol> </li> <li>Services transaction</li> </ul> | <b>Statements of Income Transactions</b>         |  |  |      |
|  |  | Purchases of goods or services                   | 3  | 1  | 5    |
|  |  | Other income                                     | 57   | 52                                       | 55   |
|  |  | Other expense                                    | 451  | 455                                      | 451  |
|  |  | <b>Statements of Financial Position Balances</b> |  |  |      |
|  |  | Other accounts receivable – related parties      | 27   | 26                                       | 29   |
|  |  | Other accounts payable – related parties         | 115  | 84                                       | 104  |
|  |  | Payables to contractors – related parties        | 50   | 62                                       | 79   |
|  |  | 4. PTT Energy Solutions Company Limited (PTTES)  | <ul style="list-style-type: none"> <li>Associate company (GC holds 20% of the shares)</li> <li>Major shareholder (PTT) holds 40% of the shares</li> <li>Common Director: Mr. Wittawat Svasti-xuto</li> <li>Executive who is Director of PTTES: Mrs. Jeeranee Pimthanothai</li> <li>Services transaction</li> </ul> | <b>Statements of Income Transactions</b> |      |
| Sales of goods or rendering of services                | -  |  |  | 3  | 7    |
| Purchases of goods or services                         | 127  |  |  | 122                                      | 103  |
| Other income   | 3  |  |  | -  | -    |
| Other expense  | 3  |  |  | 8  | 2    |
| <b>Statements of Financial Position Balances</b>       |  |  |  |  |      |
| Other accounts receivable – related parties            | 1  |  |  | 27                                       | 1    |
| Other accounts payable – related parties               | 15   |  |  | 52                                       | 1    |
| 5. Trans Thai-Malaysia (Thailand) Co., Ltd. (TTM)      | <ul style="list-style-type: none"> <li>Major shareholder (PTT) holds 50% of the shares</li> <li>Services transaction</li> </ul>  |  |  | <b>Statements of Income Transactions</b> |      |
|  |  | Sales of goods or rendering of services          | 2  | -  | -    |
|  |  |  |  |  |      |
| 6. TOP Solvent Company Limited (TS)                    | <ul style="list-style-type: none"> <li>Subsidiary of TOP</li> <li>Sales/Purchases transaction of products</li> </ul>   | <b>Statements of Income Transactions</b>         |  |  |      |
|  |  | Sales of goods or rendering of services          | 242  | 184                                      | 130  |
|  |  | Purchases of goods or services                   | 127  | 274                                      | 206  |
|  |  | <b>Statements of Financial Position Balances</b> |  |  |      |
|  |  | Trade accounts receivable – related parties      | 11   | 10                                       | 6    |
|  |  | Trade accounts payable – related parties         | 5  | 21                                       | 10   |
| Other accounts payable – related parties               | 10   | 3  | 3  |  |      |

(Unit: Million THB)

| Company   | Relationship<br>As at 31 <sup>st</sup> December 2019  | Connected Transaction                            | 2017   | 2018                                     | 2019  |
|---|---|--|--|--|-------|
| 7. Dhipaya Insurance Public Company Limited (DHIPAYA) | <ul style="list-style-type: none"> <li>Major shareholder (PTT) holds 13.33% of the shares</li> <li>Services transaction</li> </ul>  | <b>Statements of Income Transactions</b>         |  |  |       |
|   |   | Purchases of goods or services                   | 761  | 618                                      | 653   |
|   |   | Other income                                     | 206  | 1  | 39    |
|   |   | Other expense                                    | 15   | 64                                       | 22    |
|   |   | <b>Statements of Financial Position Balances</b> |  |  |       |
|   |   | Other accounts receivable – related parties      | 595  | 503                                      | 477   |
|   |   | Trade accounts payable – related parties         | -  | 7  | 1     |
|   |   | Other accounts payable – related parties         | 16   | 16                                       | 3     |
|   |   | 8. Thai Paraxylene Company Limited (TPX)         | <ul style="list-style-type: none"> <li>Subsidiary of TOP</li> <li>Sales/Purchases transaction of products</li> </ul> | <b>Statements of Income Transactions</b> |       |
| Sales of goods or rendering of services               | -   |  |  | -  | 55    |
| <b>Statements of Financial Position Balances</b>      |   |  |  |  |       |
| Trade accounts payable – related parties              | -   |  |  | 201                                      | -     |
| 9. Thai Oil Public Company Limited (TOP)              | <ul style="list-style-type: none"> <li>Major shareholder (PTT) holds 47.53% of the shares</li> <li>Sales/Purchases transaction of products and services</li> </ul>  | <b>Statements of Income Transactions</b>         |  |  |       |
|   |   | Sales of goods or rendering of services          | 1,107  | 992                                      | 1,557 |
|   |   | Other income                                     | 3  | 6  | 4     |
|   |   | <b>Statements of Financial Position Balances</b> |  |  |       |
|   |   | Trade accounts receivable – related parties      | 68   | 8  | 100   |
|   |   | Other accounts receivable – related parties      | -  | 39                                       | -     |
|   |   | Other accounts payable – related parties         | -  | -  | 4     |
| 10. Business Services Alliance Company Limited (BSA)  | <ul style="list-style-type: none"> <li>GC holds 25% of the preference shares</li> <li>Major shareholder (PTT) holds 100% of the shares</li> <li>Sales/Purchases transaction of products and services</li> </ul> | <b>Statements of Income Transactions</b>         |  |  |       |
|   |   | Sales of goods or rendering of services          | -  | -  | 1     |
|   |   | Purchases of goods or services                   | 205  | 160                                      | 142   |
|   |   | Other income                                     | -  | -  | 4     |
|   |   | Other expense                                    | 101  | 108                                      | 126   |
|   |   | <b>Statements of Financial Position Balances</b> |  |  |       |
|   |   | Other accounts receivable – related parties      | -  | -  | 4     |
|   |   | Trade accounts payable – related parties         | 52   | 57                                       | 93    |
|   |   | Other accounts payable – related parties         | 103  | 60                                       | 63    |
| Payables to contractors – related parties             | 8   | 3  | 3  |  |       |

(Unit: Million THB)

| Company   | Relationship<br>As at 31 <sup>st</sup> December 2019   | Connected Transaction                            | 2017 | 2018   | 2019    |
|---|--|--|------|--------|---------|
| 11. PTT Global Management Company Limited (PTTGM)                 | <ul style="list-style-type: none"> <li>Major shareholder (PTT) holds 100% of the shares</li> <li>Services transaction</li> </ul>                                   | <b>Statements of Income Transactions</b>         |      |        |         |
|   |  | Other expense                                    | 11   | -      | -       |
| 12. PTT Oil and Retail Business Public Company Limited (PTTOR)    | <ul style="list-style-type: none"> <li>Major shareholder (PTT) holds 100% of the shares</li> <li>Sales/Purchases transaction of products and services</li> </ul>   | <b>Statements of Income Transactions</b>         |      |        |         |
|   |  | Sales of goods or rendering of services          | -    | 69,948 | 123,025 |
|   |  | Purchases of goods or services                   | -    | 52     | 108     |
|   |  | Other income                                     | -    | 143    | 12      |
|   |  | Other expense                                    | -    | -      | 2       |
|   |  | <b>Statements of Financial Position Balances</b> |      |        |         |
|   |  | Trade accounts receivable – related parties      | -    | 8,108  | 8,705   |
|   |  | Other accounts receivable – related parties      | -    | 86     | 77      |
|   |  | Trade accounts payable – related parties         | -    | -      | 6       |
|   |  | Other accounts payable – related parties         | -    | 3      | 105     |
| 13. PTTEP Siam Limited (PTTEPS)                                   | <ul style="list-style-type: none"> <li>Subsidiary of PTTEP</li> <li>Sales/Purchases transaction of products and services.</li> </ul>                               | <b>Statements of Income Transactions</b>         |      |        |         |
|   |  | Sales of goods or rendering of services          | 46   | 1      | 2       |
| 14. PTTEP International Limited (PTTEPI)                          | <ul style="list-style-type: none"> <li>Subsidiary of PTTEP</li> <li>Services transaction</li> </ul>  | <b>Statements of Income Transactions</b>         |      |        |         |
|   |  | Sales of goods or rendering of services          | 1    | -      | -       |
| 15. PTT Exploration and Production Public Company Limited (PTTEP) | <ul style="list-style-type: none"> <li>Major shareholder (PTT) holds 65.29% of the shares</li> <li>Sales/Purchases transaction of products and services</li> </ul> | <b>Statements of Income Transactions</b>         |      |        |         |
|   |  | Sales of goods or rendering of services          | 21   | 12     | 13      |
|   |  | Other expense                                    | -    | 2      | 8       |
|   |  | <b>Statements of Financial Position Balances</b> |      |        |         |
|   |  | Trade accounts receivable – related parties      | 3    | 5      | 1       |
| 16. PTT Tank Terminal Company Limited (PTT TANK)                  | <ul style="list-style-type: none"> <li>Major shareholder (PTT) holds 100% of the shares</li> <li>Sales/Purchases transaction of products and services</li> </ul>   | <b>Statements of Income Transactions</b>         |      |        |         |
|   |  | Sales of goods or rendering of services          | 47   | 46     | 47      |
|   |  | <b>Statements of Financial Position Balances</b> |      |        |         |
|   |  | Trade accounts receivable – related parties      | 22   | 8      | 6       |
|   |  | Other accounts payable – related parties         | -    | -      | 1       |

(Unit: Million THB)

| Company  | Relationship<br>As at 31 <sup>st</sup> December 2019   | Connected Transaction                            | 2017   | 2018   | 2019  |
|--|--|--|--------|--------|-------|
| 17. PTT International Trading Pte. Ltd. (PTTT)         | <ul style="list-style-type: none"> <li>Major shareholder (PTT) holds 100% of the shares</li> <li>Sales/Purchases transaction of products</li> </ul>  | <b>Statements of Income Transactions</b>         |        |        |       |
|  |  | Sales of goods or rendering of services          | 21,352 | 24,330 | 9,889 |
|  |  | Purchases of goods or services                   | 859    | 1,252  | 1,317 |
|  |  | Other income                                     | 3      | 21     | 2     |
|  |  | Other expense                                    | 6      | 7      | 13    |
|  |  | <b>Statements of Financial Position Balances</b> |        |        |       |
|  |  | Trade accounts receivable – related parties      | 2,446  | 1,724  | 2,374 |
|  |  | Other accounts receivable – related parties      | 24     | 209    | 93    |
|  |  | Trade accounts payable – related parties         | 203    | 251    | 221   |
|  |  | Other accounts payable – related parties         | 661    | 39     | 29    |
| 18. PTT LNG Company Limited (PTTLNG)                   | <ul style="list-style-type: none"> <li>Major shareholder (PTT) holds 100% of the shares</li> <li>Sales/Purchases transaction of products and services</li> </ul>                                 | <b>Statements of Income Transactions</b>         |        |        |       |
|  |  | Sales of goods or rendering of services          | 27     | 9      | 4     |
|  |  | <b>Statements of Financial Position Balances</b> |        |        |       |
| Trade accounts receivable – related parties            | 22   | 1  | 3      |        |       |
| 19. PTTEP Services Limited (PTTEP Services)            | <ul style="list-style-type: none"> <li>Subsidiary of PTTEP</li> <li>Services transaction</li> </ul>  | <b>Statements of Income Transactions</b>         |        |        |       |
|  |  | Other expense                                    | 1      | 1      | 1     |
| 20. Labix Company Limited (LABIX)                      | <ul style="list-style-type: none"> <li>Subsidiary of TOP</li> <li>Sales/Purchases transaction of products and services</li> </ul>  | <b>Statements of Income Transactions</b>         |        |        |       |
|  |  | Sales of goods or rendering of services          | 20     | 9      | 10    |
|  |  | <b>Statements of Financial Position Balances</b> |        |        |       |
| Trade accounts receivable – related parties            | 2  | 1  | -      |        |       |
| 21. Sakchaisit Company Limited (SAKC)                  | <ul style="list-style-type: none"> <li>Subsidiary of TOP</li> <li>Sales/Purchases transaction of products and services</li> </ul>  | <b>Statements of Income Transactions</b>         |        |        |       |
|  |  | Sales of goods or rendering of services          | 1,844  | 2,320  | 2,124 |
|  |  | <b>Statements of Financial Position Balances</b> |        |        |       |
| Trade accounts receivable – related parties            | 177  | 181  | 206    |        |       |
| 22. Sport Services Alliance Company Limited (SSS)      | <ul style="list-style-type: none"> <li>Major shareholder (PTT) indirectly holds shares</li> <li>Executive who is Director of SSS: Mr. Pirun Krimwongrut</li> <li>Services transaction</li> </ul> | <b>Statements of Income Transactions</b>         |        |        |       |
|  |  | Other expense                                    | 37     | 37     | 37    |
| 23. UBE Chemicals (Asia) Public Company Limited (UCHA) | <ul style="list-style-type: none"> <li>Associate of IRPC</li> <li>Sales/Purchases transaction of products and services</li> </ul>  | <b>Statements of Income Transactions</b>         |        |        |       |
|  |  | Sales of goods or rendering of services          | 23     | 20     | 22    |
|  |  | <b>Statements of Financial Position Balances</b> |        |        |       |
| Trade accounts receivable – related parties            | 2  | 5  | 2      |        |       |

(Unit: Million THB)

| Company   | Relationship<br>As at 31 <sup>st</sup> December 2019   | Connected Transaction                            | 2017   | 2018   | 2019   |
|---|--|--|--------|--------|--------|
| 24. Energy Complex Company Limited (ENCO)       | <ul style="list-style-type: none"> <li>Major shareholder (PTT) holds 50% of the shares</li> <li>Services transaction</li> </ul>                                    | <b>Statements of Income Transactions</b>         |        |        |        |
|   |  | Sales of goods or rendering of services          | 44     | 47     | 46     |
|   |  | Other expense                                    | 196    | 205    | 213    |
|   |  | <b>Statements of Financial Position Balances</b> |        |        |        |
|   |  | Trade accounts receivable – related parties      | 13     | 13     | 9      |
|   |  | Other accounts receivable – related parties      | 44     | 47     | 1      |
|   |  | Other accounts payable – related parties         | 13     | 19     | 4      |
| 25. IRPC Polyol Company Limited (IRPCP)         | <ul style="list-style-type: none"> <li>Subsidiary of IRPC</li> <li>Sales/Purchases transaction of products</li> </ul>  | <b>Statements of Income Transactions</b>         |        |        |        |
|   |  | Sales of goods or rendering of services          | 37     | 23     | 13     |
|   |  | <b>Statements of Financial Position Balances</b> |        |        |        |
|   |  | Trade accounts receivable – related parties      | 10     | 4      | 5      |
| 26. IRPC Public Company Limited (IRPC)          | <ul style="list-style-type: none"> <li>Major shareholder (PTT) holds 47.55% of the shares</li> <li>Sales/Purchases transaction of products and services</li> </ul> | <b>Statements of Income Transactions</b>         |        |        |        |
|   |  | Sales of goods or rendering of services          | 20,162 | 26,560 | 19,892 |
|   |  | Purchases of goods or services                   | 14,106 | 20,253 | 14,150 |
|   |  | Other income                                     | 16     | 11     | 1      |
|   |  | Other expense                                    | 7      | 5      | 9      |
|   |  | <b>Statements of Financial Position Balances</b> |        |        |        |
|   |  | Trade accounts receivable – related parties      | 1,969  | 2,022  | 1,816  |
|   |  | Other accounts receivable – related parties      | 6      | 35     | 3      |
|   |  | Trade accounts payable – related parties         | 1,311  | 1,583  | 1,224  |
|   |  | Other accounts payable – related parties         | 2      | 1      | 3      |
| 27. PTTEP International Limited (Yangon Branch) | <ul style="list-style-type: none"> <li>Subsidiary of PTTEP</li> <li>Services transaction</li> </ul>  | <b>Statements of Income Transactions</b>         |        |        |        |
|   |  | Sales of goods or rendering of services          | -      | 2      | -      |
|   |  | <b>Statements of Financial Position Balances</b> |        |        |        |
|   |  | Trade accounts receivable – related parties      | -      | 1      | -      |
| 28. PTT International Trading DMCC (PTTT DMCC)  | <ul style="list-style-type: none"> <li>Subsidiary of PTTT</li> <li>Sales/Purchases transaction of products</li> </ul>  | <b>Statements of Income Transactions</b>         |        |        |        |
|   |  | Sales of goods or rendering of services          | 863    | 1,417  | -      |
| 29. TOP Solvent (Vietnam) LLC. (TSV)            | <ul style="list-style-type: none"> <li>Subsidiary of TOP</li> <li>Sales/Purchases transaction of products</li> </ul>   | <b>Statements of Income Transactions</b>         |        |        |        |
|   |  | Sales of goods or rendering of services          | 215    | 142    | 54     |
|   |  | <b>Statements of Financial Position Balances</b> |        |        |        |
|   |  | Trade accounts receivable – related parties      | 23     | 1      | 1      |

(Unit: Million THB)

| Company  | Relationship<br>As at 31 <sup>st</sup> December 2019  | Connected Transaction                            | 2017 | 2018 | 2019  |
|--|---|--|------|------|-------|
| 30. Sarn Palung Social Enterprise Company Limited (SPSE) | <ul style="list-style-type: none"> <li>Other related company (GC holds 15% of the shares)</li> <li>Major shareholder (PTT) holds 20% of the shares</li> <li>Services transaction</li> </ul> | <b>Statements of Income Transactions</b>         |      |      |       |
|  |   | Other expense                                    | -    | -    | 3     |
| 31. Glow Energy Public Company Limited (GLOW)            | <ul style="list-style-type: none"> <li>Subsidiary of GPSC</li> <li>Sales/Purchases transaction of products</li> </ul>   | <b>Statements of Income Transactions</b>         |      |      |       |
|  |   | Sales of goods or rendering of services          | -    | -    | 261   |
|  |   | Purchases of goods or services                   | -    | -    | 2,851 |
|  |   | Other expense                                    | -    | -    | 3     |
|  |   | <b>Statements of Financial Position Balances</b> |      |      |       |
|  |   | Trade accounts receivable – related parties      | -    | -    | 26    |
|  |   | Other accounts receivable – related parties      | -    | -    | 2     |
|  |   | Trade accounts payable – related parties         | -    | -    | 323   |
| 32. Glow SPP 2 Company Limited (GSPP2)                   | <ul style="list-style-type: none"> <li>Subsidiary of GPSC</li> <li>Sales/Purchases transaction of products</li> </ul>   | <b>Statements of Income Transactions</b>         |      |      |       |
|  |   | Sales of goods or rendering of services          | -    | -    | 9     |
|  |   | <b>Statements of Financial Position Balances</b> |      |      |       |
| Trade accounts receivable – related parties              | -   | -  | 2    |      |       |
| 33. Glow SPP 3 Company Limited (GSPP3)                   | <ul style="list-style-type: none"> <li>Subsidiary of GPSC</li> <li>Sales/Purchases transaction of products</li> </ul>   | <b>Statements of Income Transactions</b>         |      |      |       |
|  |   | Sales of goods or rendering of services          | -    | -    | 6     |
|  |   | <b>Statements of Financial Position Balances</b> |      |      |       |
| Trade accounts receivable – related parties              | -   | -  | 2    |      |       |
| 34. Glow SPP 11 Company Limited (GSPP11)                 | <ul style="list-style-type: none"> <li>Subsidiary of GPSC</li> <li>Sales/Purchases transaction of products</li> </ul>   | <b>Statements of Income Transactions</b>         |      |      |       |
|  |   | Sales of goods or rendering of services          | -    | -    | 3     |
|  |   | <b>Statements of Financial Position Balances</b> |      |      |       |
| Trade accounts receivable – related parties              | -   | -  | 1    |      |       |
| 35. Glow IPP Company Limited (GIPP)                      | <ul style="list-style-type: none"> <li>Subsidiary of GPSC</li> <li>Sales/Purchases transaction of products</li> </ul>   | <b>Statements of Income Transactions</b>         |      |      |       |
|  |   | Sales of goods or rendering of services          | -    | -    | 2     |
| 36. GHECO-One Company Limited (GHECO1)                   | <ul style="list-style-type: none"> <li>Subsidiary of GPSC</li> <li>Sales/Purchases transaction of products</li> </ul>   | <b>Statements of Income Transactions</b>         |      |      |       |
|  |   | Sales of goods or rendering of services          | -    | -    | 7     |
|  |   | <b>Statements of Financial Position Balances</b> |      |      |       |
| Trade accounts receivable – related parties              | -   | -  | 2    |      |       |
| 37. PTTEP South Asia Limited (PTTEP SA)                  | <ul style="list-style-type: none"> <li>Subsidiary of PTTEP</li> <li>Service transaction</li> </ul>  | <b>Statements of Income Transactions</b>         |      |      |       |
|  |   | Sales of goods or rendering of services          | -    | -    | 1     |

## **MEASURE AND PROCEDURE FOR APPROVAL OF CONNECTED TRANSACTION**

The Company's Articles of Association stated that a Director can acquire or dispose of GC assets or perform any business transaction involving GC either by himself or herself or on behalf of others only with the approval from the Audit Committee and the Board of Director. However, any Director who personally gains from any acquisition or disposal of GC asset or any transaction of GC is not allowed to vote on that matter.

After receiving approval from the Audit Committee and the Board of Directors, GC can perform any business transactions or acquire or dispose of major assets in line with the announcement of the Stock Exchange of Thailand (SET) and the Securities and Exchange Commission, Thailand (SEC). This also applies to GC's subsidiaries in the SET announcement concerning connected transaction of listed companies as well as the buying and selling of registered company assets.

## **NECESSITY AND JUSTIFICATION OF CONNECTED TRANSACTION**

The sales of products by GC to connected companies have been carried out mainly so that they may process its products into their own products for sale at prices corresponding to long-term off-take agreements or spot prices. Prices must prove mutually beneficial and based on market prices without any undue transfer of interests or extraordinary items to both parties. When providing services to connected companies, transactions must cover transportation or storage costs of products. The charges for services are both market-based and benefit-based without any undue transfer of interests or extraordinary items.

For the product and feedstock supply and/or services as well as the volume of products, feedstock or services given by connected companies must meet the needs and business operation of GC. Prices of products trading or services are as agreed by GC and connected companies without any undue transfer of interests or extraordinary items. In addition, GC is required to purchase feedstock from connected companies because the capacity and quality of such feedstock meet its needs. GC also saves on transportation expenses since the feedstock can be transferred safely by GC's pipeline systems from their plants in Map Ta Phut Industrial Estate, Rayong.

## **OPINION OF INDEPENDENT DIRECTORS**

The Independent Directors agreed with the Board of Directors.

## **POLICY AND TREND ON FUTURE CONNECTED TRANSACTION**

Future connected transactions between GC and connected companies will be conducted as part of the normal course of business with no special favors and no transfer of benefits. For the pricing policy between GC and connected companies, the price of products or feedstock purchased will be set in agreement and or linked to market prices. In addition, service charges paid to connected companies will also be at arm's length. The price of product sold or purchased between GC and connected companies will, as a rule, be linked to market prices.

Disclosure of the Company's connected transaction must be in compliance with the rules and regulations of the Securities and Exchange Commission, Thailand (SEC) and the Stock Exchange of Thailand (SET). The audit standards for connected parties will be as specified by the Federation of Accounting Professions under The Royal Patronage of His Majesty the King.

# SHAREHOLDING STRUCTURE

List of Top 10 Major Shareholders according to registered book closing date on September 2, 2019

| No. | Shareholders   | Shares        | %      |
|-----|--|---------------|--------|
| 1.  | PTT Public Company Limited <sup>(1)</sup>                | 2,149,920,915 | 47.68% |
| 2.  | Thai NVDR Company Limited <sup>(2)</sup>                 | 359,474,834   | 7.97%  |
| 3.  | HMC Polymers Company Limited <sup>(3)</sup>              | 83,427,636    | 1.85%  |
| 4.  | SOUTH EAST ASIA UK (TYPE C) NOMINEES LIMITED             | 81,907,228    | 1.82%  |
| 5.  | STATE STREET EUROPE LIMITED                              | 81,592,700    | 1.81%  |
| 6.  | THE BANK OF NEW YORK MELLON                              | 69,165,346    | 1.53%  |
| 7.  | Social Security Office                                   | 55,195,851    | 1.22%  |
| 8.  | NORTRUST NOMINEES LIMITED-NT0 SEC LENDING THAILAND CL AC | 50,585,514    | 1.12%  |
| 9.  | Bangkok Synthetics Company Limited                       | 43,420,625    | 0.96%  |
| 10. | GIC PRIVATE LIMITED                                      | 38,652,029    | 0.86%  |

**Remarks:**

- (1) Majority shareholder of PTT Public Company Limited is Ministry of Finance.
- (2) Shareholders of Thai NVDR Company Limited holding Non-Voting Depository Receipt: NVDR, are ineligible for voting at shareholders' meeting except when exercising their voting on delisting the shares from the Stock Exchange of Thailand.
- (3) GC holds 41.44% of shares of HMC Polymers Company Limited.

As of December 30, 2019, the major shareholders with significant influence on the establishment of GC's policy and strategy are PTT Group, holding 47.92% of shares of GC.

As of December 30, 2019, there are 20 foreign shareholders of GC, holding a combined of 650,676,413 shares of GC or 14.43% of paid-up capital of GC.

GC has foreign shareholding limitation as specified in Article 8 of Article of Association that "GC's shares can be transferred without any restriction, except in the case where the said transfer would result in more than thirty-seven (37) percent of the Company's total paid-up shares being held by foreigners".

## DIVIDEND PAYMENT POLICY

### PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED

The Board of Directors Meeting No. 1/2011, held on October 19, 2011, resolved that the dividend payment policy of the Company is to pay dividend at a rate of no less than 30% of net profit after tax and allocation to all reserve funds of the Company. Such dividend payment however is subject to the investment plan, other necessary and appropriate considerations in the future.

### SUBSIDIARIES' DIVIDEND PAYMENT POLICY

The dividend payment policy for GC's subsidiaries shall be considered and proposed by the Board of Directors of each subsidiary for approval at the Annual General Meeting of each subsidiary. The dividend payment of subsidiaries shall be calculated based on the investment plans and other requirements and considerations, such as the adequacy of cash flow of each subsidiary after deducting reserve funds in accordance with the law.

**GREEN  
JOURNEY  
WITH  
PRIDE**



# **ORGANIZATION STRUCTURE**

# GC BOARD OF DIRECTORS

As of December 31, 2019

## Mr. Piyasvasti Amranand

Chairman and  
Chairman of the Independent Director  
Age 66

### Appointed

April 9, 2018



### Education/Training

- Doctor of Philosophy (Ph.D.) in Economics, London School of Economics and Political Science, U.K.
- Master of Science (Economics), London School of Economics and Political Science, University of London, U.K.
- Bachelor of Arts (Mathematics), (First-class Honors), University of Oxford, U.K.
- The Executive Program in Energy Literacy for a Sustainable Future Class 6, Thailand Energy Academy (TEA)

### Director Training

- Director Accreditation Program (DAP) Class 35/2005, Thai Institute of Directors Association (IOD)

### Board Member/Management in Listed Company – The Stock Exchange of Thailand : 3

- Chairman and Chairman of the Independent Director, PTT Global Chemical Public Company Limited
- Independent Director and Chairman of the Audit Committee, Kasikornbank Public Company Limited
- Independent Director and Chairman of the Audit Committee, Pruksa Holding Public Company Limited

### Board Member/Management in Non-Listed Company – The Stock Exchange of Thailand : 1

- Director, Kiroro Resort Holdings Company Limited

### Position in Other Organization/Institutions : 2

- Chairman, Energy for Environment Foundation
- Council Member of the Heart Foundation of Thailand under the Royal Patronage

### Work Experiences (5 Years Past Experiences)

- |                          |   |
|--------------------------|---|
| 1 Jul 2014 - 11 Jul 2018 | Independent Director and Chairman,<br>PTT Public Company Limited                                    |
| 2014 - 2016              | Independent Director and Chairman of the Audit Committee, Pruksa Real Estate Public Company Limited |

**Shareholding :** None

**Relation among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mr. Prasert Bunsumpun

Independent Director and  
Chairman of the Risk  
Management Committee  
Age 67

### Appointed

October 19, 2011/  
April 8, 2014 (1<sup>st</sup> re-elected)/  
April 5, 2017 (2<sup>nd</sup> re-elected)



## Mr. Prasan Chuaphanich

Independent Director and  
Chairman of  
the Audit Committee

(Resigned with effective  
from November 18, 2019)

Age 67

### Appointed

April 5, 2016,  
April 5, 2019 (re-elected)



### Education/Training

- Honorary Doctoral of Arts (Innovation and Management) Faculty of Humanities and Social Sciences, Suan Sunandha Rajabhat University
- Honorary Doctoral in Management, Mahasarakham University
- Honorary Doctoral in Management Science, Phetchaburi Rajabhat University
- Honorary Doctoral in Management, National Institute of Development Administration (NIDA)
- Honorary Doctoral in Engineering, Chulalongkorn University
- Master of Business Administration (M.B.A.), Utah State University, U.S.A.
- Bachelor of Engineering (Civil Engineering), Chulalongkorn University
- The Rule of Law for Democracy Class 7, College of the Constitutional Court
- Business Revolution and Innovation Network (BRAIN) Class 1, The Federation of Thai Industries (F.T.I.)
- The Executive Program in Energy Literacy for a Sustainable Future, Class 3, Thailand Energy Academy (TEA)
- Capital Market Academy Leadership Program, Class 3, Capital Market Academy
- Advanced Certificate Course in Politics and Governance in Democratic System for Executives, Class 6, King Prajadhipok's Institute
- Certificate in Advance Management Program (Class 155), Harvard Business School, U.S.A.
- Diploma, National Defence College, The Joint State-Private Sector Course, Class 10, The National Defence College of Thailand (NDC 4010)

### Director Training

- Role of the Chairman Program (RCP) Class 28/2012 and Director Accreditation Program (DAP) Class 26/2004, Thai Institute of Directors Association (IOD)

### Board Member/Management in Listed Company - The Stock Exchange of Thailand : 6

- Independent Director and Chairman of the Risk Management Committee, PTT Global Chemical Public Company Limited
- Independent Director and Chairman, Nok Airlines Public Company Limited
- Independent Director and Chairman, SVI Public Company Limited
- Chairman and Chairman of the Executive Board of Directors, Thoresen Thai Agencies Public Company Limited
- Independent Director/Chairman of the Nomination and Governance Committee/Member of the Leadership Development and Compensation Committee/Member of the Strategic and Organizational Review Committee, Intouch Holdings Public Company Limited
- Independent Director and Chairman, Thaicom Public Company Limited

### Board Member/Management in Non-Listed Company - The Stock Exchange of Thailand : 3

- Chairman and Non-Executive Chairman, Mermaid Maritime Public Company Limited
- Chairman, Yuanta Securities (Thailand) Company Limited
- Chairman, AIRA Property Public Company Limited

### Position in Other Organization/Institutions : 7

- Distinguished Member of King Prajadhipok's Institute
- Member of the Eastern Economic Corridor Policy Committee (EEC)
- Chairman, Thailand Business Council for Sustainable Development (TBCSD)
- Chairman, Small and Micro Community Enterprise
- Distinguished Member of Chulalongkorn University Council
- Distinguished Member of the Suranaree University of Technology Council Office
- Council President, Dhurakij Punthit University

### Work Experiences (5 Years Past Experiences)

|                   |  |
|-------------------|--|
| 2014 - 2019       | Member of the National Legislative Assembly of Thailand  |
| 2011 - April 2018 | Chairman, PTT Global Chemical Public Company Limited   |
| 2013 - 2017       | Independent Director/Chairman of the Remuneration Committee and Member of the Enterprise Risk Management Committee, PTT Public Company Limited |
| 2014 - 2015       | Chairman of the Board of Executive Directors, Krung Thai Bank Public Company Limited   |
| 2011 - 2015       | Independent Director, Krung Thai Bank Public Company Limited   |

**Shareholding :** Spouse 271,142 shares (0.006014%) as of December 31, 2019

**Relation among Family with other Directors, Management,  
Major Shareholders of the Company or Subsidiaries :** None

### Education/Training

- Honorary Doctoral in Accounting, Kasem Bundit University
- Bachelor of Accounting (Second-class Honor), Chulalongkorn University
- Diploma in Auditing Chulalongkorn Business School, Chulalongkorn University
- Certified Public Accountant (Thailand), Federation of Accounting Professions under the Royal Patronage of his Majesty the King
- Leading Professional Services Firms, Harvard Business School, Boston, U.S.A.
- Executive Management Program, Ivey School of Business, University of Western Ontario, Canada

### Director Training

- Board Nomination and Compensation Program (BNCP) Class 7/2019/ National Director Conference "Steering Governance in a Changing World"/IOD International Trip 2017 - Attend Singapore IOD Flagship Conference "The Sustainability Imperative" and Visit Awards Winning Companies/Audit Committee Forum "The Audit Committee's Role in Compliance and Ethical Culture Oversight" and Collective Action Against Corruption Conference "Bright Spots : Lighting the way to a corruption free society/Board Matters and Trends (BMT) Class 2/2017 Financial Institution Governance Program (FGP) Class 6/2013 and Director Certification Program (DCP) Class 119/2009, Thai Institute of Directors Association (IOD)

### Board Member/Management in Listed Company - The Stock Exchange of Thailand : 4

- Independent Director and Chairman of the Audit Committee, PTT Global Chemical Public Company Limited
- Independent Director and Chairman of the Audit Committee, The Siam Commercial Bank Public Company Limited
- Independent Director/Director to the Audit Committee and Chairman of the Nomination and Remuneration Committee, Thai Solar Energy Public Company Limited
- Independent Director/Member of Audit Committee and Chairman of Sustainable Development Committee, Advanced Info Service Public Company Limited

### Board Member/Management in Non-Listed Company - The Stock Exchange of Thailand : 1

- Director, Kerry Express (Thailand) Company Limited

### Position in Other Organization/Institutions : 11

- Honorary Director in State Enterprise Policy Committee, State Enterprise Policy Office
- Chairman, Thai Institute of Directors Association (IOD)
- Commissioner and Audit Committee, The Securities and Exchange Commission
- Chairman in Advisory Committee in Auditing, The Securities and Exchange Commission
- Audit Committee Member, Mahidol University Council
- Commission Member (Accounting) and Chairman of the Audit Committee of the Office of Insurance Commission, Thailand
- Commission Member, OIC Advanced Insurance Institute
- Expert Member (Accounting) of the Committee on Dumping and Subsidy, Thailand
- Council in Private Sector Collective Action Coalition Against Corruption Council, The Private Sector Collective Action Coalition Against Corruption (CAC)
- Member of the Finance and Property Committee, King Mongkut's University of Technology Thonburi
- Commission Member, Public Sectors Audit and Evaluation Commission (PAEC)

### Work Experiences (5 Years Past Experiences)

|                   |   |
|-------------------|---|
| 2016 - April 2018 | Director to the Audit Committee, PTT Global Chemical Public Company Limited                             |
| 2012 - 2017       | Expert Member of the General Insurance Fund under the Ministry of Finance                               |
| 2014 - 2017       | President of the Federation of Accounting Professions under the Royal Patronage of His Majesty the King |

**Shareholding :** None

**Relation among Family with other Directors, Management,  
Major Shareholders of the Company or Subsidiaries :** None

## Professor Somkit Lertpaithoon

Independent Director and  
Chairman of the Corporate  
Governance Committee  
Age 60

### Appointed

April 9, 2018



## Mr. Don Wasantapruerk

Independent Director and  
Chairman of the Nomination and  
Remuneration Committee  
Age 61

### Appointed

November 1, 2015,  
April 5, 2016 (1<sup>st</sup> re-elected),  
April 5, 2019 (2<sup>nd</sup> re-elected)



### Education/Training

- Doctorate, (Droit Public Interne), The University Paris II, France
- Degree of Profound Studies, (Droit Public Interne), The University Paris II, France
- Bachelor of Laws, Thammasat University
- Barrister-at-Law, Institute of Legal Education Thai Bar Association
- Certification in Local Government, Institut International d' Administration Publique (IIAP), France
- The Executive Program in Energy Literacy for a Sustainable Future, Class 10, Thailand Energy Academy (TEA)

### Board Member/Management in Listed Company -

#### The Stock Exchange of Thailand : 1

- Independent Director and Chairman of the Corporate Governance Committee, PTT Global Chemical Public Company Limited

### Board Member/Management in Non-Listed Company -

#### The Stock Exchange of Thailand : None

#### Position in Other Organization/Institutions : 5

- Member of the B.E. 2550 Constitution Drafting Council and Member and Secretary of the Steering Committee of the B.E. 2550 Constitution Drafting Council
- Honorary Board Member, King Prajadhipok's Institute
- Reform Commission of Thailand on Process of Judgement (Police)
- Member of the National Legislative Assembly (NLA)
- Professor of Faculty of Law, Thammasat University

### Work Experiences (5 Years Past Experiences)

|                     |   |
|---------------------|---|
| Feb 2017 - Apr 2018 | Independent Director and Member of the Enterprise Risk Management Committee, PTT Public Company Limited |
| 2017                | Director, the Government Pharmaceutical Organization  |
| 2010 - 2017         | Rector, Thammasat University  |

### Shareholding : None

**Relation among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

### Education/Training

- Master of Engineering (Industrial Engineering), University of New South Wales, Sydney, Australia
- Bachelor of Engineering (Industrial Engineering), University of New South Wales, Sydney, Australia
- Seminar "Incorporation of State Investment Corporation" (July 13, 2015)
- The Executive Program in Energy Literacy for a Sustainable Future, Class 6/2015, Thailand Energy Academy (TEA)
- Thailand's 5<sup>th</sup> National Conference on Collective Action Against Corruption Tackling Corruption through Public - Private Collaboration (October 16<sup>th</sup>, 2014)

### Director Training

- Briefing on International Anti-Corruption... International Cases and Practices/Seminar "Anti-Corruption : Leadership Role of the Board in Driven the Organization toward the Draft of the Development of Corporate Governance and Enterprise Management Act .... And Good Corporate Governance/Director Accreditation Program (DAP) Class 117/2015 and Role of the Nomination and Governance Committee (RNG) Class 7/2015, Thai Institute of Directors Association (IOD)

### Board Member/Management in Listed Company -

#### The Stock Exchange of Thailand : 2

- Independent Director and Chairman of the Nomination Committee, PTT Public Company Limited
- Independent Director and Chairman of the Nomination and Remuneration Committee, PTT Global Chemical Public Company Limited

### Board Member/Management in Non-Listed Company -

#### The Stock Exchange of Thailand : None

#### Position in Other Organization/Institutions : None

### Work Experiences (5 Years Past Experiences)

|                          |   |
|--------------------------|---|
| 2009 - Present           | Self-employed   |
| Apr 2018 - Nov 2019      | Director to the Nomination and Remuneration Committee, PTT Global Chemical Public Company Limited |
| 4 Feb 2014 - 23 Dec 2018 | Member of the Corporate Governance Committee, PTT Public Company Limited                          |
| 2015 - April 2018        | Director to the Corporate Governance Committee, PTT Global Chemical Public Company Limited        |

### Shareholding : None

**Relation among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mr. Pakorn Nilprapunt

Independent Director and  
Director to the Audit Committee  
Age 51

### Appointed

April 9, 2018



## Mr. Prapas Kong-ied

Independent Director and  
Director to the Audit Committee  
Age 57

### Appointed

November 1, 2019



### Education/Training

- Master of Laws (Trade Practices Law), The University of Sydney, Australia
- Public Sector Management and Organization Change, The University of Sydney, Australia
- Bachelor of Laws, Thammasat University
- High-Level Budget Management 1<sup>st</sup> Edition, Bureau of the Budget
- Program for Chief Executive Training Course, Class 2, The Royal Thai Police
- Train the Trainers Program in Information Communication and Technology Law for the Justice Executive, Class 1, Office of the Secretary of the Electronic Transaction Commission
- Chief Executive Training Program : Leadership with Vision and Morality (AMP 64), The Office of the Civil Service Commission (List of Qualified Candidates for Training)
- East Asian Public Sector Leadership Challenges, National Graduate Institute for Policy Study, Tokyo, Japan

### Director Training

- Director Accreditation Program (DAP) Class 153/2018 Thai Institute of Directors Association (IOD)

### Board Member/Management in Listed Company –

#### The Stock Exchange of Thailand : 1

- Independent Director and Director to the Audit Committee, PTT Global Chemical Public Company Limited

### Board Member/Management in Non-Listed Company –

#### The Stock Exchange of Thailand : None

### Position in Other Organization/Institutions : 2

- Secretary-General, Office of the Council of State, the Prime Minister's Office
- Director of the Strategic Reform Office on the Promotion of the National Reform, Strategy and Cohesion

### Work Experiences (5 Years Past Experiences)

|                     |  |
|---------------------|--|
| Jun 2018 - Jan 2019 | Secretary-General, Office of the Public Sector Development Commission (OPDC) |
| 2017 - 2019         | Deputy Director, Prime Minister's Delivery Unit (PMDU)                       |
| 2015 - 2018         | Deputy Secretary-General, Office of the Council of State                     |

Shareholding : None

Relation among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries : None

### Education/Training

- Barrister-at-Law, Institute of Legal Education of the Thai Bar
- International Tax Program Certificate and Master of Laws (ITP/LL.M.), Harvard Law School, Harvard University, Massachusetts, U.S.A.
- Bachelor of Laws (Second-class Honors), Ramkhamhaeng University
- The Executive Program in Energy Literacy for a Sustainable Future, Class 6, Thailand Energy Academy (TEA)
- Capital Market Academy Leadership Program, Class 21, Capital Market Academy
- Diploma, National Defence College, The National Defence Course Class 56, National Defence College of Thailand (NDC)
- Senior Executive Certificate in Anti-Corruption Strategic Management Class 9, Sanya Dhamasakti National Anti-Corruption Institute (SDI), The National Anti-Corruption Commission Institute
- National Academy Justice, Class 21, Judicial Training Institute
- Advanced Master of Management, Graduate School of Public Administration, National Institute of Development Administration
- Finance and Fiscal Management Program for Senior Executive (FME), Class 3, The Comptroller General's Department
- Senior Executive Program for Nation-Building, Class 3, The Nation-Building Institute

### Director Training

- Anti-corruption : the Practical Guide (ACPG) Class 32/2016/ Risk Management Program for Corporate Leaders (RCL) Class 5/2016 Corporate Governance for Executives (CGE) Class 4/2015/ Director Certification Program (DCP) Class 172/2013/ Audit Committee Program (ACP) Class 44/2013/ Financial Institutions Governance Program (FGP) Class 6/2013/ Financial Statements for Directors (FSD) Class 21/2013/ Role of the Nomination and Governance Committee (RNG) Class 4/2013 and Role of the Compensation Committee (RCC) Class 16/2013, Thai Institute of Directors Association (IOD)

### Board Member/Management in Listed Company –

#### The Stock Exchange of Thailand : 3

- Director and Chairman of Corporate Governance Committee, Dhipaya Insurance Public Company Limited
- Director and Member of the Corporate Social Responsibility Committee, Siam Commercial Bank Public Company Limited
- Independent Director and Director to the Audit Committee, PTT Global Chemical Public Company Limited

### Board Member/Management in Non-Listed Company –

#### The Stock Exchange of Thailand : 1

- Chairman, National Credit Bureau Company Limited

### Position in Other Organization/Institutions : 3

- Member of the National Reform Steering Assembly
- Director-General, The State Enterprise Policy Office, Ministry of Finance
- Director, Siam Commercial Foundation

### Work Experiences (5 Years Past Experiences)

|             |  |
|-------------|--|
| 2017 - 2018 | Managing Director, Public Debt Management Office   |
| 2015 - 2018 | Director, Don Muang Tollway Public Company Limited |
| 2012 - 2018 | Director, Government Savings Bank                  |
| 2015 - 2017 | Deputy Permanent Secretary, Ministry of Finance    |
| 2015        | Inspector General, Ministry of Finance             |
| 2013 - 2015 | Director, KTB LAW Company Limited                  |
| 2013 - 2015 | Chairman, The Erawan Group Public Company Limited  |
| 2012 - 2015 | Legal Advisory, Ministry of Finance                |

Shareholding : None

Relation among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries : None

### Mr. Wittawat Svasti-xuto

Director and Director to the Nomination and Remuneration Committee  
Age 58

#### Appointed

February 19, 2018



### Major General Nithi Chungcharoen

Independent Director  
Director to the Nomination & Remuneration Committee and Director to the Corporate Governance Committee  
Age 48

#### Appointed

September 22, 2014 /

April 1, 2015 (1<sup>st</sup> re-elected)

April 9, 2018 (2<sup>nd</sup> re-elected)



#### Education/Training

- Master of Science (Industrial Engineering), The University of Rhode Island, U.S.A.
- Bachelor of Engineering (Chemical Engineering), Chulalongkorn University
- Capital Market Academy Leadership Program, Class 27/2018, Capital Market Academy
- The Executive Program in Energy Literacy for a Sustainable Future, Class 8, Thailand Energy Academy (TEA)
- Strategy and Innovation for Business in Asia (SIBA), Class 5/2016

#### Director Training

- Director Certification Program (DCP) Class 146/2011 and Financial Statements for Director (FSD) Class 12/2011, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company – The Stock Exchange of Thailand : 3

- Chief Technology and Engineering Officer, PTT Public Company Limited
- Director and Director to the Nomination and Remuneration Committee, PTT Global Chemical Public Company Limited
- Director, Member of the Nomination and Remuneration Committee and Member of the Risk Management Committee, Global Power Synergy Public Company Limited

#### Board Member/Management in Non-Listed Company – The Stock Exchange of Thailand : 1

- Chairman, PTT Energy Solutions Company Limited

Position in Other Organization/Institutions : None

#### Work Experiences (5 Years Past Experiences)

|                      |  |
|----------------------|--|
| 2017 - 2019          | Chairman, PTT Digital Solutions Company Limited  |
| 2 Apr 17 - 31 Aug 18 | Director, District Cooling System and Power Plant Company Limited  |
| 2017 - 2018          | Senior Executive Vice President, Innovation and Digital, PTT Public Company Limited                            |
| 2018                 | Director, Energy Complex Company Limited   |
| 2018                 | Director, Business Services Alliance Company Limited   |
| 1 Jan 17 - 31 Dec 17 | Senior Executive Vice President, Sustainability Management and Project Engineering, PTT Public Company Limited |
| 1 Oct 16 - 31 Dec 16 | Senior Executive Vice President, Sustainability Management, PTT Public Company Limited                         |
| 1 Jan 16 - 30 Sep 16 | Executive Vice President, Downstream Business Group Alignment, PTT Public Company Limited                      |
| 1 Aug 14 - Dec 15    | Executive Vice President, Strategy Management, Downstream Business Unit, PTT Public Company Limited            |

Shareholding : 3,415 shares (0.000076%)  
as of December 31, 2019

Relation among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries : None

#### Education/Training

- Master of Engineering (Mechanical), Stevens Institute of Technology, New Jersey, U.S.A.
- Bachelor of Science, Chulachomklao Royal Military Academy
- Peace Mediation Course
- Command and General Staff College, Class 80
- Peace Keeping Operation Course

#### Director Training

- Board that Make a Difference (BMD) Class 9/2019/IOD Talk 2/2017 “Cyber Security: Risks, Liabilities, and Best Practices”/Driving Company Success with IT Governance (ITG) Class 5/2017/Role of the Nomination and Governance Committee Class 8/2016 and Director Certification Program (DCP) Class 200/2015, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company – The Stock Exchange of Thailand : 1

- Independent Director/Director to the Nomination & Remuneration Committee and Director to the Corporate Governance Committee, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company – The Stock Exchange of Thailand : None

Position in Other Organization/Institutions : 2

- Assistant General Director, 2<sup>nd</sup> Coordination Centre, Office of Internal Security Coordination, Royal Thai Army
- Expert, Royal Thai Army

#### Work Experiences (5 Years Past Experiences)

|             |   |
|-------------|---|
| 2016 - 2018 | Deputy Defence Attaché, Canberra, Australia         |
| 2014 - 2015 | Attached to Directorate of Intelligence             |
| 2013 - 2014 | Deputy Chief of Staff, 11 <sup>th</sup> Army Circle |

Shareholding : None

Relation among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries : None

### Mrs. Watanan Petersik

Independent Director and  
Director to the Corporate  
Governance Committee  
Age 58

#### Appointed

September 22, 2014,  
April 5, 2016 (1<sup>st</sup> re-elected),  
April 5, 2019 (2<sup>nd</sup> re-elected)



### Mr. Disathat Panyarachun

Director and  
Director to the Corporate  
Governance Committee  
Age 55

#### Appointed

October 22, 2018



#### Education/Training

- AB Bryn Mawr College, Pennsylvania, U.S.A.

#### Director Training

- Director Accreditation Program (DAP) English Program Class 83/2010, Thai Institute of Directors Association (IOD)
- Bursatra Sdn. Bhd. : Mandatory Accreditation Programme (MAP) for Directors of Public Listed Companies (March 2010)
- Certificate : Role of Director, Singapore Institute of Directors Course

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 2

- Independent Director and Director to the Corporate Governance Committee, PTT Global Chemical Public Company Limited
- Independent Director and Chairwoman of Nomination and Corporate Governance Committee, CIMB Thai Bank Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 1

- Non-Executive Director, Jetanin Institute for Assisted Reproduction, Jetanin Company Limited

#### Position in Other Organization/Institutions : 5

- Standards Advisory Council, BCorp, U.S.A.
- Advisory Board, Nanyang Business School, Singapore
- Senior Moderator, Aspen Institute, U.S.A.
- Advisory Committee, Lien Centre for Social Innovation Singapore Management University
- Senior Advisor, TPG Capital Asia

#### Work Experiences (5 Years Past Experiences)

|                     |   |
|---------------------|---|
| Jan 2010 - Jan 2019 | Independent Director and Non-Executive Director, CIMB Group Sdn. Bhd.                 |
| Jan 2010 - Jan 2019 | Independent Director and Non-Executive Director, CIMB Group Holdings Berhad, Malaysia |
| 2008 - 2019         | Director, Asia Capital Advisory Pte Ltd.  |
| Jan 2016 - Nov 2017 | Director, TPG Star SF Pte Ltd.  |
| Jan 2016 - Nov 2017 | Director, TPG Growth SF Pte Ltd.  |
| Jan 2016 - Nov 2017 | Director, TPG Growth III Asia Internet Holdings Pte Ltd.                              |
| Feb 2015 - Nov 2017 | Director, TE Asia Healthcare Advisory Pte Ltd.  |
| Sep 2014 - Nov 2017 | Director, TE Asia Healthcare Partners Pte Ltd.  |
| 2010 - 2016         | Member of Audit Committee, CIMB Thai Bank Public Company Limited                      |

Shareholding : None

Relation among Family with other Directors, Management,  
Major Shareholders of the Company or Subsidiaries : None

#### Education/Training

- Master of Political Science (M.P.A.), National University, San Diego, U.S.A.
- Bachelor of Social Science, Silpakorn University
- The Executive Program in Energy Literacy for a Sustainable Future, Class 14, Thailand Energy Academy (TEA)
- Leadership Development Program for Sustainability (LDP 3), PTT Leadership and Learning Institute
- Certification of Oil Futures Program, The Oxford Princeton, U.K.

#### Director Training

- Director Certification Program (DCP) Class 206/2015, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 2

- Senior Executive Vice President, International Trading Business Unit, PTT Public Company Limited
- Director and Director to the Corporate Governance Committee, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 2

- Chairman, PTT International Trading London Ltd.
- Chairman, PTT International Trading Pte Ltd.

#### Position in Other Organization/Institutions : None

#### Work Experiences (5 Years Past Experiences)

|                          |  |
|--------------------------|--|
| 1 Nov 2011 - 19 Oct 2018 | Chairman, PTT International Trading DMCC   |
| 1 Feb 2016 - 30 Sep 2018 | Executive Vice President, International Trading, PTT Public Company Limited  |
| 1 Aug 2015 - 31 Jan 2016 | Vice President acting as Executive Vice President, International Trading, PTT Public Company Limited                       |
| 2012 - 2015              | Vice President, PTT Public Company Limited working on a Secondment as Managing Director, PTT International Trading Pte Ltd |

Shareholding : Spouse 80 shares (0.000002%)  
as of December 31, 2019

Relation among Family with other Directors, Management,  
Major Shareholders of the Company or Subsidiaries : None

### Mrs. Premrutai Vinaiphat

Director and  
Director to the Risk  
Management Committee  
Age 57

#### Appointed

February 18, 2019



### Mrs. Arawadee Photisarao

Director and  
Director to the Risk  
Management Committee  
Age 58

#### Appointed

October 22, 2018



#### Education/Training

- Master of Science in Mining Engineering (Mineral Economics), McGill University, Montreal, Canada
- Bachelor of Science (Geology), Chiang Mai University
- The Executive Program in Energy Literacy for a Sustainable Future, Class 13, Thailand Energy Academy (TEA)
- The Program of Senior Executives on Justice Administration (Class 22), Judicial Training Institute
- Leadership 4.0 Program, The ICT Society for Social Development Association
- Diploma, National Defence College, The National Defence Course Class 57/2014, National Defence College of Thailand (NDC)
- World Fiscal Systems for Oil and Gas, U.K.
- Executive Development Program "Leadership with Vision and Virtue" (Class 71), Office of the Civil Service Commission
- Development of Management Competency and Leadership Program for Talent Network "Leadership & Change", Office of the Civil Service Commission, Japan
- Top Level Energy Administration (Class 2), Ministry of Energy
- International Petroleum Management Certificate Program, U.S.A.
- Law of the Sea, Malaysia
- Managing Managers in the Energy Industry, U.S.A.

#### Director Training

- Director Certification Program (DCP) Class 269/2019, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company -

##### The Stock Exchange of Thailand : 1

- Director to the Risk Management Committee, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company -

##### The Stock Exchange of Thailand : None

#### Position in Other Organization/Institutions : 1

- Inspector General, Ministry of Energy

#### Work Experiences (5 Years Past Experiences)

|             |   |
|-------------|---|
| 2019        | Director - General, Department of Mineral Fuels, Ministry of Energy   |
| 2018        | Inspector General, Ministry of Energy   |
| 2018        | Independent Director and Member of the Corporate Governance and Social Responsibility Committee, Ratchaburi Electricity Generating Holding Public Company Limited |
| 2016 - 2018 | Deputy Director-General, Department of Mineral Fuels, Ministry of Energy  |
| 2015 - 2016 | Director of Petroleum Concession Management Bureau, Department of Mineral Fuels, Ministry of Energy   |

Shareholding : None

Relation among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries : None

#### Education/Training

- Master of Business Administration (Management Information System), The University of Dallas, U.S.A.
- Bachelor of Accounting, Thammasat University
- The Executive Program in Energy Literacy for a Sustainable Future, Class 13, Thailand Energy Academy (TEA)
- Leadership Development Program for Sustainability (LDP 3) Class 3, PTT Leadership and Learning Institute
- Breakthrough Program for Senior Executives, International Leading Business School (IMD), Switzerland
- Mitsui-HBS Global Management Academy, Harvard Business School, U.S.A.

#### Director Training

- Director Certification Program (DCP) Class 253/2018, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company -

##### The Stock Exchange of Thailand : 2

- Senior Executive Vice President, Corporate Strategy, PTT Public Company Limited
- Director and Director to the Risk Management Committee, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company -

##### The Stock Exchange of Thailand : 1

- Chairman, Sakari Resources Limited

#### Position in Other Organization/Institutions : None

#### Work Experiences (5 Years Past Experiences)

|                    |  |
|--------------------|--|
| 2017 - 2019        | Director, PTT Digital Solutions Company Limited  |
| 2017 - 30 Sep 2018 | Executive Vice President, PTT Public Company Limited working on a Secondment as Managing Director, PTT Digital Solutions Company Limited |
| 2016 - 2017        | Executive Vice President, Strategy & Portfolio Management and Director of ExpresSo Project, PTT Public Company Limited                   |
| 2013 - 2016        | Executive Vice President, Strategy & Portfolio Management, PTT Public Company Limited  |

Shareholding : 153 shares (0.000003%)  
as of December 31, 2019

Relation among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries : None

## Mr. Supattanapong Punmeechaow

Director and  
Director to the Risk  
Management Committee  
Age 60

### Appointed

September 25, 2014/  
April 5, 2016 (1<sup>st</sup> re-elected)/  
April 5, 2019 (2<sup>nd</sup> re-elected)



## Mr. Kongkrapan Intarajang

Director and  
Secretary to the Board of Directors and  
Director to the Risk Management Committee  
Age 52

### Appointed

October 1, 2019



### Education/Training

- Master of Business Administration (M.B.A.), Chulalongkorn University
- Bachelor of Engineering (Chemical Engineering), Chulalongkorn University
- Business Revolution and Innovation Network : BRAIN, Class 2/2018, The Federation of Thai Industries (F.T.I.)
- Capital Market Academy Leadership Program, Class 23/2016, Capital Market Academy
- The Rule of Law and Democracy Course (Class 3/2015), College of the Constitutional Court
- Corporate Governance Program for Directors and Executives of State Enterprises and Public Organizations (Class 12/2014), King Prajadhipok's Institute-State Enterprise Policy Office and Office of the Public Sector Development Commission
- The Executive Program in Energy Literacy for a Sustainable Future Class 4, Thailand Energy Academy (TEA)
- Oxford Energy Seminar 2013, United Kingdom
- Diploma, National Defence College, The National Defence Course Class 50, National Defence College of Thailand (NDC)
- Diploma, National Defence College, The Joint State-Private Sector Course Class 20, National Defence College of Thailand (NDC)
- Advance Management Program, INSEAD University, France

### Director Training

- Role of the Chairman Program (RCP) Class 30/2013 and Director Certification Program (DCP) Class 131/2010 Thai Institute of Directors Association (IOD)

### Board Member/Management in Listed Company -

#### The Stock Exchange of Thailand : 3

- Director and Chairman of the Enterprise Risk Management Committee, PTT Public Company Limited
- Director and Director to the Risk Management Committee, PTT Global Chemical Public Company Limited
- Chairman, Global Green Chemicals Public Company Limited

### Board Member/Management in Non-Listed Company -

#### The Stock Exchange of Thailand : None

### Position in Other Organization/Institutions : 5

- Commission Member, Strategic Transformation Committee
- Commission Member (Business Administration), Office of the Public Sector Development Commission (OPDC)
- Commission Member in the Policy Committee for Integrated Provincial and Sub-Regional Administration, Office of the Public Sector Development Commission (OPDC)
- Director, Thai Institute of Directors Association (IOD)
- President, Chulalongkorn Engineering Alumni

### Work Experiences (5 Years Past Experiences)

|                     |   |
|---------------------|---|
| Oct 2014 - Sep 2019 | Senior Executive Vice President, PTT Public Company Limited                     |
| Oct 2014 - Sep 2019 | President & Chief Executive Officer, PTT Global Chemical Public Company Limited |
| Apr 2017 - Sep 2019 | Chairman, Global Power Synergy Public Company Limited                           |
| 2014 - 2019         | Director, PTTGC International Private Limited                                   |
| Feb 2015 - Sep 2019 | Member of Kamnoetvidya Science Academy  |
| May 2015 - Sep 2019 | Honorary Member of Vidyasirimedhi Institute Council                             |
| Dec 2014 - Sep 2019 | Vice President, Thailand Swimming Association                                   |
| Nov 2014 - Sep 2019 | Member, Council of Trustees, Petroleum Institute of Thailand                    |
| Nov 2014 - Sep 2019 | Vice President, The Power of Learning Foundation                                |
| May 2015 - Mar 2018 | Committee Member, Thai Listed Companies Association                             |
| 2015 - 2018         | Vice Chairman, The Federation of Thai Industries                                |
| Nov 2014 - Jul 2017 | Vice Chairman, Vinythai Public Company Limited                                  |

**Shareholding :** 100,000 shares (0.002218%) as of December 31, 2019

**Relation among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

### Education/Training

- Doctor of Philosophy (Ph.D.) in Chemical Engineering, University of Houston, U.S.A.
- Bachelor of Engineering (Chemical Engineering) (Second-class Honors), Chulalongkorn University
- Leadership Development Program (LDP 3) Class 4, PTT Leadership and Learning Institute
- The Executive Program in Energy Literacy for a Sustainable Future, Class 14, Thailand Energy Academy (TEA)
- Diploma, National Defence College, The National Defence Course Class 60, National Defence College of Thailand (NDC)
- Breakthrough Program for Senior Executives, IMD Business School

### Director Training

- Role of the Chairman Program (RCP) Class 21/2009 and Director Certification Program (DCP) Class 119/2009, Thai Institute of Directors Association (IOD)

### Board Member/Management in Listed Company -

#### The Stock Exchange of Thailand : 4

- Senior Executive Vice President reporting to Chief Operating Officer, Downstream Petroleum Business Group, PTT Public Company Limited
- Director and Secretary to the Board of Directors/Director to the Risk Management Committee and Chief Executive Officer, PTT Global Chemical Public Company Limited
- Director and Member of the Risk Management Committee, Global Power Synergy Public Company Limited
- Director, Global Green Chemicals Public Company Limited

### Board Member/Management in Non-Listed Company -

#### The Stock Exchange of Thailand : 4

- Chairman, PTTGC America Corporation
- Chairman, PTTGC America LLC
- Director, PTTGC International Private Limited
- Director, PTTGC International (USA) Inc.

### Position in Other Organization/Institutions : 7

- Member, The Petroleum Institute of Thailand (PTIT)
- Co-Chairman, France-Thailand Business Forum
- Committee Member of Sustainable Energy Foundation
- Committee Member of Kamnoetvidya Science Academy
- Honorary Member of Vidyasirimedhi Institute Council
- Member of the Thailand Energy Academy
- Vice President (Supporting), Thailand Swimming Association

### Work Experiences (5 Years Past Experiences)

|                     |  |
|---------------------|--|
| May 2017 - Jan 2020 | Director, Thai Tank Terminal Limited   |
| Apr 2017 - Sep 2019 | Chief Operating Officer - Upstream Petrochemical Business, PTT Global Chemical Public Company Limited    |
| Jul 2015 - Sep 2019 | Director and President & CEO, PTTGC America Corporation  |
| Apr 2015 - Sep 2019 | Director, PTTGC Innovation America Corporation   |
| Feb 2015 - Sep 2019 | Director, PTTGC International (Netherlands) B.V.   |
| Jan 2015 - Sep 2019 | Director, Vencorex Holding   |
| Nov 2008 - Sep 2019 | Director, Emery Oleochemicals (M) Sdn. Bhd.  |
| Nov 2008 - Sep 2019 | Director, Emery Specialty Chemicals Sdn. Bhd.  |
| Sep 2014 - Dec 2018 | Director, NatureWorks LLC  |
| Sep 2014 - Dec 2018 | Director, PTTGC International (USA) Inc.   |
| Oct 2014 - Mar 2017 | Executive Vice President - International Business Operations, PTT Global Chemical Public Company Limited |

**Shareholding :** None

**Relation among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

# GC EXECUTIVES



**6. Miss Duangkamol Settanung**  
Executive Vice President,  
Finance and Accounting

**7. Mrs. Warawan Tippawanich**  
Executive Vice President,  
Corporate Strategy

**8. Mr. Saroj Putthammawong**  
Executive Vice President,  
Marketing, Commercial and Supply

**9. Mr. Narongsak Jivakanun**  
Executive Vice President,  
International Business Operations

**10. Mr. Pirun Krimwongrut**  
Acting Executive Vice President,  
Organizational Effectiveness

**11. Mr. Athavuth Vikitsreth**  
Executive Vice President,  
External Affairs

**12. Mr. Amorn Putiphrawan**  
Senior Vice President,  
Internal Audit

**13. Mr. Chaya Chandavasul**  
Senior Vice President,  
Sustainability and Corporate Branding



2

**1. Mr. Kongkrapan Intarajang**

Chief Executive Officer



3

**2. Mr. Patiparn Sukorndhaman**

President

**3. Mr. Varit Namwong**

Chief Operating Officer –  
Center of Excellence

**4. Mr. Boonchai Chunhawiksit**

Acting Senior Executive Vice President,  
Upstream Petrochemical Business

**5. Mr. Wiboon Chuchepchukamon**

Acting Senior Executive Vice President, Downstream Petrochemical Business  
and Acting Senior Vice President, Green Chemicals Business Unit



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**14. Mr. Thitipong Jurapornsiridee**

Senior Vice President,  
Corporate Finance and Strategy

**15. Mrs. Pilasphan Udomjarumanee**

Senior Vice President,  
Corporate Secretary and Legal and Company Secretary

# GC EXECUTIVES

16



18



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17

**16. Mr. Pukpong Wungrattanasopon**  
Acting Executive Vice President,  
Group Performance Center – Olefins



19

**17. Mr. Ratchada Sawasdirak**  
Senior Vice President,  
Group Performance Center –  
Refinery and Shared Facilities

**18. Mr. Anutin Chuaypen**  
Senior Vice President,  
Group Performance Center – Aromatics

**19. Mr. Supasit Tongsupachok**  
Senior Vice President,  
Group Performance Center – Utilities

**20. Mr. Pornsak Mongkoltrirat**  
Acting Executive Vice President,  
Polymers Business Unit

**21. Mr. Kumpol Chaikitkosi**  
Senior Vice President,  
EO-Based Performance Business Unit

**22. Mr. Paisarn Sarapee**  
Senior Vice President,  
Phenol Business Unit

**23. Mrs. Chananchida Wiboonkanarak**  
Senior Vice President,  
Downstream Strategy and Business Development



26

**24. Mrs. Jeeranee Pimthanothai**  
Senior Vice President,  
Technical, Engineering and Maintenance

**25. Mr. Khomson Piyawattanaviroj**  
Senior Vice President, CAPEX Excellence

**26. Mr. Wirat Boonbumrungchai**  
Senior Vice President, Quality, Safety,  
Occupational Health and Environment



29

**27. Mrs. Chatsuda Kanjanarat**  
Senior Vice President,  
Transformation Excellence

**28. Mrs. Wilawan Songjaroen**  
Senior Vice President, Procurement

**29. Mr. Kevin Thomas Corby**  
Senior Vice President, Science and Innovation

# GC EXECUTIVES

## Mr. Kongkrapan Intarajang

Chief Executive Officer

Age 52

### Appointed

October 1, 2019

#### Education/Training

- Doctor of Philosophy (Ph.D.) in Chemical Engineering, University of Houston, U.S.A.
- Bachelor of Engineering (Chemical Engineering), (Second-class Honors), Chulalongkorn University
- Leadership Development Program (LDP) 3 Class 4, PTT Leadership and Learning Institute
- The Executive Program in Energy Literacy for a Sustainable Future Class 14, Thailand Energy Academy (TEA)
- Diploma, National Defence College, The National Defence Course Class 60, National Defence College of Thailand (NDC)
- Breakthrough Program for Senior Executives, IMD Business School
- Role of the Chairman Program (RCP) Class 21/2009 and Director Certification Program (DCP) Class 119/2009, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 4

- Senior Executive Vice President Reporting to Chief Operating Officer, Downstream Petroleum Business Group, PTT Public Company Limited
- Director and Secretary to the Board of Directors/Director to the Risk Management Committee and Chief Executive Officer, PTT Global Chemical Public Company Limited
- Director and Member of the Risk Management Committee, Global Power Synergy Public Company Limited
- Director, Global Green Chemicals Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 4

- Chairman, PTTGC America Corporation
- Chairman, PTTGC America LLC
- Director, PTTGC International Private Limited
- Director, PTTGC International (USA) Inc.

#### Position in Other Organization/Institutions : 7

- Member, The Petroleum Institute of Thailand (PTIT)
- Co-Chairman, France-Thailand Business Forum
- Committee Member of Sustainable Energy Foundation
- Committee Member of Kamnoetvidya Science Academy
- Honorary Member of Vidyasirimedhi Institute Council
- Member of the Thailand Energy Academy
- Vice President (Supporting), Thailand Swimming Association

#### Work Experience (5 Years Past Experience)

|                     |  |
|---------------------|--|
| May 2017 - Jan 2020 | Director, Thai Tank Terminal Limited   |
| Apr 2017 - Sep 2019 | Chief Operating Officer - Upstream Petrochemical Business, PTT Global Chemical Public Company Limited    |
| Jul 2015 - Sep 2019 | Director and President & CEO, PTTGC America Corporation  |
| Apr 2015 - Sep 2019 | Director, PTTGC Innovation America Corporation   |
| Feb 2015 - Sep 2019 | Director, PTTGC International (Netherlands) B.V.   |
| Jan 2015 - Sep 2019 | Director, Vencorex Holding   |
| Nov 2008 - Sep 2019 | Director, Emery Oleochemicals (M) Sdn. Bhd.  |
| Nov 2008 - Sep 2019 | Director, Emery Specialty Chemicals (M) Sdn. Bhd.  |
| Sep 2014 - Dec 2018 | Director, NatureWorks LLC  |
| Sep 2014 - Dec 2018 | Director, PTTGC International (USA) Inc.   |
| Oct 2014 - Mar 2017 | Executive Vice President - International Business Operations, PTT Global Chemical Public Company Limited |

**Shareholding :** None

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mr. Patiparn Sukorndhaman

President

Age 58

### Appointed

October 1, 2019

#### Education/Training

- Master of Business Administration (Finance), The American University, U.S.A.
- Bachelor of Arts in Political Science (Public Administration - Public Finance), (Second-class Honors), Chulalongkorn University
- Diploma, National Defence College, The National Defence Course Class 59, National Defence College of Thailand (NDC), 2016
- The Executive Program in Energy Literacy for a Sustainable Future Class 7, Thailand Energy Academy (TEA), 2015
- Leadership Development Program for Sustainability (LDP) 3, PTT Leadership and Learning Institute, 2014
- Breakthrough Program for Senior Executives, IMD Executive Development Services, Switzerland, 2014
- PTT Executive Leadership Program, General Electric, GE, U.S.A., 2012
- Certification Program for Senior Management 5 (Ex-PSM 5), Fiscal Policy Research Institute Foundation, 2009
- Director Certification Program (DCP) Class 73/2006, Thai Institute of Directors Association (IOD)
- Graduate Diploma in Public Law and Management (PLM 8), King Prajadhipok's Institute

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 2

- President, PTT Global Chemical Public Company Limited
- Director, Director to the Nomination and Remuneration Committee and Director to the Risk Management Committee, Global Green Chemicals Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 7

- Chairman, GC Marketing Solutions Company Limited
- Chairman, GC Polyols Company Limited
- Chairman, Solution Creation Company Limited
- Chairman, HMC Polymers Company Limited
- Chairman, GC-M PTA Company Limited
- Chairman, Thai PET Resin Company Limited
- Director, PTT Asahi Chemical Company Limited

#### Work Experience (5 Years Past Experience)

|                           |   |
|---------------------------|---|
| 2 Jun 2017 - 12 Nov 2019  | Chairman, GC Oxirane Company Limited  |
| 22 Jan 2016 - 30 Sep 2019 | Chairman, GC Glycol Company Limited   |
| 1 Jan 2012 - 30 Sep 2019  | Director, PTT Phenol Company Limited  |
| 1 Feb 2016 - 6 May 2019   | Chairman, GC Styrenics Company Limited  |
| 1 Jan 2016 - 30 Sep 2019  | Chief Operating Officer - Downstream Petrochemical Business, PTT Global Chemical Public Company Limited         |
| 2015 - Jul 2017           | Director and Director to the Nomination and Remuneration Committee, Global Power Synergy Public Company Limited |
| Oct 2009 - 20 Jan 2016    | Director, Thai Fatty Alcohols Company Limited   |
| Sep 2012 - 2015           | Director, PTT Chemical International Private Limited  |
| 19 Oct 2011 - 31 Dec 2015 | Executive Vice President - Finance and Accounting, PTT Global Chemical Public Company Limited                   |
| 2011 - 31 Jan 2015        | Director, PTT ICT Solutions Company Limited   |
| 2009 - 2014               | Director, Bio Creation Company Limited  |

**Shareholding :** None

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mr. Varit Namwong

Chief Operating Officer –  
Center of Excellence  
Age 56

### Appointed

October 1, 2016

#### Education/Training

- Master of Business Administration (International Program), Ramkhamhaeng University
- Bachelor of Business Administration, Assumption Business Administration College
- Diploma, National Defence College, The National Defence Course Class 61, National Defence College of Thailand (NDC), 2018
- The Executive Program in Energy Literacy for a Sustainable Future Class 10, Thailand Energy Academy (TEA), 2017
- Advanced Human Resource Executive Program, The Stephen M. Ross School of Business, University of Michigan, 2014
- Leadership Development Program for Sustainability (LDP) 3, PTT Leadership and Learning Institute, 2014
- Director Certification Program (DCP) Class 160/2012, and Director Accreditation Program (DAP) Class 91/2011, Thai Institute of Directors Association (IOD)
- Senior Executive Program (SEP), Sasin Graduate Institute of Business Administration of Chulalongkorn University

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Chief Operating Officer - Center of Excellence, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 6

- Chairman, GC Maintenance and Engineering Company Limited
- Chairman, NPC Safety and Environmental Service Company Limited
- Director, GC Marketing Solutions Company Limited
- Director, HMC Polymers Company Limited
- Director, PTTGC America Corporation
- Director, PTTGC America LLC

#### Work Experience (5 Years Past Experience)

|                           |   |
|---------------------------|---|
| 21 Dec 2016 - 30 Sep 2019 | Director, PTT Energy Solutions Company Limited  |
| 5 Apr 2012 - 31 Jan 2019  | Director, Sport Services Alliance Limited   |
| 19 Oct 2011 - 30 Aug 2016 | Executive Vice President - Organizational Effectiveness, PTT Global Chemical Public Company Limited |
| 2014 - 2016               | Director, Vencorex Holding  |
| 2011 - 2016               | Director, Eastern Fluid Transport Company Limited   |
| 2011 - 2016               | Director, PTT ICT Solutions Company Limited   |
| 2011 - 2016               | Director, Solution Creation Company Limited   |
| 2016                      | Director, TOC Glycol Company Limited  |
| 2014                      | Director, Myriant Corporation   |
| 2011 - 2014               | Director, Thai Styrenics Company Limited  |

**Shareholding :** 108,939 shares (0.002416%) as of December 31, 2019

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mr. Boonchai Chunhawiksit

Acting Senior Executive Vice President,  
Upstream Petrochemical Business  
Age 59

### Appointed

October 1, 2019

#### Education/Training

- Master of Business Administration, Thammasat University
- Bachelor of Engineering (Electrical Engineering), King Mongkut's Institute of Technology (North Bangkok)
- Senior Executive Program (SEP), Sasin Graduate Institute of Business Administration of Chulalongkorn University
- Director Certification Program (DCP) Class 244/2017, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 2

- Acting Senior Executive Vice President, Upstream Petrochemical Business, PTT Global Chemical Public Company Limited
- Director, Global Power Synergy Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 5

- Chairman, GC Estate Company Limited
- Director, GC Glycol Company Limited
- Director, GC Maintenance and Engineering Company Limited
- Director, HMC Polymers Company Limited
- Director and Executive Committee, Thai Tank Terminal Limited

#### Work Experience (5 Years Past Experience)

|                          |   |
|--------------------------|---|
| 1 Jan 2017 - 30 Sep 2019 | Senior Vice President - Group Performance Center, Olefins, PTT Global Chemical Public Company Limited |
| 1 Oct 2016 - 31 Dec 2016 | Vice President - Group Performance Center, Olefins, PTT Global Chemical Public Company Limited        |
| 1 Oct 2015 - 30 Sep 2016 | Vice President, Olefins Plant 2, PTT Global Chemical Public Company Limited                           |
| 2015                     | Vice President, GPC Strategy & Business Development, PTT Global Chemical Public Company Limited       |

**Shareholding :** 40,000 shares (0.000887%) as of December 31, 2019

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mr. Wiboon Chuhepchunkamon

Acting Senior Executive Vice President,  
Downstream Petrochemical Business/  
Acting Senior Vice President,  
Green Chemicals Business Unit

Age 57

### Appointed

October 1, 2019

#### Education/Training

- Master of Management, Sasin Graduate Institute of Business Administration of Chulalongkorn University
- Master of Science (Petroleum and Petrochemical), Petroleum and Petrochemical College, Chulalongkorn University
- Bachelor of Engineering (Electrical Engineering), Chulalongkorn University
- The Executive Program in Energy Literacy for a Sustainable Future Class 13, Thailand Energy Academy (TEA), 2019
- Director Certification Program (DCP) Class 219/ 2016, Thai Institute of Directors Association (IOD)
- Stanford – NUS Executive Program in International Management, the Republic of Singapore
- Harvard – Leadership Development, Shanghai, the People's Republic of China

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 2

- Acting Senior Executive Vice President, Downstream Petrochemical Business/Acting Senior Vice President, Green Chemicals Business Unit, PTT Global Chemical Public Company Limited
- Director, Vice Chairman of the Board of Directors and Member of the Nomination and Remuneration Committee, Vinythai Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 10

- Chairman, GC Glycol Company Limited
- Chairman, GC Oxirane Company Limited
- Director, PTT Phenol Company Limited
- Director, Solution Creation Company Limited
- Director, GC Marketing Solutions Company Limited
- Director, GC-M PTA Company Limited
- Director, HMC Polymers Company Limited
- Director, Kuraray GC Advanced Materials Company Limited
- Chairman, Revolve Group Limited
- Director, Thai PET Resin Company Limited

#### Working Experiences (5 Years Past Experience)

- 7 May 2019 - 10 Nov 2019 Chairman, GC Styrenics Company Limited
- 1 Jan 2018 - 31 Oct 2019 Chairman, GC Logistics Solutions Company Limited
- 1 Jan 2018 - 31 Oct 2019 Chairman, PL Global Transport Company Limited
- 1 Jan 2018 - 30 Sep 2019 Senior Vice President - Polymers Business Unit, PTT Global Chemical Public Company Limited
- 11 Jan 2018 - 6 May 2019 Director, GC Styrenics Company Limited
- 1 Jul 2017 - 31 Dec 2017 Senior Vice President - Downstream Petrochemical Business, PTT Global Chemical Public Company Limited
- 22 Jan 2016 - 15 Jul 2017 Director and Managing Director, TOC Glycol Company Limited
- 1 Jan 2016 - 30 Jun 2017 Senior Vice President - EO-Based Performance Business Unit, PTT Global Chemical Public Company Limited
- 15 Feb 2013 - 30 Sep 2015 Vice President, Production - Olefins 2, PTT Global Chemical Public Company Limited

**Shareholding :** Spouse 198 shares (0.000004) as of December 31, 2019

#### Relation among Family with other Directors, Management,

**Major Shareholders of the Company or Subsidiaries :** None

## Miss Duangkamol Settanung

Executive Vice President,  
Finance and Accounting  
Age 60

### Appointed

November 1, 2015

#### Education/Training

- Master of Business Administration, Thammasat University
- Bachelor of Science (Statistics), (First-class Honors), Kasetsart University
- Capital Market Academy Leadership Program Class 26, Capital Market Academy
- Director Certification Program (DCP) Class 155/2012, Thai Institute of Directors Association (IOD)
- Leadership Development Program for Sustainability (LDP) 3, PTT Leadership and Learning Institute, 2014
- Certificate Program for GE : PTT Executive Program, GE, U.S.A., 2012
- Accounting Standard-Business Combination, 2019

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 3

- Senior Executive Vice President, PTT Public Company Limited
- Executive Vice President, Finance and Accounting, PTT Global Chemical Public Company Limited
- Director and Chairperson of the Business Advisory Committee, Vinythai Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 9

- Chairman, GC Treasury Center Company Limited
- Director, PTT Phenol Company Limited
- Director, GC Polyols Company Limited
- Director, PTTGC International Private Limited
- Director, PTTGC America Corporation
- Director, PTTGC America LLC
- Director, Emery Oleochemicals (M) Sdn. Bhd.
- Director, Emery Specialty Chemicals Sdn. Bhd.
- Director, PTTGC International (USA) Inc.

#### Work Experiences (5 Years Past Experiences)

- Jun 2017 - Nov 2019 Director, GC Oxirane Company Limited
- Oct 2011 - Nov 2015 Senior Executive Vice President - Corporate Accounting & Finance, IRPC Public Company Limited
- Feb 2015 - Nov 2015 Director, IRPC-PCC Company Limited
- Nov 2014 - Jun 2015 Director, PTT Polymer Marketing Company Limited
- Jun 2013 - Nov 2015 Director, IRPC Clean Power Company Limited
- Dec 2012 - Dec 2015 Director, UBE Chemicals (Asia) Public Company Limited
- Feb 2012 - Nov 2015 Director, IRPC Energy Company Limited
- Dec 2011 - Nov 2015 Director, IRPC A&L Company Limited
- Nov 2011 - Nov 2015 Director, Thai ABS Company Limited
- Nov 2011 - Nov 2015 Director, IRPC Oil Company Limited
- Nov 2011 - Nov 2015 Director, IRPC Polyol Company Limited

**Shareholding :** None

#### Relation among Family with other Directors, Management,

**Major Shareholders of the Company or Subsidiaries :** None

## Mr. Athavuth Vikitsreth

Executive Vice President,  
External Affairs  
Age 60

### Appointed

October 1, 2013

#### Education/Training

- Bachelor of Business Administration (BBA), Abilene Christian University, Texas, U.S.A.
- The Programme of Senior Executives on Justice Administration Batch 22, Judicial Training Center, Court of Justice, 2017
- The Executive Program in Energy Literacy for a Sustainable Future Class 8, Thailand Energy Academy (TEA), 2016
- Capital Market Academy Leadership Program Class 20, Capital Market Academy, 2015
- Administrative Justice for Executives Class 4, The Administrative Court of Thailand, 2012
- Diploma, National Defence College, The Joint State-Private Sector Course Class 23, National Defence College of Thailand (NDC), 2010
- Corporate Governance for Directors and Senior Executive of State Enterprises and Public Organizations Class 2, Public Director Institute (PDI), 2009
- Advance Certificate Course in Politics and Governance in Democratic System for Executives Class 12, King Prajadhipok's Institute, 2008
- Monitoring the System of Internal Control and Risk Management (MIR) Class 5/2009
- Monitoring the Internal Audit Function (MIA) Class 5/2009
- Director Certification Program (DCP) Class 106/2008, Thai Institute of Directors Association (IOD)
- Audit Committee Program (ACP) Class 24/2008, Thai Institute of Directors Association (IOD)
- The Program of World Petrochemical Conference 2006 & Visit GE BCT (U.S.A.)

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Executive Vice President, External Affairs, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : None

#### Position in Other Organization/Institutions : 1

- Director/Director to the Internal Audit Committee, Office of the National Broadcasting and Telecommunications Commission (NBTC)

#### Work Experience (5 Years Past Experience)

|             |   |
|-------------|---|
| 2018        | Senior Executive Vice President - Special Affairs and Public Collaboration reporting to Chief Executive Officer and President, PTT Public Company Limited |
| 2017 - 2018 | Senior Executive Vice President - Government Relations reporting to Chief Executive Officer and President, PTT Public Company Limited                     |
| 2016 - 2017 | Advisor, Government Relations reporting to Chief Executive Officer and President, PTT Public Company Limited  |
| 2013 - 2016 | Executive Vice President - External Affairs, PTT Global Chemical Public Company Limited   |

#### Shareholding : None

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mrs. Warawan Tippawanich

Executive Vice President,  
Corporate Strategy  
Age 56

### Appointed

October 1, 2019

#### Education/Training

- Master of Business Administration, Chulalongkorn University
- Bachelor of Science (Chemical Engineering), Chulalongkorn University
- Board Matters and Trends (BMT) Class 2/2017
- Company Secretary Program (CSP) Class 57/2014
- Board Reporting Program (BRP) Class 15/2014
- Company Reporting Program (CRP) Class 10/2014
- Director Certification Program (DCP) Class 190/2014, Thai Institute of Directors Association (IOD)
- Leadership Development Program (LDP) 2 and (LDP) 3 PTT Leadership and Learning Institute

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Executive Vice President, Corporate Strategy, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 8

- Director, GC-M PTA Company Limited
- Director, Thai PET Resin Company Limited
- Director, GC Polyols Company Limited
- Director, GC Ventures Company Limited
- Director, Solution Creation Company Limited
- Director, PTTGC America Corporation
- Director, PTTGC America LLC
- Director, GC Ventures America Corporation

#### Work Experience (5 Years Past Experience)

|                          |   |
|--------------------------|---|
| Jan 2015 - 11 Nov 2019   | Director, GC Glycol Company Limited   |
| Sep 2017 - 14 Sep 2019   | Director, Sarn Palung Social Enterprise Company Limited   |
| 1 Jan 2015 - 30 Sep 2019 | Senior Vice President - Corporate Affairs and Corporate Secretary, PTT Global Chemical Public Company Limited |
| Jan - Dec 2014           | Vice President - Corporate Governance and Corporate Secretary, PTT Global Chemical Public Company Limited     |

#### Shareholding : None

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

**Mr. Narongsak Jivakanun**  
Executive Vice President,  
International Business Operations  
Age 51

**Appointed**

October 1, 2019

**Education/Training**

- Master of Science (Chemical Engineering), Oregon State University, Oregon, U.S.A.
- Bachelor of Engineering (Chemical Engineering), Chulalongkorn University
- TLCA Leadership Development Program (LDP) Class 1, 2013, Thai Listed Companies Association (TLCA) and International Institute for Management Development (IMD)
- The Executive Program in Energy Literacy for a Sustainable Future Class 8, Thailand Energy Academy (TEA)
- Director Certification Program (DCP) Class 165/2012, Thai Institute of Directors Association (IOD)

**Board Member/Management in Listed Company –**

**The Stock Exchange of Thailand : 1**

- Executive Vice President, International Business Operations, PTT Global Chemical Public Company Limited

**Board Member/Management in Non-Listed Company –**

**The Stock Exchange of Thailand : 13**

- Chairman, GC Ventures Company Limited
- Chairman, GC Ventures America Corporation
- Director and Managing Director, PTTGC International Private Limited
- Director and Managing Director, PTTGC America Corporation
- Director, PTTGC America LLC
- Director, PTTGC Innovation America Corporation
- Director and Managing Director, PTTGC International (USA) Inc.
- Director, NatureWorks LLC
- Director, PTTGC International (Netherlands) B.V.
- Director, Vencorex Holding
- Director and Executive Committee, Emery Oleochemicals (M) Sdn. Bhd.
- Director and Executive Committee, Emery Specialty Chemicals Sdn. Bhd.
- Director, Soem Kit Textile Company Limited

**Work Experience (5 Years Past Experience)**

- |                           |   |
|---------------------------|---|
| 21 Sep 2017 - 21 Nov 2019 | Director, Vice Chairman and Director to the Nomination and Remuneration Committee, Vinythai Public Company Limited  |
| 2 Jun 2017 - 9 Nov 2019   | Director, GC Polyols Company Limited  |
| 18 Feb 2016 - 14 Oct 2019 | Director and Director to the Risk Management Committee, Global Green Chemicals Public Company Limited   |
| 23 Jan 2018 - 14 Oct 2019 | Chairman, GC Estate Company Limited   |
| 11 Apr 2016 - 30 Sep 2019 | Director, PTT Phenol Company Limited  |
| 1 Jan 2017 - 30 Sep 2019  | Executive Vice President - Corporate Strategy, PTT Global Chemical Public Company Limited   |
| 3 Sep 2017 - 31 Jan 2018  | Chairman, PTT MCC Biochem Company Limited   |
| 25 Nov 2016 - 26 Jul 2017 | Director, PTT Digital Solutions Company Limited   |
| 13 Jan 2011 - 14 Jul 2017 | Director, Myriant Corporation   |
| 1 Feb 2016 - 28 Feb 2017  | Director, PTT Chemical International Private Limited  |
| 1 Feb 2016 - 28 Feb 2017  | Director, PTT Chemical International (Asia Pacific ROH) Company Limited   |
| 1 Feb 2016 - 31 Dec 2016  | Senior Vice President - Corporate Strategy, PTT Global Chemical Public Company Limited  |
| 2 Apr 2015 - 16 Nov 2016  | Director, Emery Oleochemicals (M) Sdn. Bhd. Director, Emery Specialty Chemicals Sdn. Bhd.   |
| 10 Nov 2010 - 11 Apr 2016 | Director, Bio Spectrum Company Limited  |
| 1 Oct 2014 - 31 Jan 2016  | Senior Vice President - International Strategy and Business Development Reporting to Executive Vice President - International Business Operations, PTT Global Chemical Public Company Limited |
| 1 Jan 2010 - 31 Jan 2016  | Chief Executive Officer, PTT Chemical International Private Limited   |
| 1 Jan 2010 - 31 Jan 2016  | Chief Executive Officer, PTT Chemical International (Asia Pacific ROH) Company Limited  |
| 15 Dec 2011 - 30 Jan 2015 | Director, PTTGC International (Netherlands) B.V.  |
| 22 May 2012 - 26 Jan 2015 | Director, Vencorex Holding  |
| 3 Mar 2011 - 23 Oct 2014  | Director, Bio Creation Company Limited  |

**Shareholding :** None

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

**Mr. Pirun Krimwongrut**  
Acting Executive Vice President,  
Organizational Effectiveness  
Age 51

**Appointed**

October 1, 2019

**Education/Training**

- Master of Engineering Science (Electrical Engineering), University of New South Wales, Australia
- Bachelor of Engineering (Electrical Engineering), (2<sup>nd</sup> Class Honors), Khon Kaen University
- Director Certification Program (DCP) Class 257/2018, Thai Institute of Directors Association (IOD)
- Leadership Development Program (LDP) 1, PTT Leadership and Learning Institute

**Board Member/Management in Listed Company –**

**The Stock Exchange of Thailand : 1**

- Acting Executive Vice President, Organizational Effectiveness, PTT Global Chemical Public Company Limited

**Board Member/Management in Non-Listed Company –**

**The Stock Exchange of Thailand : 4**

- Director, GC Styrenics Company Limited
- Director, GC Estate Company Limited
- Director, PTT Digital Solutions Company Limited
- Director, Sport Services Alliance Company Limited

**Work Experience (5 Years Past Experience)**

- |                          |   |
|--------------------------|---|
| Mar 2018 - Dec 2019      | Director, Thai Tank Terminal Limited  |
| Mar 2018 - Oct 2019      | Director, Eastern Fluid Transport Company Limited   |
| 1 Apr 2018 - 30 Sep 2019 | Senior Vice President - Group Performance Center - Utilities, PTT Global Chemical Public Company Limited                          |
| 1 Sep 2017 - 31 Mar 2018 | Acting Senior Vice President - Group Performance Center - Utilities, PTT Global Chemical Public Company Limited                   |
| 2015 - 2017              | Vice President - GPC Strategy & Business Development, Upstream Petrochemical Business, PTT Global Chemical Public Company Limited |
| 2014 - 2015              | Vice President - Technical Standard and Policy, PTT Global Chemical Public Company Limited  |

**Shareholding :** 27,033 shares (0.0006%) as of December 31, 2019

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mr. Saroj Putthammawong

Executive Vice President,  
Marketing, Commercial and Supply  
Age 51

### Appointed

October 1, 2019

#### Education/Training

- Master of Business Administration, Thammasat University
- Bachelor of Engineering (Chemical Engineering), Chulalongkorn University
- The Executive Program in Energy Literacy for a Sustainable Future Class 11/2018, Thailand Energy Academy (TEA)
- Director Certification Program (DCP) Class 220/2016, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Executive Vice President, Marketing, Commercial and Supply, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 5

- Director, GC Glycol Company Limited
- Director, GC Marketing Solutions Company Limited
- Director, GC Oxirane Company Limited
- Director, GC Treasury Center Company Limited
- Executive Committee Member, HMC Polymers Company Limited

#### Work Experience (5 Years Past Experience)

- 1 Oct 2015 - 30 Sep 2019 Senior Vice President - Marketing, Commercial and Supply, PTT Global Chemical Public Company Limited
- 2017 - 2019 Director, GC Logistics Solutions Company Limited
- 18 Nov 2015 - 8 Apr 2018 Director, Solution Creation Company Limited
- 21 Dec 2015 - 2 Mar 2018 Director, Thai Tank Terminal Limited
- 1 Jul - 30 Sep 2015 Vice President - Marketing Strategy, PTT Global Chemical Public Company Limited
- 1 Feb 2013 - 30 Jun 2015 Vice President - Supply Sourcing, PTT Global Chemical Public Company Limited

**Shareholding :** 4,900 shares (0.000109%) as of December 31, 2019

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mr. Amorn Putiphawan

Senior Vice President,  
Internal Audit  
Age 56

### Appointed

January 1, 2018

#### Education/Training

- Master of Engineering (Chemical Engineering), Chulalongkorn University
- Bachelor of Science (Fuel Technology), Chulalongkorn University
- PTT Group Leadership Development Program
- Leadership Development Program (LDP) 2
- Leadership Development Program (LDP) 1

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, Internal Audit, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : None

#### Work Experience (5 Years Past Experience)

- 1 Oct 2017 - 31 Dec 2017 Vice President reporting to Chief Executive Officer and President, PTT Global Chemical Public Company Limited
- 16 Jan 2014 - 30 Sep 2017 Vice President - Corporate Risk Management and Internal Control System, PTT Global Chemical Public Company Limited

**Shareholding :** None

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mr. Chaya Chandavasu

Senior Vice President,  
Sustainability and Corporate Branding  
Age 46

### Appointed

October 1, 2019

#### Education/Training

- Doctor of Chemical Engineering, New Jersey Institute of Technology, U.S.A.
- Master of Chemical Engineering, New Jersey Institute of Technology, U.S.A.
- Bachelor of Science (Chemistry), (1<sup>st</sup> Class Honors), Mahidol University
- Director Certification Program (DCP) Class 152/2011, Thai Institute of Directors Association (IOD)
- Advanced Senior Executive Program, Sasin & Kellogg School of Management, 2008

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, Sustainability and Corporate Branding, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 3

- Director, GC Ventures Company Limited
- Director, GC Ventures America Corporation
- Director, Sarn Palung Social Enterprise Company Limited

#### Work Experience (5 Years Past Experience)

- 23 May 2018 - 30 Oct 2019 Managing Director, GC Ventures Company Limited
- 27 Jan 2016 - 30 Sep 2019 Director, Solution Creation Company Limited
- 1 Nov 2015 - 30 Sep 2019 Senior Vice President - Science and Innovation, PTT Global Chemical Public Company Limited
- 2013 - 2019 Chairman, Auria BioChemicals Company Limited
- 2016 - 2019 Director, PTTGC Innovation America Corporation
- 2014 - 2015 Vice President - Innovation Strategy & Management, PTT Global Chemical Public Company Limited
- 2013 - 2014 Vice President - Strategy Initiatives International Business, PTT Chemical International (Asia Pacific ROH) Limited

**Shareholding :** None

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mr. Thitipong Jurapornsiridee

Senior Vice President,  
Corporate Finance and Strategy  
Age 50

### Appointed

July 1, 2019

#### Education/Training

- Master of Business Administration, Thammasat University
- Bachelor of Engineering (Electrical Engineering), Chulalongkorn University
- Director Certification Program (DCP) Class 267/2018, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, Corporate Finance and Strategy, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 3

- Director, GC Oxirane Company Limited
- Director, PTT Asahi Chemical Company Limited
- Director, Vencorex Holding

#### Work Experience (5 Years Past Experience)

Oct 2011 - Jun 2019 Vice President - Corporate Finance & Investor Relations, PTT Global Chemical Public Company Limited

Jan 2011 - Sep 2019 Director, PTTGC Innovation America Corporation

**Shareholding :** None

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mrs. Pilasphan Udomjarumane

Senior Vice President,  
Corporate Secretary and Legal and  
Company Secretary  
Age 54

### Appointed

October 1, 2019

#### Education/Training

- Master Degree of Business Administration (Finance), Royal Melbourne Institute of Technology, Melbourne, Australia
- Post Graduate Diploma Degree in Business Administration, Victoria University, Melbourne, Australia
- Bachelor of Arts (English), Silpakorn University
- Director Certification Program (DCP) Class 287/2019, Thai Institute of Directors Association (IOD)
- Leadership Development Program (LDP) 2 PLLI, INSEAD
- Supply Chain and Supply Sourcing, McKinsey
- Strategy Management Program - 2018, Fiscal Policy Research Institute Foundation, Ministry of Finance
- M&A Training for Senior Leadership - 2018, Institute for Merger, Acquisition & Alliance
- Leadership Development Program (LDP) 2 - 2015, Sasin Graduate Institute of Business Administration of Chulalongkorn University

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, Corporate Secretary and Legal and Corporate Secretary, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : None

#### Work Experience (5 Years Past Experience)

1 Sep 2016 - 30 Sep 2019 Vice President - Strategy and Planning Department, PTT Global Chemical Public Company Limited

1 Sep 2014 - 31 Aug 2016 Vice President - Portfolio and Subsidiary Department, PTT Global Chemical Public Company Limited

**Shareholding :** 18,400 shares (0.000408%) as of December 31, 2019

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mr. Pukpong Wungrattanasopon

Acting Executive Vice President,  
Group Performance Center - Olefins  
Age 49

### Appointed

October 1, 2019

#### Education/Training

- Master of Science (Petrochemical Technology), The Petroleum and Petrochemical College, Chulalongkorn University
- Bachelor of Science (Chemical Technology), Chulalongkorn University
- Director Certification Program (DCP) Class 236/2017, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Acting Executive Vice President, Group Performance Center-Olefins, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 2

- Director, PTT Phenol Company Limited
- Director, Thai Tank Terminal Limited

#### Work Experience (5 Years Past Experience)

1 Aug 2016 - 30 Sep 2019 Senior Vice President - Group Performance Center, Aromatics, PTT Global Chemical Public Company Limited

19 Oct 2011 - 31 Jul 2016 Vice President, Technology, PTT Global Chemical Public Company Limited

**Shareholding :** None

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mr. Ratchada Sawasdirak

Senior Vice President, Group Performance Center -  
Refinery and Shared Facilities  
Age 50

### Appointed

October 1, 2019

#### Education/Training

- Master of Public Administration, Chulalongkorn University
- Bachelor of Engineering (Mechanical Engineering), Mahanakorn University of Technology
- Director Certification Program (DCP) Class 287/2019, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, Group Performance Center - Refinery and Shared Facilities, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 1

- Director, Thai Tank Terminal Limited

#### Work Experience (5 Years Past Experience)

2008- Sep 2019 Vice President - Refinery,  
PTT Global Chemical Public Company Limited

**Shareholding :** 30,000 shares (0.000665%) as of December 31, 2019

**Relations among Family with other Directors, Management,  
Major Shareholders of the Company or Subsidiaries :** None

## Mr. Supasit Tongsupachok

Senior Vice President,  
Group Performance Center - Utilities  
Age 57

### Appointed

October 1, 2019

#### Education/Training

- Master of Business Administration, Burapha University
- Bachelor of Engineering (Electronic Engineering), Rajmongkol Institute of Technology
- Executive Development Program, Class 11/2015, Fiscal Policy Research Institute Foundation
- Director Certification Program (DCP) Class 287/2019, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, Group Performance Center - Utilities, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 6

- Director, GC Logistics Solutions Company Limited
- Director, GC Estate Company Limited
- Director, Thai Tank Terminal Limited
- Director, Eastern Fluid Transport Company Limited
- Director, PL Global Transport Company Limited
- Director, ISA Machining Service Company Limited

#### Work Experience (5 Years Past Experience)

23 Nov 2011-30 Sep 2019 Vice President – Aromatics Plant 1,  
PTT Global Chemical Public Company  
Limited

**Shareholding :** 27,620 shares (0.000613%) as of December 31, 2019

**Relations among Family with other Directors, Management,  
Major Shareholders of the Company or Subsidiaries :** None

## Mr. Anutin Chuaypen

Senior Vice President,  
Group Performance Center - Aromatics  
Age 53

### Appointed

October 1, 2019

#### Education/Training

- Master of Science (Computer & Engineering Management), Assumption University
- Bachelor of Science (Chemical Engineering), Chulalongkorn University
- Leadership Development Program (LDP) 2
- Director Certification Program (DCP) Class 200/2015, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, Group Performance Center - Aromatics, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 2

- Director, GC Styrenics Company Limited
- Director, NPC Safety and Environmental Service Company Limited

#### Work Experience (5 Years Past Experience)

27 Apr 2015 - 1 Jan 2020 Director, Thai Tank Terminal Limited

10 Jul 2014 - 30 Oct 2019 Director, GC Maintenance and  
Engineering Company Limited

1 Jan 2014 - 30 Sep 2019 Senior Vice President - Group  
Performance Center, Refinery and  
Shared Facilities, PTT Global Chemical  
Public Company Limited

16 Nov 2016 - 15 Mar 2018 Director, Eastern Fluid Transport  
Company Limited

**Shareholding :** 36,591 shares (0.000812%) as of December 31, 2019

**Relations among Family with other Directors, Management,  
Major Shareholders of the Company or Subsidiaries :** None

## Mr. Pornsak Mongkoltrirat

Acting Executive Vice President,  
Polymers Business Unit  
Age 53

### Appointed

October 1, 2019

#### Education/Training

- Master of Business Administration (Management), Kasetsart University
- Bachelor of Engineering (Mechanical Engineering), Kasetsart University
- Director Certification Program (DCP) Class 263/2017, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Acting Executive Vice President, Polymers Business Unit, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 8

- Chairman, GC Logistics Solutions Company Limited
- Chairman, GC Styrenics Company Limited
- Chairman, Envicco Limited
- Director, GC Marketing Solutions Company Limited
- Director, GC Maintenance and Engineering Company Limited
- Executive Committee, HMC Polymers Company Limited
- Executive Board, PTT Asahi Chemical Company Limited
- Chairman, PL Global Transport Company Limited

#### Work Experience (5 Years Past Experience)

|                           |  |
|---------------------------|--|
| 27 Dec 2018 - 12 Nov 2019 | Director, GC-M PTA Company Limited   |
| 27 Dec 2018 - 12 Nov 2019 | Director, Thai PET Resin Company Limited   |
| 16 Jul 2017 - 1 Oct 2019  | Director and Managing Director, GC Glycol Company Limited  |
| Jan 2018 - Sep 2019       | Senior Vice President - EO-Based Performance Business Unit, PTT Global Chemical Public Company Limited                       |
| Jul 2017 - Dec 2017       | Acting Senior Vice President - EO-Based Performance Business Unit, PTT Global Chemical Public Company Limited                |
| Nov 2014 - Jun 2017       | Acting Vice President - Strategy and Business Development, Polymer Business Unit, PTT Global Chemical Public Company Limited |
| Feb 2013 - Jun 2017       | Vice President - LDPE Plant 1, Polymer Business Unit, PTT Global Chemical Public Company Limited                             |

**Shareholding :** 6,258 shares (0.000139%) as of December 31, 2019

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mr. Kumpol Chaikitkosi

Senior Vice President,  
EO-Based Performance Business Unit  
Age 59

### Appointed

October 1, 2019

#### Education/Training

- Bachelor of Engineering (Chemical Engineering), Chulalongkorn University
- Program for Executive Development, IMD, Switzerland
- Executive Development Program, TLCA
- Director Certification Program (DCP) Class 219/2016, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, EO-Based Performance Business Unit, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 3

- Director and Managing Director, GC Glycol Company Limited
- Director, GC Oxirane Company Limited
- Director, GC Styrenics Company Limited

#### Work Experience (5 Years Past Experience)

|                          |  |
|--------------------------|--|
| 1 Oct 2015 - 30 Sep 2019 | Senior Vice President - Phenol Business Unit, PTT Global Chemical Public Company Limited |
| 2015 - 2019              | Director and Managing Director, PTT Phenol Company Limited                               |
| 2006 - 2015              | Executive Vice President - Operation, PTT Phenol Company Limited                         |

**Shareholding :** None

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mr. Paisarn Sarapee

Senior Vice President,  
Phenol Business Unit  
Age 55

### Appointed

October 1, 2019

#### Education/Training

- Master of Business Administration, Graduate School of Commerce, Burapha University
- Bachelor of Science (Industrial Chemistry), Chiang Mai University
- Director Certification Program (DCP) Class 286/2019, Thai Institute of Directors Association (IOD)

- Head of Company Program, INSEAD University
- Senior Executive Program (SEP) 2019, Sasin Graduate Institute of Business Administration of Chulalongkorn University

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, Phenol Business Unit, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 1

- Director and Managing Director, PTT Phenol Company Limited

#### Work Experience (5 Years Past Experience)

|                     |   |
|---------------------|---|
| Jan 2015 - Sep 2019 | Vice President - Phenol Operation Department, PTT Phenol Company Limited            |
| Oct 2012 - Dec 2014 | Vice President - Bisphenol A Plant Operation Department, PTT Phenol Company Limited |

**Shareholding :** 47,334 shares (0.001050%) as of December 31, 2019

**Relations among Family with other Directors, Management, Major Shareholders of the Company or Subsidiaries :** None

## Mrs. Chananchida Wiboonkanarak

Senior Vice President, Downstream Strategy  
and Business Development

Age 46

### Appointed

April 1, 2018

#### Education/Training

- Master of Science (Chemical Engineering), Chulalongkorn University
- Bachelor of Science (Chemical Engineering), Chulalongkorn University
- Director Certification Program (DCP) Class 267/2018, Thai Institute of Directors Association (IOD)
- Leadership Development Program 2, 2015, Sasin Graduate Institute of Business Administration of Chulalongkorn University
- Leadership Development Program (LDP) 2, GE, U.S.A.
- PTT-HBS Leadership Development Program (LPD) 1, Harvard Business School Campus Shanghai, China

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, Downstream Strategy and Business Development, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 7

- Director, PTT Phenol Company Limited
- Director, GC Glycol Company Limited
- Director, Solution Creation Company Limited
- Director, Kuraray GC Advanced Materials Company Limited
- Director and Chairman of Executive Committee, PTT MCG Biochem Company Limited
- Member of Executive Committee, HMC Polymers Company Limited
- Member of Executive Board, PTT Asahi Chemical Company Limited

#### Work Experience (5 Years Past Experience)

|                           |  |
|---------------------------|--|
| 27 Dec 2018 - 22 Dec 2019 | Director, GC-M PTA Company Limited   |
| 27 Dec 2018 - 22 Dec 2019 | Director, Thai PET Resin Company Limited   |
| 26 Feb 2016 - 5 Nov 2018  | Director, Thai Fatty Alcohols Company Limited  |
| 1 Oct 2017 - 31 Mar 2018  | Acting Senior Vice President - Downstream Strategy and Business Development, PTT Global Chemical Public Company Limited                      |
| 1 Apr 2014 - 30 Sep 2017  | Vice President - Strategy and Business Development, High-Volume Specialties Business Unit, PTT Global Chemical Public Company Limited        |
| 1 Jan 2013 - 31 Mar 2014  | Acting Vice President - Strategy and Business Development, High-Volume Specialties Business Unit, PTT Global Chemical Public Company Limited |

Shareholding : None

Relations among Family with other Directors, Management,

Major Shareholders of the Company or Subsidiaries : None

## Mr. Khomson Piyawattanaviroj

Senior Vice President,  
CAPEX Excellence

Age 57

### Appointed

January 1, 2018

#### Education/Training

- Bachelor of Engineering (Mechanical Engineering), Chulalongkorn University

## Mrs. Jeeranee Pimthanothai

Senior Vice President,  
Technical, Engineering and Maintenance

Age 55

### Appointed

September 1, 2015

#### Education/Training

- Master of Engineering (Petrochemical Technology), Chulalongkorn University
- Bachelor of Science (Chemical Technology), Chulalongkorn University
- Director Certification Program (DCP) Class 249/2017 and Certificate of Corporate Governance: The Role of Manager in Supporting Directors, Thai Institute of Directors Association (IOD)
- Leadership Innovation and Strategy, GE Crotonville
- Leadership Development Program (LDP) 1
- NIDA-Wharton Executive Leadership Program, U.S.A.
- The Columbia Senior Executive Program, U.S.A.

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, Technical, Engineering and Maintenance, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 2

- Director, GC Maintenance and Engineering Company Limited
- Director, PTT Energy Solutions Company Limited

#### Work Experience (5 Years Past Experience)

|                     |   |
|---------------------|---|
| Nov 2019            | Director, PTT Asahi Chemical Company Limited  |
| Jan 2015 - Aug 2015 | Vice President - Petrochemicals Subsidiary Planning & Management Department, PTT Public Company Limited   |
| 2014                | Vice President - Refining Subsidiary Planning & Management Department and Acting in Vice President - Petrochemicals Subsidiary Planning & Management Department and Project Director of PTT Group Operational Excellence Management System Transformation Project, PTT Public Company Limited |

Shareholding : 15,543 shares (0.000345%) as of December 31, 2019

Relations among Family with other Directors, Management,

Major Shareholders of the Company or Subsidiaries : None

- Director Certification Program (DCP) Class 259/2018, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, CAPEX Excellence, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 1

- Director, NPC Safety and Environmental Service Company Limited

#### Work Experience (5 Years Past Experience)

|                     |   |
|---------------------|---|
| Jan 2017 - Dec 2017 | Vice President - Center of Excellence, PTT Global Chemical Public Company Limited |
| Jul 2013 - Dec 2016 | Project Director, PTT Phenol Company Limited                                      |

Shareholding : None

Relations among Family with other Directors, Management,

Major Shareholders of the Company or Subsidiaries : None

## Mr. Wirat Boonbumrungchai

Senior Vice President, Quality, Safety,  
Occupational Health and Environment  
Age 58

### Appointed

January 1, 2017

#### Education/Training

- Master of Engineering (Mechanical Engineering), Chulalongkorn University
- Bachelor of Engineering (Mechanical Engineering), Chulalongkorn University
- Director Certification Program (DCP) Class 177/2013, Thai Institute of Directors Association (IOD)
- NIDA Executive Leadership Program WHARTON

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, Quality, Safety, Occupational Health and Environment, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 1

- Director, NPC Safety and Environmental Service Company Limited

#### Work Experience (5 Years Past Experience)

|             |   |
|-------------|---|
| 2013 - 2016 | Senior Vice President, PTT Global Chemical Public Company Limited,<br>Secondment as Managing Director,<br>PTT Maintenance and Engineering Company Limited |
|-------------|---|

**Shareholding :** 30,237 shares (0.000671%) as of December 31, 2019

**Relations among Family with other Directors, Management,**

**Major Shareholders of the Company or Subsidiaries :** None

## Mrs. Chatsuda Kanjanarat

Senior Vice President,  
Transformation Excellence  
Age 51

### Appointed

July 1, 2017

#### Education/Training

- Bachelor of Engineering (Electrical-Electronics), (Second-class Honors), King Mongkut's Institute of Technology Ladkrabang
- Director Certification Program (DCP) Class 249/2017, Thai Institute of Directors Association (IOD)

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, Transformation Excellence, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 1

- Director, PTT Digital Solutions Company Limited

#### Work Experience (5 Years Past Experience)

|                          |   |
|--------------------------|---|
| 13 Jun 2016- 30 Jun 2017 | Vice President - PTTGC Business Performance Improvement - Project MAX, PTT Global Chemical Public Company Limited |
| 1 Jan 2014 - 12 Jun 2016 | Vice President - Strategy and Planning, PTT Global Chemical Public Company Limited                                |

**Shareholding :** None

**Relations among Family with other Directors, Management,**

**Major Shareholders of the Company or Subsidiaries :** None

## Mrs. Wilawan Songjaroen

Senior Vice President,  
Procurement  
Age 56

### Appointed

September 1, 2019

#### Education/Training

- Master of Engineering (Chemical Engineering), Chulalongkorn University
- Bachelor of Science (Chemistry), Silpakorn University
- International Management Program, Stanford - NUS, Singapore
- Stanford Executive Program (SEP), Stanford Graduate School of Business, Stanford University, U.S.A.
- Director Certification Program (DCP) Class 120/2009, Thai Institute of Directors Association (IOD) and Australian Institute of Company Directors
- Certificate in Procurement and Supply Operations, Purchasing & Supply Chain Management Association of Thailand/The Chartered Institute of Purchasing and Supply (CIPS), August-October 2007
- International Business Management Program, Graduate School of Business, Georgetown University, Washington DC, U.S.A.

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, Procurement, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 2

- Director, GC Logistics Solutions Company Limited
- Director, PL Global Transport Company Limited

#### Work Experience (5 Years Past Experience)

|                          |   |
|--------------------------|---|
| Jan 2018 - Oct 2019      | Director, GC Marketing Solutions Company Limited  |
| 1 Jan 2017 - 1 Sep 2019  | Managing Director, GC Logistics Solutions Company Limited   |
| 20 Nov 2017 - 1 Sep 2019 | Managing Director, PL Global Transport Company Limited  |
| 16 Oct 2015 - 2016       | Vice President - Production Planning, Sales & Marketing, Polymers Business Unit, PTT Global Chemical Public Company Limited |
| 1 Oct 2014 - 2016        | Vice President - Marketing, High Volume Specialty Business Unit, PTT Global Chemical Public Company Limited                 |
| 2011 - 30 Sep 2014       | Vice President - Procurement, PTT Global Chemical Public Company Limited  |

**Shareholding :** None

**Relations among Family with other Directors, Management,**

**Major Shareholders of the Company or Subsidiaries :** None

## Mr. Kevin Thomas Corby

Senior Vice President,  
Science and Innovation  
Age 64

### Appointed

October 1, 2019

#### Education/Training

- Doctor of Philosophy in Chemistry, The Pennsylvania State University, U.S.A.
- Bachelor of Science (Chemistry), King's College, PA, U.S.A.
- Business Executive Program: University of Michigan, Ross School of Business, U.S.A.

#### Board Member/Management in Listed Company –

##### The Stock Exchange of Thailand : 1

- Senior Vice President, Science and Innovation, PTT Global Chemical Public Company Limited

#### Board Member/Management in Non-Listed Company –

##### The Stock Exchange of Thailand : 3

- Director, GC Ventures Company Limited
- Director, GC Ventures America Corporation
- Director, PTTGC Innovation America Corporation

#### Work Experience (5 Years Past Experience)

2008 - 2017 Global Technology Director, DuPont Protection Technologies, E.I. Dupont Co.

Shareholding : None

Relations among Family with other Directors, Management,

Major Shareholders of the Company or Subsidiaries : None

## EXECUTIVE VICE PRESIDENT/ SENIOR VICE PRESIDENT APPOINTED AS EXECUTIVES OF GC'S SUBSIDIARIES

### 1. Mr. Toasaporn Boonyapipat

#### Executive Vice President

Reporting to Chief Executive Officer,  
Secondment as President & CEO, PTTGC America LLC

### 2. Mr. Siridech Kumvongdee

#### Executive Vice President

Reporting to Downstream Petrochemical Business,  
Secondment as President, HMC Polymers Company Limited

### 3. Mr. Somnuk Suwanpradit

#### Senior Vice President

Reporting to Downstream Petrochemical Business,  
Secondment as Managing Director, GC Oxirane Company Limited

### 4. Mr. Amnuai Phrom-Anant

#### Senior Vice President

Reporting to Downstream Petrochemical Business,  
Secondment as Managing Director, GC Logistics Solutions Company Limited

### 5. Mr. Thitipol Artsanchorn

#### Senior Vice President

Reporting to Downstream Petrochemical Business,  
Secondment as President, GC Marketing Solutions Company Limited

### 6. Miss Kornkamol Korpaisarn

#### Senior Vice President

Reporting to Downstream Petrochemical Business,  
Secondment as Managing Director, GC Polyols Company Limited

### 7. Mr. Witoon Suewatanakul

#### Senior Vice President

Reporting to Downstream Petrochemical Business,  
Secondment as Managing Director,  
Global Green Chemicals Public Company Limited

### 8. Mr. Narongchai Pisutpunya<sup>(1)</sup>

#### Senior Vice President

Reporting to Downstream Petrochemical Business,  
Secondment as President, GC-M PTA Company Limited and  
Thai PET Resin Company Limited

### 9. Mr. Piroj Samutthanant<sup>(2)</sup>

#### Senior Vice President,

Reporting to Center of Excellence,  
Secondment as Managing Director,  
GC Maintenance and Engineering Company Limited

### 10. Mr. Kridsada Prasertsuko

#### Senior Vice President

Reporting to Center of Excellence,  
Secondment as Managing Director,  
NPC Safety and Environmental Service Company Limited

### 11. Mr. Theerapol Muenpakdee

#### Senior Vice President

Reporting to Upstream Petrochemical Business,  
Secondment as Managing Director, Thai Tank Terminal Limited

### 12. Mr. Vitaya Pinmuangngarm

#### Senior Vice President

Reporting to Downstream Petrochemical Business,  
Secondment as President, PTT Asahi Chemical Company Limited

### 13. Miss Somsri Phanichrungruang

#### Senior Vice President

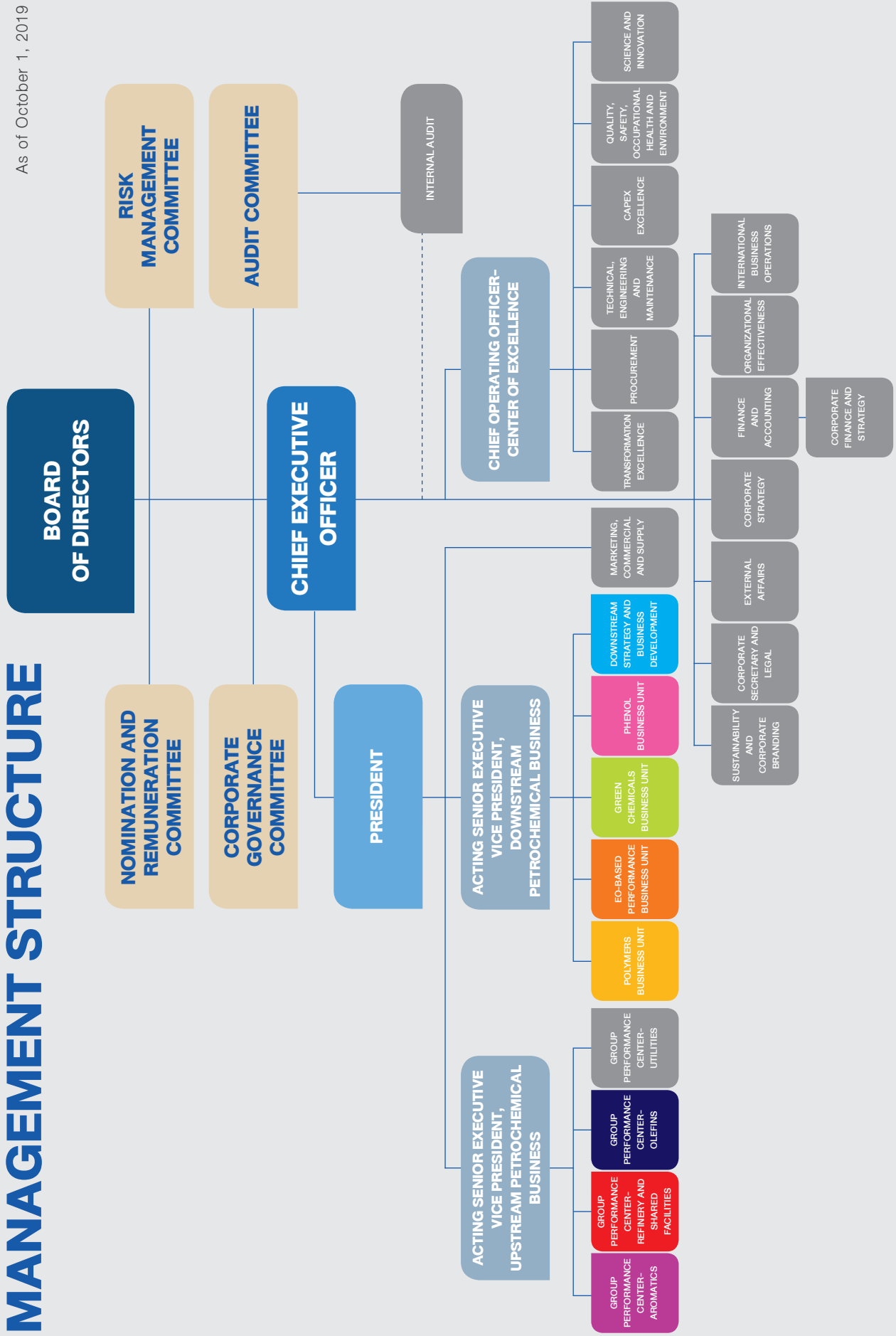
Reporting to Downstream Petrochemical Business,  
Secondment as President, PTT MCC Biochem Company Limited

#### Remarks:

- (1) Mr. Narongchai Pisutpunya is appointed as President in replacement of Mr. Sommai Sirilertsombat effective from July 1, 2019.
- (2) Mr. Piroj Samutthanant is appointed as Managing Director in replacement of Mr. Pairush Soovan effective from January 1, 2020

# MANAGEMENT STRUCTURE

As of October 1, 2019



# MANAGEMENT STRUCTURE

## THE BOARD OF DIRECTORS

The Board of Directors as of January 31, 2020 comprises the following members:

| Name   | Position  | Date of Appointment |
|--|---|---------------------|
| 1. Mr. Piyasvasti Amranand                   | Chairman/Chairman of the Independent Directors  | April 9, 2018       |
| 2. Mr. Prasert Bunsumpun                     | Independent Director/ Chairman of the Risk Management Committee   | October 19, 2011    |
| 3. Mr. Apisak Tantivorawong <sup>(1)</sup>   | Independent Director/Chairman of the Audit Committee  | January 24, 2020    |
| 4. Professor Somkit Lertpaithoon             | Independent Director/Chairman of the Corporate Governance Committee   | April 9, 2018       |
| 5. Mr. Don Wasantapruek                      | Independent Director/Chairman of the Nomination & Remuneration Committee  | November 1, 2015    |
| 6. Mr. Pakorn Nilprapunt                     | Independent Director/Director to the Audit Committee  | April 9, 2018       |
| 7. Mr. Prapas Kong-ied <sup>(2)</sup>        | Independent Director/Director to the Audit Committee  | November 1, 2019    |
| 8. Major General Nithi Chungcharoen          | Independent Director/Director to the Corporate Governance Committee/Director to the Nomination & Remuneration Committee | September 22, 2014  |
| 9. Mrs. Watanan Petersik                     | Independent Director/Director to the Corporate Governance Committee   | September 22, 2014  |
| 10. Mr. Wittawat Svasti-xuto                 | Director/Director to the Nomination & Remuneration Committee  | February 19, 2018   |
| 11. Mr. Disathat Panyarachun                 | Director/Director to the Corporate Governance Committee   | October 22, 2018    |
| 12. Mrs. Premrutai Vinaiphath <sup>(3)</sup> | Director/Director to the Risk Management Committee  | February 18, 2019   |
| 13. Mrs. Arawadee Photisaro                  | Director/Director to the Risk Management Committee  | October 22, 2018    |
| 14. Mr. Supattanapong Punmeechaow            | Director/Director to the Risk Management Committee  | September 25, 2014  |
| 15. Mr. Kongkrapan Intarajang <sup>(4)</sup> | Director/Director to the Risk Management Committee/ Chief Executive Officer   | October 1, 2019     |

### Remarks:

- (1) Mr. Apisak Tantivorawong, Independent Director, replaced Mr. Prasan Chuaphanich, effective January 24, 2020.
- (2) Mr. Prapas Kong-ied, Independent Director, replaced Mr. Amnuay Preemonwong, effective November 1, 2019.
- (3) Mrs. Premrutai Vinaiphath, Director, replaced Mr. Praphon Wongtharua, effective February 18, 2019.
- (4) Mr. Kongkrapan Intarajang, Director, replaced General Chatchalerm Chalermsook, effective June 18, 2019.

Director who retired by rotation in 2019 are as follows:

| Name                        | Position   | Terms of Appointment               |
|-----------------------------|--|------------------------------------|
| 1. Mr. Anon Sirisaengtaksin | Director/Director to the Risk Management Committee | September 22, 2014 - April 5, 2019 |

Directors who resigned in 2019 are as follows:

| Name                               | Position  | Terms of Appointment                |
|------------------------------------|---|-------------------------------------|
| 1. Mr. Praphon Wongtharua          | Director/Director to the Risk Management Committee  | August 24, 2015 - February 5, 2019  |
| 2. General Chatchalerm Chalermsook | Independent Director  | April 5, 2019 - May 6, 2019         |
| 3. Mr. Amnuay Preemonwong          | Independent Director/Chairman of the Nomination & Remuneration Committee/ Director to the Audit Committee | October 19, 2011 - October 31, 2019 |
| 4. Mr. Prasan Chuaphanich          | Independent Director/Chairman of the Audit Committee  | April 5, 2016 - November 17, 2019   |

## AUTHORIZED DIRECTORS

According to GC's Articles of Association and Certification of Incorporation from the Department of Business Development of the Ministry of Commerce, as of December 17, 2019, the authorized signatory Directors of GC were: "(1) Mr. Kongkrapan Intarajang, Chief Executive Officer, can sign and affix the Company's seal on behalf of GC; or (2) two of the following three Directors can jointly sign and affix the Company's seal on behalf of GC, namely Mr. Disathat Panyarachun, Mrs. Arawadee Photisarao, and Mr. Wittawat Svasti-xuto".

## COMPOSITION OF THE BOARD OF DIRECTORS

GC's Articles of Association mandate that the Board of Directors be composed of no fewer than five but no more than 15 Directors. Each Director is to serve a three-year term. At least one-third and no fewer than three Directors on the entire Board must be Independent Directors. According to good corporate governance principles, more than half of the Board of Directors must be Independent Directors. Furthermore, GC's good corporate governance principles prescribe that at least half of the Board of Directors must be residents of the Kingdom of Thailand. These Directors must also have the legally required qualifications, not possess any attributes prohibited by law and not be over the age of 70.

The composition of the Board of Directors and its members' qualifications comply with its Articles of Association, good corporate governance principles and legal regulations. In addition, Company policy protects Directors from any form of gender discrimination. The Board of Directors comprises individuals from diverse fields of knowledge, expertise and professional experience which are beneficial to the Company's business operations. Furthermore, each Director may hold a directorship at no more than five companies listed with the Stock Exchange of Thailand (SET) and at no more than three state enterprises or juristic persons whose shares are held by state enterprises, according to a resolution passed by the cabinet. The Company's Board of Directors comprises a total of 15 Directors, which is a number appropriate for its business size and type. These Directors are divided into the following categories:

1. Fourteen Non-Executive Directors
2. One Executive Director, namely the Chief Executive Officer
3. Nine Independent Directors (more than half of the Board)
4. Three female Directors

## AUTHORITY AND RESPONSIBILITIES OF THE BOARD OF DIRECTORS

The Board of Directors governs the Company's operations and ensures strict compliance with applicable laws, GC's objectives and Articles of Association and shareholder resolutions, as well as good corporate governance principles and best practices for Directors of listed companies set forth by SET. All Directors possess the knowledge and capability needed to perform their duties for the benefit of the Company and its shareholders. The Board's authority and responsibilities are summarized below:

1. Dedicate its time and attention to establish the Company's vision, mission, directions and strategies. Board members freely express their opinions and seek useful information to determine the direction of the Company.
2. Review and approve key strategies and policies as well as objectives, financial goals and corporate plans as well as supervise and monitor the management's implementation of the Company's strategic plans in compliance with the defined directions and strategies to ensure that the management is able to achieve the Company's vision, directions and strategies with efficiency, and readily adapt to the changing situation.
3. Establish Corporate Governance Policy and Business Code of Conduct, which appropriately outline principles and good practices for the Board, management and staff members, and instill responsibility awareness in all employees to promote an understanding of and strict compliance with these principles and guidelines, in addition to the Company's rules and regulations, to assure all stakeholders of fairness.
4. Exercise approval authority on various matters beyond the authority granted to the Chief Executive Officer and President in the Company provision namely budget, investment, project implementation of GC Group, key contract entry, directors' appointment to replace those who resigned during the year or to sub-committee, naming of authorized directors, and appointment of the dates for the annual general meeting of shareholders and interim dividend payment.
5. Ensure that the corporate accounting system, financial reporting and auditing are credible, supervise the assessment of internal control's adequacy and ensure that internal audits are performed efficiently and effectively.
6. Consider all relevant risk factors and devise comprehensive risk management guidelines, ensure that the Company's Executives are equipped with an efficient risk management system or process to mitigate risks, as well as to explore

business opportunities that may arise from these risks and ensure that adequate and effective internal control is in place.

7. Monitor and manage all conflicts of interest, as well as all connected transactions, that may arise, and value key transactions to maximize the benefit of shareholders and other stakeholders.
8. Provide appropriate channels of communication to each group of shareholders and ensure that the disclosure of information is accurate, clear, transparent, credible and of the highest standard.
9. Regularly conducts assessment and reviews of its own performance and that of the Chief Executive Officer and President.
10. Provide a suitable compensation system or mechanism for the Company's Executives, relative to the performance of the Company, to induce short-term and long-term motivation.
11. Act as leaders and role models in line with the Company's Corporate Governance Policy.
12. Assess corporate adherence to the Company's Corporate Governance Policy and Business Code of Conduct at least once a year.
13. Provide an appropriate, transparent and fair nomination system for all key managerial positions. Top executives, from Executive Vice Presidents to the Chief Executive Officer, are appointed by the Board's majority votes.
14. Report to the Company any conflict of interest that its members or their affiliates may have with the management of the Company or its subsidiaries.
15. Attend every Board meeting, as well as every shareholders' meeting. If, under any circumstance, attendance is impossible, the Chairman of the Board must be notified in writing.
16. Value corporate social and environmental responsibility and promote sustainable quality of life for Thai people, starting with improving the standard of living of communities around the Company's plants to foster an environment where its plants and these communities co-exist in a sustainable manner.
17. Provide support to all anti-fraud schemes for the purpose of progress and sustainable growth.

Moreover, the Board of Directors must obtain permission from the shareholders' meeting before acting on the following issues:

- Acquisition or disposition of an important asset or any connected transaction as prescribed by laws and the Capital Market Supervisory Board.
- Sale or transfer of the Company's entire enterprise or its essential components to other entities.
- Disposition or acquisition of an enterprise on behalf of the Company.

- Initiation, modification or termination of all or some key lease contracts of the Company, including the assignment of lease contracts to other individuals or entry into a partnership with another entity to share profits or losses.
- Making addenda or amendments to the Company's Memorandum or Articles of Association.
- Increasing or decreasing the registered capital.
- Issuance of debentures for sale to the public.
- Dissolution of the Company or merging it with another company.
- Announcing annual dividends.
- Other activities that require approval from the shareholders' meeting as mandated by law or the Company's Articles of Association.

## **APPOINTMENT TO AND TERMINATION FROM THE BOARD OF DIRECTORS**

GC's Articles of Association provide the following guidelines for the appointment to and termination from the Board of Directors:

### **APPOINTMENT**

- Shareholders at a shareholders' meeting shall vote to appoint Director(s) according to the following guidelines:
  1. Each shareholder shall have one vote per share held.
  2. In the event that the number of nominees for the election does not exceed the number of vacant positions, shareholders shall vote on these eligible nominees. Shareholders shall allocate all of their votes per (1) to one nominee without dividing their votes.
  3. In the event that the number of nominees exceeds the number of vacant positions, shareholders shall still allocate all of their votes per (1) to one nominee without dividing their votes. Nominees receiving the majority of the votes shall be appointed to the Board until there are no vacancies left. Additionally, in the event that the number of nominees with equal votes exceed the number of available positions, The Chairman of the meeting shall cast the deciding vote.
- The Board of Directors shall nominate one Director as Chairman of the Board of Directors. Decisions made during a Board meeting are based on majority votes. The Chairman shall vote only when a deciding vote is needed. In the event that a Director's position becomes vacant for any reason other than retirement by rotation, the Board may

appoint an individual who is qualified and does not possess any attributes prohibited by law as Director to attend the next Board meeting, unless the remaining term is less than two months. The new Director shall serve only the remaining term of his or her predecessor. This decision shall be made only with the agreement of at least three-quarters of the remaining Directors.

- In the event that vacancies cause the number of Directors to fall below the quorum, the remaining Directors shall have the only authority to call for a shareholders' meeting in which shareholders shall vote to appoint new Directors to fill these vacancies only. This process must be completed within one month from the date on which the number of Directors no longer constitutes the quorum. These newly appointed Directors shall serve only the remaining terms of their predecessors.

## TERMINATION

- At each Annual General Meeting of Shareholders, one-third of the serving Directors shall retire by rotation. In the event that the number of serving Directors is not equality divisible by three, the number of Directors retiring shall be as close to one-third as possible. Directors to retire in the first and second years after Company registration shall be randomly selected; however, in later years, Directors serving the longest terms shall retire. Directors who retire by rotation may be re-elected to the Board.
- In addition to retirement by rotation, other causes for directorship termination include death, resignation or disqualification or prohibition by law. Additionally, Directors can be terminated by a shareholders' meeting resolution or a court order.
- Resigning Directors must submit their resignation notice to the Company. Resignation is effective from the day the Company receives such notice. In addition, Directors may submit their resignation notice through the registrar. At a shareholders' meeting, shareholders may pass a resolution to force the termination of a Director before his or her term ends with three-fourths of the attending and eligible shareholders' votes. Additionally, these majority votes must constitute at least half of the shares held by attending and eligible shareholders.

## INDEPENDENT DIRECTORS

According to the Company's corporate governance principles, more than half of the Board of Directors must be Independent Directors. Each Independent Director may serve up to three consecutive terms or up to nine years. The term begins from the date of the 2014 Annual General Meeting of Shareholders onwards, regardless of their previous terms. These Independent Directors must be experienced and independent under the Capital Market Supervisory Board's requirements. Additionally, they must hold no more than 0.5% of the Company's shares (a stricter regulation than the Securities and Exchange Commission's limit of 1%). The definition of Independent Directors is disclosed in the Company's Corporate Governance Handbook and on the Company website.

Independent Directors must attend meetings regularly. They are allowed to freely express their opinions during these meetings. To do so, they are entitled to adequate access to company financial and business information. They are also tasked with protecting stakeholders' interests and preventing conflict of interest among the Company, its executives, Board of Directors and major shareholders.

Currently, the Company has a total of nine Independent Directors, constituting more than one-third of the Board and exceeding the legal requirement. In addition, this number is in line with the Company's corporate governance principles, which stipulate that more than half of Board members must be Independent Directors. Moreover, the Charter of Independent Directors clearly outlines their duties and ensures the tangibility of their performance. Under the Charter recently amended to suit current situation, duties and responsibilities of Independent Directors are as follows:

- Advise and provide recommendations to the Board of Directors on key issues that the Company should act upon or issues that could be beneficial to the Company, its shareholders and other relevant stakeholders.
- Ensure the Company's compliance with its Anti-Corruption Policy and measures.
- Value corporate social and environmental responsibility
- Seek consultation from external, independent consultants if necessary. The expenses incurred will be borne by the Company.
- Ensure that the Company operates according to the regulations and requirements of all Independent Directors related regulatory bodies for listed

companies, and review the definition of an Independent Director to make sure that it is appropriate and complete, according to legal requirements.

- Review the adequacy of their charter annually and propose recommended amendment, if any, to the Board of Directors for approval.
- Perform other duties as assigned by the Board of Directors, provided that these duties do not interfere with the independent nature required of Independent Directors.

## SUB-COMMITTEES

In conformity to good corporate governance principles, the Board of Directors at Meeting No. 1/2011, held on October 19, 2011, established four Sub-Committees, namely the Audit Committee, the Nomination and Remuneration Committee, the Corporate Governance Committee and the Risk Management Committee. Serving a three-year term, Directors appointed to these Sub-Committees are to perform their specific tasks with diligence and efficiency. All Sub-Committees report to the Board of Directors. The names and tasks of each Sub-Committee as of December 31, 2019, are listed below:

### AUDIT COMMITTEE

| Name                                     | Position   | Date of Appointment |
|--|--|---------------------|
| 1. Mr. Prasan Chuaphanich <sup>(1)</sup> | Chairman of the Audit Committee (Independent Director) | April 25, 2016      |
| 2. Mr. Pakorn Nilprapunt                 | Director to the Audit Committee (Independent Director) | April 23, 2018      |
| 3. Mr. Prapas Kong-ied <sup>(2)</sup>    | Director to the Audit Committee (Independent Director) | November 1, 2019    |

Mr. Amorn Putiphrawan, Senior Vice President of Internal Audit, serves as Secretary to the Audit Committee.

#### Remarks:

- (1) Mr. Prasan Chuaphanich possesses his education background and work experiences in accounting and finance. He served as Chairman of the Audit Committee until November 18, 2019. Besides, Mr. Apisak Tantivorawong was appointed the Chairman of the Audit Committee on January 24, 2020.
- (2) Mr. Prapas Kong-ied was appointed Director to the Audit Committee, replacing Mr. Amnuay Preemonwong, on November 1, 2019.

The Audit Committee is composed of at least three Independent Directors. These Directors serve a three-year term unless their terms on the Board end, or they resign or are removed from positions. Directors to the Audit Committee who retire by rotation may be re-appointed by the Board. Each Director's qualifications, duties and responsibilities are in line with the criteria set forth by the Securities and Exchange Commission (SEC). Their scope of work is defined by the Capital Market Supervisory Board.

The Board of Directors has approved the Charter of the Audit Committee, which stipulates the composition, qualifications, terms of office and scopes of duties according to good corporate governance principles. Details of the charter are disclosed in the Company's Corporate Governance Handbook and on the Company website.

GC's Audit Committee comprises all Independent Directors. The Board believes that these respectable Directors possess sufficient knowledge, expertise and experience in finance and accounting. They have continuously undergone training to enhance their expertise for the benefit of ensuring the credibility of the Company's financial and auditing reports, including their adherence to accounting standards, applicable laws and other related standard practices. Furthermore, the Audit Committee ensures adequate and efficient internal control and risk management

systems while overseeing internal processes regarding whistleblowers and complaint submissions. The Audit Committee nominates independent auditors and submits dismissal recommendations to the Board in the event that an independent auditor cannot or neglect to or wrongfully performs his or her duties. It probes the suitability and efficacy of the Company's internal audit system and oversees the functions of Internal Audit to ensure compliance with internal auditing standards. The Audit Committee oversees the Company's compliance with securities and exchange laws, regulations of the Stock Exchange of Thailand (SET) and other applicable laws. It also reviews connected transactions and conflicts of interest to ensure their compliance with applicable laws and the requirements of the Stock Exchange of Thailand (SET) and Securities and Exchange Commission (SEC), affording the Company sensibility, the utmost benefit and full disclosure.

In 2019, the Audit Committee held a total of nine meetings and one additional meeting with the External Auditor, performing its role within the scope of duties and responsibilities mandated by the Charter of the Audit Committee and as assigned to them by the Board of Directors. The Committee also reported its performance outcomes to the Board on a quarterly basis before further presenting a summary of the results to shareholders in the annual report.

## NOMINATION AND REMUNERATION COMMITTEE

| Name   | Position   | Date of Appointment |
|--|--|---------------------|
| 1. Mr. Don Wasantapruek <sup>(1)</sup>             | Chairman of the Nomination and Remuneration Committee (Independent Director) | April 23, 2018      |
| 2. Mr. Wittawat Svasti-xuto                        | Director to the Nomination and Remuneration Committee                        | October 22, 2018    |
| 3. Major General Nithi Chungcharoen <sup>(2)</sup> | Director to the Nomination and Remuneration Committee (Independent Director) | November 1, 2019    |

Mrs. Pilasphan Udomjarumane, Senior Vice President, Corporate Secretary and Legal, serves as Secretary to the Nomination and Remuneration Committee, replacing Mrs. Warawan Tippawanich, on October 1, 2019.

### Remarks:

- (1) Mr. Don Wasantapruek, Director to the Nomination and Remuneration Committee, was appointed Chairman on November 1, 2019.
- (2) Major General Nithi Chungcharoen was appointed Director to the Nomination and Remuneration Committee, replacing Mr. Amnuay Preemonwong, on November 1, 2019.

The Nomination and Remuneration Committee is composed of at least three Directors of the Board, more than half of whom are required to be Independent Directors. Its Chairman is also required to be an Independent Director. These Directors serve a three-year term unless their terms on the Board end, or they resign or are removed from positions.

The Nomination and Remuneration Committee nominates candidates for appointment to the Board or Sub-Committees, as well as nominating candidates to be appointed as the Chief Executive Officer (CEO) under a well-structured and transparent process. The Committee is also charged with establishing remuneration guidelines for the Directors and CEO. Nomination criteria include experiences, profession, skills, expertise diversity and niche qualifications needed for the Company's businesses under the Board Skill Matrix. These criteria strike a balance among all business fields and yield the utmost benefit to the Company. In addition, the

Committee considers candidates from the Director's Pool of credible organizations and present nominees to the Board and/or at the shareholders' meeting for appointment.

The Board of Directors has approved the Charter of the Nomination and Remuneration Committee, which identifies the composition, qualifications, terms of office and scopes of duties according to good corporate governance principles. Details of the charter are disclosed in the Company's Corporate Governance Handbook and on the Company website.

In 2019, the Nomination and Remuneration Committee held a total of five meetings, performing its roles within the scope of duties and responsibilities mandated by the Charter of the Nomination and Remuneration Committee and as assigned by the Board of Directors. The Committee also reported its performance to the Board before further presenting a performance summary to shareholders in the annual report.

## CORPORATE GOVERNANCE COMMITTEE

| Name                                | Position  | Date of Appointment |
|-------------------------------------|---|---------------------|
| 1. Professor Somkit Lertpaithoon    | Chairman of the Corporate Governance Committee (Independent Director) | April 23, 2018      |
| 2. Major General Nithi Chungcharoen | Director to the Corporate Governance Committee (Independent Director) | September 22, 2014  |
| 3. Mrs. Watanan Petersik            | Director to the Corporate Governance Committee (Independent Director) | April 23, 2018      |
| 4. Mr. Disathat Panyarachun         | Director to the Corporate Governance Committee                        | October 22, 2018    |

Mrs. Pilasphan Udomjarumane, Senior Vice President, Corporate Secretary and Legal, serves as Secretary to the Corporate Governance Committee, replacing Mrs. Warawan Tippawanich, on October 1, 2019.

The Corporate Governance Committee is composed of at least three Directors of the Board, more than half of whom are required to be Independent Directors. Its Chairman is also required to be an Independent Director. These Directors serve a three-year term unless their terms on the Board end, or they resign or are removed from positions.

The responsibilities of the Committee include determination of guidelines and policies related to the business code of conduct and ethics, as well as anti-corruption measures and policies, in compliance with good corporate governance principles. These guidelines and policies are presented to the Board of Directors to be approved as company regulations. The Corporate Governance Committee also presents guidelines and policies on corporate social and

environmental responsibility to the Board. Moreover, the Committee supervises and provides guidance for the Company's sustainable development, as well as monitors its progress and assesses the effectiveness of its performance. All of this standardizes the Company's practices.

In 2019, the Corporate Governance Committee held a total of seven meetings, performing its roles within the scope of duties and responsibilities mandated by the Charter of the Corporate Governance Committee and as assigned by the Board of Directors. The Committee also reported its corporate governance monitoring results to the Board before further presenting a summary of the results to shareholders in the annual report.

## RISK MANAGEMENT COMMITTEE

| Name  | Position   | Date of Appointment |
|---|--|---------------------|
| 1. Mr. Prasert Bunsumpun                    | Chairman of the Risk Management Committee (Independent Director) | April 23, 2018      |
| 2. Mrs. Premrutai Vinaiphat <sup>(1)</sup>  | Director to the Risk Management Committee                        | February 18, 2019   |
| 3. Mrs. Arawadee Photisaro                  | Director to the Risk Management Committee                        | October 22, 2018    |
| 4. Mr. Supattanapong Punmeechaow            | Director to the Risk Management Committee                        | September 25, 2014  |
| 5. Mr. Kongkrapan Intarajang <sup>(2)</sup> | Director to the Risk Management Committee                        | October 1, 2019     |

Mr. Chusak Wittayakajohnsad, Vice President of Corporate Risk Management and Internal Control System, serves as Secretary to the Risk Management Committee.

### Remarks:

- (1) Mrs. Premrutai Vinaiphat was appointed Director to the Risk Management Committee, replacing Mr. Praphon Wongtharua, on February 18, 2019.  
 (2) Mr. Kongkrapan Intarajang was appointed Director to the Risk Management Committee, replacing Mr. Anon Sirisaengtaksin, on October 1, 2019.

The Risk Management Committee is composed of at least three Directors of the Board, at least one of whom is required to be an Independent Director. These Directors serve a three-year term unless their terms on the Board end, or they resign or are removed from positions.

The Risk Management Committee's role is to establish policies related to the Company's risk appetite and risk tolerance, as well as risk management guidelines that serve as a framework within which the entire GC Group operates. With a particular focus on early-warning signs, the Committee oversees that risks are identified and ranked by impact and likelihood. In extension, the Committee establishes appropriate risk mitigation measures and monitors and assesses the effectiveness of the Company's risk management.

Furthermore, the Risk Management Committee offers its opinions and suggestions on possible risk issues of an investment project or a legally binding agenda item that is complex in nature or will impact the Company's reputation in a significant manner. It also ensures that the Company's business operations comply with relevant laws and standards.

In 2019, the Risk Management Committee held a total of six meetings, performing its roles within the scope of duties and responsibilities mandated by its Charter and as assigned by the Board of Directors. The Risk Management Committee also reported its performance to the Board on a quarterly basis before further presenting a performance summary to shareholders in the annual report.

## DIRECTORS' MEETINGS

In 2019, meetings of the Board of Directors, Independent Directors, Non-Executive Directors and Sub-Committee Directors, including Directors' attendance are illustrated in the table below. These meetings had been scheduled

in advance. Directors who were unable to attend these meetings due to important, urgent matters submitted written notices to the Chairman of the Board of Directors, specifying their reasons. The Chairman informed the meeting of missing Director(s) before starting it.

| Name                                | Meetings in 2019   |                       |                           |                 |                                       |                                |                           | 2019 Annual General Meeting of Shareholders |
|-------------------------------------|--------------------|-----------------------|---------------------------|-----------------|---------------------------------------|--------------------------------|---------------------------|---|
|                                     | Board of Directors | Independent Directors | Non - Executive Directors | Audit Committee | Nomination and Remuneration Committee | Corporate Governance Committee | Risk Management Committee |   |
|                                     | (16 times)         | (1 times)             | (1 times)                 | (9 times)       | (5 times)                             | (7 times)                      | (6 times)                 |   |
| 1. Mr. Piyasvasti Amranand          | 16/16              | 1/1                   | 1/1                       | -               | -                                     | -                              | -                         | 1/1   |
| 2. Mr. Prasert Bunsumpun            | 16/16              | 1/1                   | 1/1                       | -               | -                                     | -                              | 6/6                       | 1/1   |
| 3. Professor Somkit Lertpaithoon    | 16/16              | 1/1                   | 1/1                       | -               | -                                     | 7/7                            | -                         | 1/1   |
| 4. Mr. Don Wasantapruerk            | 16/16              | 1/1                   | 1/1                       | -               | 5/5                                   | -                              | -                         | 1/1   |
| 5. Mr. Pakorn Nilrapunt             | 16/16              | 1/1                   | 1/1                       | 9/9             | -                                     | -                              | -                         | 1/1   |
| 6. Mr. Prapas Kong-ied              | 2/2                | 1/1                   | -                         | 2/2             | -                                     | -                              | -                         | -   |
| 7. Mr. Wittawat Svasti-xuto         | 14/16              | -                     | 0/1                       | -               | 5/5                                   | -                              | -                         | 1/1   |
| 8. Major General Nithi Chungcharoen | 15/16              | 1/1                   | 1/1                       | -               | 1/1                                   | 5/7                            | -                         | 1/1   |
| 9. Mrs. Watanan Petersik            | 12/16              | 1/1                   | 1/1                       | -               | -                                     | 7/7                            | -                         | 1/1   |
| 10. Mr. Disathat Panyarachun        | 16/16              | -                     | 1/1                       | -               | -                                     | 7/7                            | -                         | 1/1   |
| 11. Mrs. Premrutai Vinaiphath       | 14/14              | -                     | 1/1                       | -               | -                                     | -                              | 5/5                       | 1/1   |
| 12. Mrs. Arawadee Photisaro         | 16/16              | -                     | 0/1                       | -               | -                                     | -                              | 6/6                       | 1/1   |
| 13. Mr. Supattanapong Punmeechaow   | 16/16              | -                     | -                         | -               | -                                     | -                              | 5/6                       | 1/1   |
| 14. Mr. Kongkrapan Intarajang       | 3/3                | -                     | -                         | -               | -                                     | -                              | 1/1                       | -   |

### DIRECTORS WHO RETIRED BY ROTATION IN 2019

|                             |     |   |   |   |   |   |     |     |
|-----------------------------|-----|---|---|---|---|---|-----|-----|
| 1. Mr. Anon Sirisaengtaksin | 3/3 | - | - | - | - | - | 1/1 | 1/1 |
|-----------------------------|-----|---|---|---|---|---|-----|-----|

### DIRECTORS WHO RESIGNED IN 2019

|                                     |       |   |     |     |     |   |     |     |
|-------------------------------------|-------|---|-----|-----|-----|---|-----|-----|
| 1. Mr. Praphon Wongtharua           | 1/1   | - | -   | -   | -   | - | 1/1 | -   |
| 2. General Chatchalerm Chalermasukh | 1/1   | - | -   | -   | -   | - | -   | -   |
| 3. Mr. Amnuay Preemonwong           | 12/14 | - | 1/1 | 7/7 | 3/4 | - | -   | 1/1 |
| 4. Mr. Prasan Chuaphanich           | 14/14 | - | 1/1 | 8/8 | -   | - | -   | 1/1 |

## GC EXECUTIVES

To ensure efficient organizational management and operations that adhere to the policies and directions established by the Board of Directors, the Chief Executive Officer (CEO), exercising the power vested in him by GC's Articles of Association, formed the Management Committee (MC) and the Group Management Committee (GMC). Both committees are composed of top management from Senior Vice President upwards, under the CEO's direct supervision. The CEO, as head of the Company's employees, commands the authority and duties to ensure that the Company operates according to the policies, plans and budgets approved by the Board.

The MC is responsible for devising and aligning operational directions and guidelines with the Board's established policies. It analyzes and offers suggestions on the Company's policies and operational guidelines in relation to marketing, commercial and supply, risk management, capital allocation and management, human resources management and development, quality, safety, occupational health and environmental management, and social responsibility as well as matters that may cause significant changes to its Business Units and Group Performance Centers. The MC also analyzes and offers suggestions on Board meeting agenda prior to presenting them to the Board at the meeting. In extension, the MC also oversees the Company's compliance with the law and regulations

of external regulatory authorities, as well as its own rules and regulations and the Company's related legal actions to ensure that the conduct of GC's business is in compliance with good corporate governance principles, and in conformity to international standards. The MC oversees implementation under the Board's resolutions, suggestions and opinions given at Board meetings. It also oversees diverse aspects of GC's progress as a whole and internationally.

Meanwhile, the GMC is tasked with analyzing and offering recommendations and suggestions on the alignment of Company policies with those of its Group Performance Centers in relation to the operational guidelines for Group Performance Centers' production management, marketing, commercial and supply, and risk management, including human resource management and development, quality, safety, occupational health and environmental management, and social responsibility. It also monitors the progress of Group Performance Centers on innovation and technology, as well as projects that contribute to the efficiency of their operations.

The MC holds at least three meetings monthly, while the GMC holds at least one monthly meeting. In 2019, the MC held a total of 34 meetings, and GMC held a total of 12 meetings. The Senior Vice President of Corporate Secretary and Legal serves as Secretary to both committees.



## EXECUTIVES UNDER THE ORGANIZATIONAL STRUCTURE AS OF DECEMBER 31, 2019

| Name                               | Position   |
|------------------------------------|--|
| 1. Mr. Kongkrapan Intarajang       | Chief Executive Officer  |
| 2. Mr. Patiparn Sukorndhaman       | President  |
| 3. Mr. Varit Namwong               | Chief Operating Officer - Center of Excellence   |
| 4. Mr. Boonchai Chunhawiksit       | Acting Senior Executive Vice President - Upstream Petrochemical Business   |
| 5. Mr. Wiboon Chuhepchunkamon      | Acting Senior Executive Vice President - Downstream Petrochemical Business<br>Acting Senior Vice President - Green Chemicals Business Unit |
| 6. Mr. Athavuth Vikitsreth         | Executive Vice President - External Affairs  |
| 7. Miss Duangkamol Settanung       | Executive Vice President - Finance and Accounting  |
| 8. Mrs. Warawan Tippawanich        | Executive Vice President - Corporate Strategy  |
| 9. Mr. Saroj Putthammawong         | Executive Vice President - Marketing, Commercial and Supply  |
| 10. Mr. Narongsak Jivakanun        | Executive Vice President - International Business Operations   |
| 11. Mr. Pornsak Mongkoltrirat      | Acting Executive Vice President - Polymers Business Unit   |
| 12. Mr. Pirun Krimwongrut          | Acting Executive Vice President - Organizational Effectiveness   |
| 13. Mr. Pukpong Wungrattanasopon   | Acting Executive Vice President - Group Performance Center - Olefins   |
| 14. Mr. Kumpol Chaikitkosi         | Senior Vice President - EO-Based Performance Business Unit   |
| 15. Mr. Wirat Boonbumrungchai      | Senior Vice President - Quality, Safety, Occupational Health and Environment   |
| 16. Mr. Supasit Tongsupachok       | Senior Vice President - Group Performance Center - Utilities   |
| 17. Mr. Khomson Piyawattanaviroj   | Senior Vice President - CAPEX Excellence   |
| 18. Mrs. Wilawan Songjaroen        | Senior Vice President - Procurement  |
| 19. Mr. Amorn Putiphrawan          | Senior Vice President - Internal Audit   |
| 20. Mrs. Jeeranee Pimthanothai     | Senior Vice President - Technical, Engineering and Maintenance   |
| 21. Mr. Paisarn Sarapee            | Senior Vice President - Phenol Business Unit   |
| 22. Mr. Anutin Chuaypen            | Senior Vice President - Group Performance Center - Aromatics   |
| 23. Mrs. Chatsuda Kanjanarat       | Senior Vice President - Transformation Excellence  |
| 24. Mr. Ratchada Sawasdirak        | Senior Vice President - Group Performance Center - Refinery and Shared Facilities  |
| 25. Mr. Thitipong Jurapornsiridee  | Senior Vice President - Corporate Finance and Strategy   |
| 26. Mr. Chaya Chandavasu           | Senior Vice President - Sustainability and Corporate Branding  |
| 27. Mrs. Chananchida Wiboonkanarak | Senior Vice President - Downstream Strategy and Business Development   |
| 28. Mr. Kevin Thomas Corby         | Senior Vice President - Science and Innovation   |
| 29. Mrs. Pilsaphan Udomjarumane    | Senior Vice President - Corporate Secretary and Legal  |

**Remarks:**

Executives number 1-5 and 7 are executives under SEC's definition under the new Organization Structure, effective October 1, 2019.

## CHANGES IN EXECUTIVES FROM JANUARY 1 TO DECEMBER 31, 2019

1. Mr. Thitipong Jurapornsiridee was appointed Senior Vice President - Corporate Finance and Strategy on June 1, 2019.
2. Mrs. Wilawan Songjaroen was transferred Senior Vice President - Procurement on September 1, 2019.
3. Mr. Supattanapong Punmeechaow reassumed his position at PTT Public Company Limited on September 30, 2019.
4. Mr. Kongkrapan Intarajang was appointed CEO on October 1, 2019.
5. Mr. Patiparn Sukorndhaman was appointed President on October 1, 2019.
6. Mr. Boonchai Chunhawiksit was appointed Acting Senior Executive Vice President - Upstream Petrochemical Business on October 1, 2019.
7. Mr. Wiboon Chuchepchankamon was appointed Acting Senior Executive Vice President - Downstream Petrochemical Business and Acting Senior Vice President - Green Chemicals Business Unit, both on October 1, 2019.
8. Mr. Pukpong Wungrattanasopon was appointed Acting Executive Vice President - Group Performance Center - Olefins on October 1, 2019.
9. Mr. Anutin Chuaypen was transferred Senior Vice President - Group Performance Center - Aromatics on October 1, 2019.
10. Mr. Ratchada Sawasdirak was appointed Senior Vice President - Group Performance Center - Refinery and Shared Facilities on October 1, 2019.
11. Mr. Supasit Tongsupachok was appointed Senior Vice President - Group Performance Center - Utilities on October 1, 2019.
12. Mr. Pornsak Mongkoltrirat was appointed Acting Executive Vice President - Polymers Business Unit on October 1, 2019.
13. Mr. Kumpol Chaikitkosi was transferred Senior Vice President - EO-Based Performance Business Unit and was seconded to GC Glycol Company Limited on October 1, 2019.
14. Mr. Paisarn Sarapee was appointed Senior Vice President - Phenol Business Unit and was seconded to PTT Phenol Company Limited on October 1, 2019.
15. Mr. Narongsak Jivakanun was transferred Executive Vice President - International Business Operations and was assigned to PTTGC America Corporation in the USA on October 1, 2019.
16. Mr. Toasaporn Boonyapipat was transferred Executive Vice President under the Chief Executive Officer and was seconded to PTTGC America LLC in the USA on October 1, 2019.
17. Mr. Saroj Putthammawong was appointed Executive Vice President - Marketing, Commercial and Supply on October 1, 2019.
18. Mr. Pirun Krimwongrut was appointed Acting Executive Vice President - Organizational Effectiveness on October 1, 2019.
19. Mrs. Warawan Tippawanich was appointed Executive Vice President - Corporate Strategy on October 1, 2019.
20. Mr. Chaya Chandavasv was transferred Senior Vice President - Sustainability and Corporate Branding on October 1, 2019.
21. Mrs. Pilasphan Udomjarumanee was appointed Senior Vice President - Corporate Secretary and Legal on October 1, 2019.
22. Mr. Kevin Thomas Corby was appointed Senior Vice President - Center of Excellence since September 16, 2019, was transferred Senior Vice President - Science and Innovation on October 1, 2019.
23. Mr. Siridech Kumvongdee was transferred Executive Vice President under Downstream Petrochemical Business (SEVP-D) and was seconded to HMC Polymers Company Limited on December 13, 2019.
24. Mr. Athavuth Vikitsreth retired on December 31, 2019.

## COMPANY SECRETARY

Under the Securities and Exchange Act (No. 4) B.E. 2551 (2008), Sections 89/15 and 89/16, the Board of Directors at Meeting No. 10/2562 held on August 19, 2019 appointed Mrs. Pilasphan Udomjarumanee, Senior Vice President - Corporate Secretary and Legal, as Company Secretary replaced Mrs. Warawan Tippawanich. By law, the responsibilities of Company Secretary include the preparation and safekeeping of important company documents, including the register of directors, meeting notices, Board and shareholders' meeting minutes, annual report and conflicts of interest form filled by Directors and Executives. The Company Secretary is in charge of organizing Board and shareholders' meetings and submitting copies of reports on Directors and Executives interests to the Chairman of the Board of Directors and the Chairman of the Audit Committee. The Company Secretary also advises the Board and Executives on the rules and regulations they should familiarize themselves with, organizes training and orientation for current and new Directors, as well as providing them with information central to their performance as Directors. Moreover, the Company Secretary oversees compliance with laws, regulations and resolutions passed in Board and shareholders' meetings, as well as collaborates with relevant agencies on compliance. The Company Secretary has undergone training courses necessary for her to duly perform her roles.

## REMUNERATIONS FOR THE BOARD OF DIRECTORS AND EXECUTIVES

### REMUNERATIONS OF THE BOARD OF DIRECTORS

The Board of Directors has set up a fair and reasonable remuneration policy for its Directors in accordance with good corporate governance principles. The Nomination and Remuneration Committee determines suitable remuneration for Directors based on the Company's

financial standing and the practices of other SET listed companies in the same industry and of similar sizes, as well as each Director's responsibilities. Directors appointed to Sub-Committees are entitled to additional remuneration due to their additional responsibilities.

Directors' remuneration must be approved by the shareholders. At the 2019 Annual General Meeting of Shareholders, held on April 5, 2019, shareholders passed a resolution approving the 2019 remuneration of Directors and Directors to Sub-Committees and their bonus for the year 2018 as follows:

### REMUNERATION FOR THE BOARD OF DIRECTORS AND SUB-COMMITTEES

| Type of Remuneration  | Remuneration Rate  |
|---|--|
| 1. Board of Directors   | <p>Monthly Remuneration</p> <ul style="list-style-type: none"> <li>Chairman Baht 62,500/Month</li> <li>Director Baht 50,000/Month/Director</li> </ul> <p>Remuneration for Meeting Attendance</p> <ul style="list-style-type: none"> <li>Chairman Baht 50,000/Meeting</li> <li>Director Baht 40,000/Meeting/Director</li> </ul> |
| 2. Sub-Committees   | <p>Remuneration for Meeting Attendance</p> <ul style="list-style-type: none"> <li>Chairman Baht 56,250/Meeting</li> <li>Director Baht 45,000/Meeting/Director</li> </ul>   |
| <ul style="list-style-type: none"> <li>Audit Committee</li> <li>Nomination &amp; Remuneration Committee</li> <li>Corporate Governance Committee</li> <li>Risk Management Committee</li> </ul> |  |
| 3. Others   | No other remuneration  |

### DIRECTORS' BONUS FOR 2018 PERFORMANCE

Effective from the date of the 2019 Annual General Meeting of Shareholders, unless the shareholders' meeting passes a new resolution, the Board of Directors as a group is to be awarded a bonus for the year when a dividend payment is made to the shareholders. The total sum of this bonus

equals 0.30% of the year's net profit and up to Baht 60 million. Each Director's bonus is calculated based on the time served in a corresponding year, and the Chairman's bonus is to be 25% higher than those of other Directors. In 2019, the Board of Directors collectively received a bonus of Baht 60 million.

## DIRECTOR'S REMUNERATIONS IN 2019

| Name                                | Monthly Remuneration for PTTGC Directors (Baht) | Remuneration for Meeting Attendance (Baht) | Remuneration for Sub-Committees Meeting Attendance (Baht) |                                       |                                |                           | 2018 Bonus paid in 2019 (Baht)* | Total (Baht) |
|-------------------------------------|---|--|---|---------------------------------------|--------------------------------|---------------------------|---------------------------------|--------------|
|                                     |   |  | Audit Committee   | Nomination and Remuneration Committee | Corporate Governance Committee | Risk Management Committee |                                 |              |
| 1. Mr. Piyasvasti Amranand          | 742,166.67                                      | 810,000.00                                 | -   | -                                     | -                              | -                         | 3,572,951.15                    | 5,125,117.82 |
| 2. Mr. Prasert Bunsumpun            | 600,000.00                                      | 640,000.00                                 | -   | -                                     | -                              | 331,250.00                | 4,299,514.71                    | 5,870,764.71 |
| 3. Professor Somkit Lertpaithoon    | 600,000.00                                      | 640,000.00                                 | -   | -                                     | 437,500.00                     | -                         | 2,906,254.25                    | 4,583,754.25 |
| 4. Mr. Don Wasantapruek             | 600,000.00                                      | 640,000.00                                 | -   | 271,250.00                            | -                              | -                         | 3,972,969.30                    | 5,484,219.30 |
| 5. Mr. Pakorn Nilrapunt             | 600,000.00                                      | 640,000.00                                 | 425,000.00  | -                                     | -                              | -                         | 2,906,254.25                    | 4,571,254.25 |
| 6. Mr. Prapas Kong-ied              | 100,000.00                                      | 80,000.00                                  | 45,000.00   | -                                     | -                              | -                         | -                               | 225,000.00   |
| 7. Mr. Wittawat Svasti-xuto         | 600,000.00                                      | 570,000.00                                 | -   | 260,000.00                            | -                              | -                         | 3,439,611.77                    | 4,869,611.77 |
| 8. Major General Nithi Chungcharoen | 600,000.00                                      | 600,000.00                                 | -   | 45,000.00                             | 260,000.00                     | -                         | 3,972,969.30                    | 5,477,969.30 |
| 9. Mrs. Watanan Petersik            | 600,000.00                                      | 490,000.00                                 | -   | -                                     | 350,000.00                     | -                         | 3,972,969.30                    | 5,412,969.30 |
| 10. Mr. Disathat Panyarachun        | 600,000.00                                      | 640,000.00                                 | -   | -                                     | 350,000.00                     | -                         | 772,824.16                      | 2,362,824.16 |
| 11. Mrs. Premrutai Vinaiphath       | 519,642.86                                      | 550,000.00                                 | -   | -                                     | -                              | 225,000.00                | -                               | 1,294,642.86 |
| 12. Mrs. Arawadee Photisaro         | 600,000.00                                      | 640,000.00                                 | -   | -                                     | -                              | 265,000.00                | 772,824.16                      | 2,277,824.16 |
| 13. Mr. Supattanapong Punmeechaow   | 600,000.00                                      | 640,000.00                                 | -   | -                                     | -                              | 220,000.00                | 3,972,969.30                    | 5,432,969.30 |
| 14. Mr. Kongkrapan Intarajang**     | 150,000.00                                      | 120,000.00                                 | -   | -                                     | -                              | 45,000.00                 | -                               | 315,000.00   |

Directors who resigned and retired by rotation in 2018-2019 and earned remuneration in 2019

|  |                     |                     |                     |                   |                     |                     |                      |                      |
|--|---------------------|---------------------|---------------------|-------------------|---------------------|---------------------|----------------------|----------------------|
| 1. Mr. Praphon Wongtharua***           | 58,928.57           | 60,000.00           | -                   | -                 | -                   | 40,000.00           | 3,972,969.30         | 4,131,897.87         |
| 2. General Chatchalerm Chalermsook***  | 43,010.75           | 40,000.00           | -                   | -                 | -                   | -                   | -                    | 83,010.75            |
| 3. Mr. Amnuay Preemonwong***           | 500,000.00          | 480,000.00          | 380,000.00          | 212,500.00        | -                   | -                   | 3,972,969.30         | 5,545,469.30         |
| 4. Mr. Prasan Chuaphanich***           | 528,333.33          | 560,000.00          | 531,250.00          | -                 | -                   | -                   | 3,972,969.30         | 5,592,552.63         |
| 5. Mr. Anon Sirisaengtaksin****        | 158,333.33          | 120,000.00          | -                   | -                 | -                   | 40,000.00           | 3,972,969.30         | 4,291,302.63         |
| 6. Mr. Sarun Rungkasiri*****           | -                   | -                   | -                   | -                 | -                   | -                   | 348,315.12           | 348,315.12           |
| 7. Mr. Auttapol Rerkpiboon *****       | -                   | -                   | -                   | -                 | -                   | -                   | 2,982,448.18         | 2,982,448.18         |
| 8. Mrs. Boobpha Amornkiatkajorn*****   | -                   | -                   | -                   | -                 | -                   | -                   | 2,982,448.18         | 2,982,448.18         |
| 9. Mr. Vasin Teeravechyan*****         | -                   | -                   | -                   | -                 | -                   | -                   | 1,077,599.89         | 1,077,599.89         |
| 10. Professor Surapon Nitikraipot***** | -                   | -                   | -                   | -                 | -                   | -                   | 1,077,599.89         | 1,077,599.89         |
| 11. Mr. Somchai Kuvijitsuwan*****      | -                   | -                   | -                   | -                 | -                   | -                   | 1,077,599.89         | 1,077,599.89         |
| <b>Grand Total</b>                     | <b>8,800,415.51</b> | <b>8,960,000.00</b> | <b>1,381,250.00</b> | <b>788,750.00</b> | <b>1,397,500.00</b> | <b>1,166,250.00</b> | <b>60,000,000.00</b> | <b>82,494,165.51</b> |

### Remarks:

The Company provides a corporate vehicle for the Chairman throughout his term for corporate-related activities only.

\* Bonus for 2018 performance paid in 2019 for time served in 2018 within a budget of Baht 60 million.

\*\* Remuneration for directorship only; executive remuneration was not included.

\*\*\* Four Directors who resigned as Directors in 2019 were Mr. Praphon Wongtharua (effective February 6, 2019), General Chatchalerm Chalermsook (effective May 7, 2019), Mr. Amnuay Preemonwong (effective November 1, 2019), and Mr. Prasan Chuaphanich (effective November 18, 2019).

\*\*\*\* One Director who retired by rotation in 2019 was Mr. Anon Sirisaengtaksin. His term ended on April 5, 2019.

\*\*\*\*\* The three Directors who resigned in 2018 were Mr. Sarun Rungkasiri (effective February 1, 2018), Mr. Auttapol Rerkpiboon and Mrs. Boobpha Amornkiatkajorn (effective October 1, 2018).

\*\*\*\*\* The three Directors who retired by rotation in 2018 were Mr. Vasin Teeravechyan, Professor Surapon Nitikraipot and Mr. Somchai Kuvijitsuwan. Their terms ended on April 9, 2018.

## REMUNERATION OF THOSE RECEIVING FROM BEING AN INDEPENDENT DIRECTOR OF A PARENT COMPANY

GC's Independent Director who is an independent director of PTT Public Company Limited, the parent company, received the remuneration as follows:

| No. | Name - Surname        | PTT Public Company Limited (PTT)                           |  |  |                                |              |
|-----|-----------------------|--|--|--|--------------------------------|--------------|
|     |                       | Position   | Remuneration for the Year 2019                         | Sub-Committee Meeting Allowance (Baht) | 2018 Bonus Paid in 2019 (Baht) | Total (Baht) |
|     |                       | Chairman/ Director   | Meeting Allowance (Including Monthly Allowance) (Baht) |  |                                |              |
| 1   | Mr. Don Wasantapruerk | Independent Director/ Chairman of the Nomination Committee | 1,230,000  | 292,500                                | 3,191,853.98                   | 4,714,353.98 |

## DIRECTORS' REMUNERATION FOR DIRECTORSHIPS AT MAJOR SUBSIDIARIES

The Company's Directors hold directorships at subsidiaries to ensure that their businesses are operated in compliance with GC Group's policies.

| Name  | Position | Total Remuneration |
|---|----------|--------------------|
| PTTGC International Private Limited (Wholly 100% Owned Subsidiary)  |          |                    |
| Mr. Kongkrapan Intarajang   | Director | 12,000 SGD         |
| Global Green Chemicals Public Company Limited (72.29% Shareholding) |          |                    |
| Mr. Supattanapong Punmeechaow                                       | Chairman | 450,000 Baht       |

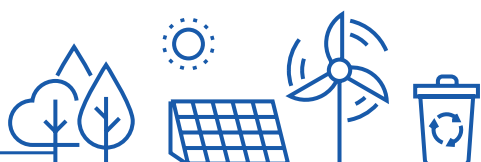


**SHARES HELD BY THE BOARD OF DIRECTORS, THEIR SPOUSES & THEIR MINORS  
AS OF DECEMBER 31, 2019**

| Name                                | Number of Shares                                   |                         |  |
|-------------------------------------|--|-------------------------|--|
|                                     | As of January 1, 2019                              | As of December 31, 2019 | Increase / (Decrease) of Shares during the Year (Shares) |
| 1. Mr. Piyasvasti Amranand          | -None-   | -None-                  | -No Change-  |
| 2. Mr. Prasert Bunsumpun            | -None-   | -None-                  | -No Change-  |
| Spouse                              | 271,142  | 271,142                 | -No Change-  |
| 3. Mr. Prasan Chuaphanich*          | -None-   | N/A                     | -No Change-  |
| 4. Professor Somkit Lertpaithoon    | -None-   | -None-                  | -No Change-  |
| 5. Mr. Don Wasantapruerk            | -None-   | -None-                  | -No Change-  |
| 6. Mr. Pakorn Nilrapunt             | -None-   | -None-                  | -No Change-  |
| 7. Mr. Prapas Kong-ied              | N/A  | -None-                  | -  |
| 8. Mr. Wittawat Svasti-xuto         | 3,415  | 3,415                   | -No Change-  |
| 9. Major General Nithi Chungcharoen | -None-   | -None-                  | -No Change-  |
| 10. Mrs. Watanan Petersik           | -None-   | -None-                  | -No Change-  |
| 11. Mr. Disathat Panyarachun        | -None-   | -None-                  | -No Change-  |
| Spouse                              | 80   | 80                      | -No Change-  |
| 12. Mrs. Premrutai Vinaiphath       | N/A  | -None-                  | -  |
| 13. Mrs. Arawadee Photisaro         | 153  | 153                     | -No Change-  |
| 14. Mr. Supattanapong Punmeechaow   | 60,000   | 100,000                 | 40,000   |
| 15. Mr. Kongkrapan Intarajang       | -None-<br>Appointed Director on<br>October 1, 2019 | -None-                  | -No Change-  |

**Remarks:**

\* (1) Mr. Prasan Chuaphanich resigned from his position as Director, effective November 18, 2019.



## SHARES HELD BY EXECUTIVES UNDER SEC'S DEFINITION, THEIR SPOUSES & THEIR MINORS

| Name                           | Number of Shares      |                         |  |
|--------------------------------|-----------------------|-------------------------|--|
|                                | As of January 1, 2019 | As of December 31, 2019 | Increase / (Decrease) of Shares during the Year (Shares) |
| 1. Mr. Kongkrapan Intarajang   | -None-                | -None-                  | -No Change-  |
| 2. Mr. Patiparn Sukorndhaman   | -None-                | -None-                  | -No Change-  |
| 3. Mr. Varit Namwong           | 108,939               | 108,939                 | -No Change-  |
| 4. Mr. Boonchai Chunhawiksit   | N/A                   | 40,000                  | -  |
| 5. Mr. Wiboon Chuchepchunkamon | N/A                   | -None-                  | -  |
| Spouse                         | N/A                   | 198                     | -  |
| 6. Miss Duangkamol Settanung   | -None-                | -None-                  | -No Change-  |
| 7. Mr. Siridech Kumvongdee     | 91                    | 91                      | -No Change-  |
| Spouse                         | 11,515                | 11,515                  | -No Change-  |
| 8. Mr. Narongsak Jivakanun     | -None-                | -None-                  | -No Change-  |
| 9. Mr. Toasaporn Boonyapipat   | -None-                | -None-                  | -No Change-  |
| 10. Mr. Athavuth Vikitsreth    | -None-                | -None-                  | -No Change-  |

### Remarks:

- There has been a change of GC's organization structure, which could be divided into two periods. The first is from January-September 2019, and the second is from October-December 2019.
- Executives under SEC's definition number 1-3 and 6-10 are executives under the former Organization Structure, from January-September 2019.
- Executives under SEC's definition number 1-6 are executives under the new Organization Structure, from October-December 2019.

## REMUNERATION OF THE EXECUTIVES

The Company evaluates the performance of its Executives annually against the pre-determined Key Performance Indicators (KPIs). These include financial performance, implementation of long-term strategic goals, personal performance, the Company's performance and practices of other listed companies in the same industry and of similar sizes. The evaluation also takes into account their responsibilities, management development and overall economic conditions.

The remuneration for the Chief Executive Officer is appropriately determined using transparent, fair and reasonable criteria. The position's duties and responsibilities are also taken into account in conjunction with personal performance. The Nomination and Remuneration Committee is charged with reviewing and proposing the remuneration of the Chief Executive Officer to the Board of Directors for approval. It should be noted that, at the highest level of the Company's management hierarchy, the Chief Executive Officer is awarded compensation and other benefits in addition to those received as a Director on the Board of Directors.

## TOTAL REMUNERATION OF GC AND GC SUBSIDIARIES PAID TO THE EXECUTIVES UNDER SEC'S DEFINITION\* SERVING IN 2019 (INCLUDING THOSE WHO RETIRED AND RESIGNED IN 2019)

| Type of Remuneration           | Number of Executives | Total (Million Baht) |                 |               |
|--------------------------------|----------------------|----------------------|-----------------|---------------|
|                                |                      | GC                   | GC Subsidiaries | Total         |
| Total Combined Salaries        | 10                   | 75                   | 8.73            | 83.73         |
| Total Combined Special Bonuses | 10                   | 37                   | -               | 37            |
| Provident Fund Contributions   | 10                   | 10                   | -               | 10            |
| <b>Total</b>                   |                      |                      |                 | <b>130.73</b> |

### Remarks:

- \*The Company's organization structure was divided into two periods. The first is from January-September 2019 and the second is from October-December 2019.

## EMPLOYEES

As of December 31, 2019, the Company hired a total of 6,925 employees, including those employed by its subsidiaries, according to business structure, which can be divided into the following functions:

|  |               |
|--|---------------|
| 1. Direct reports to the Chief Executive Officer and President   | 6 Employees   |
| 2. Internal Audit  | 28 Employees  |
| 3. International Business Operations and subsidiaries  | 672 Employees |
| 4. Corporate Strategy  | 54 Employees  |
| 5. Finance and Accounting and subsidiaries   | 203 Employees |
| 6. Organizational Effectiveness  | 259 Employees |
| 7. Corporate Secretary and Legal   | 49 Employees  |
| 8. Sustainability and Corporate Branding   | 59 Employees  |
| 9. External Affairs  | 17 Employees  |
| 10. Direct reports to Senior Executive Vice President - Upstream Petrochemical Business and subsidiaries | 144 Employees |
| 11. Group Performance Center - Aromatics   | 332 Employees |
| 12. Group Performance Center - Refinery and Shared Facilities and subsidiaries                           | 313 Employees |
| 13. Group Performance Center - Olefins   | 698 Employees |
| 14. Group Performance Center - Utilities   | 258 Employees |
| 15. Direct reports to Senior Executive Vice President - Downstream Petrochemical Business                | 126 Employees |
| 16. Polymers Business Unit and subsidiaries  | 866 Employees |
| 17. EO-Based Performance Business Unit and subsidiaries  | 167 Employees |
| 18. Phenol Business Unit and subsidiaries  | 233 Employees |
| 19. Green Chemicals Business Unit and subsidiaries   | 224 Employees |
| 20. Downstream Strategy and Business Development and subsidiaries  | 182 Employees |
| 21. Marketing, Commercial and Supply   | 102 Employees |
| 22. Direct reports to Chief Operating Officer - Center of Excellence and subsidiaries                    | 911 Employees |
| 23. Technical, Engineering and Maintenance   | 479 Employees |
| 24. CAPEX Excellence   | 183 Employees |
| 25. Quality, Safety, Occupational Health and Environment   | 173 Employees |
| 26. Transformation Excellence  | 37 Employees  |
| 27. Procurement  | 98 Employees  |
| 28. Science and Innovation   | 52 Employees  |

## TOTAL REMUNERATION PAID TO EMPLOYEES IN 2019

| Type of Remuneration                      | Total (Million Baht) |
|---|----------------------|
| Salaries, Bonus, Wages and Other Welfares | 14,714               |
| Provident Fund Contributions              | 630                  |
| Long-Term Employee Benefits               | 1,418                |
| Other Long-Term Employee Benefits         | 84                   |

**LIST OF THE BOARD OF DIRECTORS IN SUBSIDIARIES/JOINT VENTURES/AFFILIATES  
(AS OF JANUARY 1, 2020)**

| No. | Name - Surname                   | GC  | Subsidiaries |          |                           |                   |           | Joint Ventures |       | Affiliates |          |      |
|-----|----------------------------------|-----|--------------|----------|---------------------------|-------------------|-----------|----------------|-------|------------|----------|------|
|     |                                  |     | GGC          | GC Inter | PTTGC America Corporation | PTTGC America LLC | PTTGC USA | GPSC           | PTTES | PTT        | PTTT LDN | PTTT |
| 1.  | Mr. Piyasvasti Amranand          | ▲   |              |          |                           |                   |           |                |       |            |          |      |
| 2.  | Mr. Prasert Bunsumpun            | ■   |              |          |                           |                   |           |                |       |            |          |      |
| 3.  | Mr. Prasan Chuaphanich*          | ■   |              |          |                           |                   |           |                |       |            |          |      |
| 4.  | Mr. Prapas Kong-ied              | ■   |              |          |                           |                   |           |                |       |            |          |      |
| 5.  | Professor Somkit Lertpaithoon    | ■   |              |          |                           |                   |           |                |       |            |          |      |
| 6.  | Mr. Pakorn Nilrapunt             | ■   |              |          |                           |                   |           |                |       |            |          |      |
| 7.  | Mrs. Watanan Petersik            | ■   |              |          |                           |                   |           |                |       |            |          |      |
| 8.  | Mr. Don Wasantapruerk            | ■   |              |          |                           |                   |           |                |       | ■          |          |      |
| 9.  | Major General Nithi Chungcharoen | ■   |              |          |                           |                   |           |                |       |            |          |      |
| 10. | Mrs. Premrutai Vinaiphath        | ■   |              |          |                           |                   |           |                |       |            |          |      |
| 11. | Mr. Wittawat Svasti-xuto         | ■   |              |          |                           |                   | ■         | ▲              | ●     |            |          |      |
| 12. | Mrs. Arawadee Photisarok         | ■   |              |          |                           |                   |           |                | ●     |            |          |      |
| 13. | Mr. Disathat Panyarachun         | ■   |              |          |                           |                   |           |                | ●     | ▲          | ■        |      |
| 14. | Mr. Supattanapong Punmeechaow    | ■   | ▲            |          |                           |                   |           |                | ■     |            |          |      |
| 15. | Mr. Kongkrapan Intarajang        | ■ ● |              | ■        | ▲                         | ▲                 | ■         | ■              |       | ●          |          |      |

\* Mr. Prasan Chuaphanich resigned from his position as director from November 18, 2019.

**Remarks:** ▲ = Chairman  
■ = Director  
● = Executive

**Subsidiaries**  
GGC = Global Green Chemicals Public Company Limited  
GC Inter = PTTGC International Private Limited  
PTTGC America Corporation = PTTGC America Corporation  
PTTGC America LLC = PTTGC America LLC  
PTTGC USA = PTTGC International (USA) Inc.

**Joint Ventures/Affiliates**  
PTT = PTT Public Company Limited  
GPSC = Global Power Synergy Public Company Limited  
PTTT LDN = PTT International Trading London Ltd  
PTTT = PTT International Trading Pte Ltd  
PTTES = PTT Energy Solutions Company Limited



**LIST OF DIRECTORS IN SUBSIDIARIES WHOLLY 100% OWNED BY THE COMPANY  
(AS OF JANUARY 31, 2020)**

**1. GC Glycol Company Limited**

| List of Directors                 | Position                       |
|-----------------------------------|--------------------------------|
| 1. Mr. Wiboon Chuhepchunkamon     | Chairman                       |
| 2. Mr. Boonchai Chunhawiksit      | Director                       |
| 3. Mr. Saroj Putthammawong        | Director                       |
| 4. Mrs. Chananchida Wiboonkanarak | Director                       |
| 5. Mr. Kumpol Chaikitkosi         | Director/<br>Managing Director |

**2. PTT Phenol Company Limited**

| List of Directors                 | Position                       |
|-----------------------------------|--------------------------------|
| 1. Mr. Bowon Vongsinudom          | Chairman                       |
| 2. Mr. Wiboon Chuhepchunkamon     | Director                       |
| 3. Miss Duangkamol Settanung      | Director                       |
| 4. Mr. Pukpong Wungrattanasopon   | Director                       |
| 5. Mrs. Chananchida Wiboonkanarak | Director                       |
| 6. Mr. Pramin Phantawesak         | Director                       |
| 7. Mr. Paisarn Sarapee            | Director/<br>Managing Director |

**3. GC Styrenics Company Limited**

| List of Directors            | Position                       |
|------------------------------|--------------------------------|
| 1. Mr. Pornsak Mongkoltrirat | Chairman                       |
| 2. Mr. Pirun Krimwongrut     | Director                       |
| 3. Mr. Kumpol Chaikitkosi    | Director                       |
| 4. Mr. Anutin Chuaypen       | Director                       |
| 5. Mr. Anupong Phitukpong    | Director/<br>Managing Director |

**4. Solution Creation Company Limited**

| List of Directors                 | Position                       |
|-----------------------------------|--------------------------------|
| 1. Mr. Patiparn Sukorndhaman      | Chairman                       |
| 2. Mr. Wiboon Chuhepchunkamon     | Director                       |
| 3. Mrs. Warawan Tippawanich       | Director                       |
| 4. Mrs. Chananchida Wiboonkanarak | Director                       |
| 5. Mr. Weerayuth Lorsathian       | Director/<br>Managing Director |

**5. NPC Safety and Environmental Service Company Limited**

| List of Directors               | Position                       |
|---------------------------------|--------------------------------|
| 1. Mr. Varit Namwong            | Chairman                       |
| 2. Mr. Wirat Boonbumrungchai    | Director                       |
| 3. Mr. Khomson Piyawattanaviroj | Director                       |
| 4. Mr. Anutin Chuaypen          | Director                       |
| 5. Mr. Kridsada Prasertsuko     | Director/<br>Managing Director |

**6. PTTGC International Private Limited**

| List of Directors            | Position                       |
|------------------------------|--------------------------------|
| 1. Mr. Anon Sirisaengtaksin  | Chairman                       |
| 2. Mr. Kongkrapan Intarajang | Director                       |
| 3. Miss Duangkamol Settanung | Director                       |
| 4. Mr. Narongsak Jivakanun   | Director/<br>Managing Director |

**7. PTTGC America Corporation**

| List of Directors            | Position                       |
|------------------------------|--------------------------------|
| 1. Mr. Kongkrapan Intarajang | Chairman                       |
| 2. Mr. Varit Namwong         | Director                       |
| 3. Miss Duangkamol Settanung | Director                       |
| 4. Mrs. Warawan Tippawanich  | Director                       |
| 5. Mr. Toasaporn Boonyapipat | Director                       |
| 6. Mr. Narongsak Jivakanun   | Director/<br>Managing Director |

#### 8. GC Marketing Solutions Company Limited

| List of Directors              | Position               |
|--------------------------------|------------------------|
| 1. Mr. Patiparn Sukorndhaman   | Chairman               |
| 2. Mr. Varit Namwong           | Director               |
| 3. Mr. Wiboon Chuchepchunkamon | Director               |
| 4. Mr. Pornsak Mongkoltrirat   | Director               |
| 5. Mr. Saroj Putthammawong     | Director               |
| 6. Mr. Thitipol Artsanchorn    | Director/<br>President |

#### 9. GC Logistics Solutions Company Limited

| List of Directors            | Position                       |
|------------------------------|--------------------------------|
| 1. Mr. Pornsak Mongkoltrirat | Chairman                       |
| 2. Mrs. Wilawan Songjaroen   | Director                       |
| 3. Mr. Thitipol Artsanchorn  | Director                       |
| 4. Mr. Supasit Tongsupachok  | Director                       |
| 5. Mr. Amnuai Phrom-Anant    | Director/<br>Managing Director |

#### 10. GC Maintenance and Engineering Company Limited

| List of Directors             | Position                       |
|-------------------------------|--------------------------------|
| 1. Mr. Varit Namwong          | Chairman                       |
| 2. Mr. Boonchai Chunhawiksit  | Director                       |
| 3. Mr. Pornsak Mongkoltrirat  | Director                       |
| 4. Mrs. Jeeranee Pimthanothai | Director                       |
| 5. Mr. Piroj Samutthananont   | Director/<br>Managing Director |

#### 11. GC Oxirane Company Limited

| List of Directors                | Position                       |
|----------------------------------|--------------------------------|
| 1. Mr. Wiboon Chuchepchunkamon   | Chairman                       |
| 2. Mr. Saroj Putthammawong       | Director                       |
| 3. Mr. Thitipong Jurapornsiridee | Director                       |
| 4. Mr. Kumpol Chaikitkosi        | Director                       |
| 5. Mr. Somnuk Suwanpradit        | Director/<br>Managing Director |

#### 12. GC Treasury Center Company Limited

| List of Directors              | Position                       |
|--------------------------------|--------------------------------|
| 1. Miss Duangkamol Settanung   | Chairman                       |
| 2. Mr. Saroj Putthammawong     | Director                       |
| 3. Mr. Chusak Wittayakajohnsad | Director                       |
| 4. Mrs. Natchalee Phadungsidh  | Director/<br>Managing Director |

#### 13. GC Estate Company Limited

| List of Directors               | Position                       |
|---------------------------------|--------------------------------|
| 1. Mr. Boonchai Chunhawiksit    | Chairman                       |
| 2. Mr. Pirun Krimwongrut        | Director                       |
| 3. Mr. Supasit Tongsupachok     | Director                       |
| 4. Mrs. Rattana Nakasiri        | Director                       |
| 5. Mrs. Wacharee Hanwongpaiboon | Director/<br>Managing Director |

#### 14. GC Ventures Company Limited

| List of Directors          | Position |
|----------------------------|----------|
| 1. Mr. Narongsak Jivakanun | Chairman |
| 2. Mr. Chaya Chandavasu    | Director |
| 3. Mrs. Warawan Tippawan   | Director |
| 4. Mr. Kevin Thomas Corby  | Director |

LIVE A  
**CIRCULAR**  
**LIFESTYLE**



**GOOD  
CORPORATE  
GOVERNANCE**

# GOOD CORPORATE GOVERNANCE

## CORPORATE GOVERNANCE POLICY

GC, under the supervision of the Board of Directors, is committed to maintaining its corporate governance standard in conformity with international standards since its establishment in 2011. To this end, Corporate Governance Policy has been established as part of the Business Operations Policy. The Corporate Governance Committee has been assigned to oversee matters and ensure that GC's corporate governance practices meet international standards and align with the Company's business strategies and directions as well as any other requirements, laws and guidelines. Additionally, the Corporate Governance Committee annually monitors and assesses the effectiveness of the Company's adherence to good corporate governance principles at each Sub-Committee meetings. Its assessment results are regularly reported to the Board of Directors and later disclosed to the shareholders in the annual report.

## CORPORATE GOVERNANCE AND BUSINESS CODE OF CONDUCT

The Board of Directors approved the implementation of 'Corporate Governance and Business Code of Conduct Handbook' comprising of two parts: the first is good corporate governance structure and principles which align with corporate governance policy; and the second is business code of conduct consisting of principles and best practices for ethical business operations, such as observance of laws, rules and regulations, anti-corruption measures, responsibility towards stakeholders, human rights, consumer rights and fair treatment of workers. This handbook had been distributed to directors, executives and all employees. They were later to sign an acknowledgment of the handbook and were bound to uphold good corporate governance policy and the handbook as guidelines when carrying out their duties. In this year, the Board of Directors' Meeting No. 1/2019 held on January 21, 2019 considered approving the 2019 revision of Corporate Governance and Business Code of Conduct Handbook to ensure that its contents are in accordance with national and international standards.

At the same time, the Board of Directors and executives serve as role models to promote a culture of good corporate governance. They indeed provide mechanisms to oversee, monitor, assess and review employees' effective and complete adherence to the Business Code of Conduct. Additionally, the Business Code of Conduct is distributed to joint-ventures companies and business partners and is published at [www.pttgcgroup.com](http://www.pttgcgroup.com) on the topic of corporate governance in order that shareholders, investors, regulatory authorities, stakeholders and individuals are able to access the handbook conveniently.

## CORPORATE COMPLIANCE

Acknowledging that compliance with laws or even more stringent standards promotes sustainable development, GC places importance on operating its businesses in full compliance with relevant regulatory and legal requirements at home and overseas. In 2019, the Company adopted the ISO 19600 (Compliance Management Systems-Guidelines: 2014 (E)) internal standard as its operational framework in order to ensure the organization culture of integrity and compliance. Its organizational culture is comprised of six stages: (1) Establish; (2) Develop; (3) Implement; (4) Evaluate; (5) Maintain; and (6) Improve. At the operational level, the first line of defense has prepared and disseminated information on the corporate compliance comprising of three processes, namely (1) Assessment - to identify major non-compliance risks; (2) Prevention - to define measures for compliance control and minimize non-compliance risk; and (3) Correction and Improvement - to appropriately manage matters that deviate from the standard and to regularly review and improve compliance control measures.

Furthermore, GC appointed the committee to strengthen the integration of Governance, Risk Management & Internal Control and Compliance through GRC Approach. This will lead to organizational integrated system of policies and practices and information sharing throughout the organization which improve the company's overall efficiency.



**DELIVERY CEREMONY OF CORPORATE GOVERNANCE AND BUSINESS CODE OF CONDUCT HANDBOOK, 2019 REVISION, TO THE BOARD OF DIRECTORS AND GROUP MANAGEMENT COMMITTEE**

For knowledge dissemination in the organization, GC implemented training program, namely Compliance Mandatory for Managers, in order that executives are able to operate its business with integrity and in accordance with principles of fiduciary duty and to ensure that its business operations are in line with any relevant regulations.

GC also organized training program to provide employees current and necessary information, such as (1) Confidential Information and Data Classification (2) Fraud Risk Management (3) Comply with Compliance and Code of Conduct (4) Complaint Management for Investigation Committee.

For compliance monitoring, GC applies compliance assessment checklist to GC and its subsidiaries, requesting them to identify non-conformance or non-compliance issues in order that GC can create appropriate compliance control measures.

In addition, Management Committee has managed and monitored compliance oversight process throughout the Company as well as reporting the progress to the Board of Directors for their acknowledgement and comments. This can ensure that GC's corporate compliance process is more efficient and in accordance with international standards.

### **DISSEMINATION OF GOOD CORPORATE GOVERNANCE PRINCIPLES**

GC has communicated corporate governance principle, namely C R E A T E, comprising of six elements : Creation of long-term value for the organization; Responsibility of discharging its duties; Equitable treatment of all stakeholders; Accountability for decision along with availability of explanation to support the decision; Transparency in operations which

allows for an audit, including accurate, complete and timely information disclosure via appropriate channels; and Ethics in business conduct, to its employees for their acknowledgement since the first day of work. GC also continuously underlines and instills corporate governance principle into its employees through training programs and other activities. In 2019, to illustrate this, GC created E-Learning program on intranet in order that executives and employees can sign an acknowledgment of 2019 revision of CG handbook and take an assessment test, and organized onsite communication, namely Hook Walk, to communicate corporate governance practices and business code of conduct to its employees of each business unit, including those working in GC's factories. GC further organized an event, called GC Group CG Day 2019: Transparency, Zero Corruption, to raise awareness of executives and employees as well as encouraging them to be part of prevention and fight against any forms of corruption. In addition to above-mentioned activities, GC implemented the board performance assessment, employees' acknowledgment assessment on adherence to good corporate governance principle.



**GC GROUP CG DAY 2019 : TRANSPARENCY AND ZERO CORRUPTION**

Additionally, GC's corporate governance practices are assessed by regulatory authorities, such as the Securities and Exchange Commission (SEC), Stock Exchange of Thailand (SET), Thai Institute of Directors Association (IOD) and Thai Investors Association (TIA) in order to ensure the Company's adherence to Corporate Governance Code as well as maintaining its corporate practices to be in line with international standards. Furthermore, executives are responsible for communicating "Hook Talk" on topic areas of good corporate governance and compliance principles to its employees through internal meetings of each business unit. Hook Talk is aimed at noticing its employees to behave ethically and strictly perform their duties in accordance with good corporate governance principles, the Company's regulations, laws and any other rules.

## COMPLIANCE WITH INTERNATIONAL STANDARDS OF GOOD CORPORATE GOVERNANCE

The Board of Directors has continuously placed importance on adherence to good corporate governance principles of international standards, including ASEAN CG Scorecard and Dow Jones Sustainability Indices (DJSI), and indeed encouraged the company to apply Good Corporate Governance principles, comprising of five core values, to its business operations. In this year, GC has complied with the said principles as per details given below.

### 1. SHAREHOLDER RIGHTS

Placing much emphasis on the protection of shareholder rights, the Board of Director has included shareholder rights protection principles in the handbook. The Board also oversees the company's business operation to be in compliance with the said principles.

#### 1. THE PROVISION OF IMPORTANT AND PERTINENT INFORMATION TO SHAREHOLDERS

GC afforded shareholders clear, up-to-date information of importance and pertinence to its business operations. To this end, it disclosed information deemed necessary, though not legally required, on its website and via SET's portal.

#### 2. THE 2019 ANNUAL GENERAL MEETING OF SHAREHOLDERS

GC held Annual General Meeting of Shareholders for the year 2019 (AGM) at 14.00 hours on Friday, April 5, 2019, at the Bangkok Convention Center on the 5<sup>th</sup> floor of Central Plaza Lardprao, 1695 Phahon Yothin Road, Chatuchak Sub-district, Chatuchak District, Bangkok. GC also treated and facilitated

convenience among its attending shareholders as per details given below.

#### Prior to the Meeting

- Minority shareholders, defined as any single shareholder or a group of shareholders holding at least 0.1% of all shares with eligible voting rights, were allowed to, via SET's portal and the Company's website, propose agenda items and nominate qualified candidates to be elected as Directors, with clear criteria and steps specified, from September 17 to December 31, 2018.
- Nominated candidates and proposed agenda items would be considered under the established criteria. The Nomination and Remuneration Committee would consider whether the proposed candidates possessed desired qualifications. Meanwhile, the Corporate Governance Committee would review and select proposed agenda items and then submit it to the Board of Directors for their final approval. The Board will later inform the shareholders of its decision and reasons to the AGM. For the year 2019, there were no shareholders proposing any agenda items or candidates nominated to be director to the Company.
- According to resolutions of the Board of Directors' meeting held on February 18, 2019, GC instantly notified SET after the meeting to disseminate the news to its shareholders that the 2019 AGM will be held on April 5, 2019, and the record date was set for March 6, 2019, to afford shareholders the rights to attend 2019 AGM and receive dividend payment. This information was also published on GC's website.
- GC published the invitation letter to attend AGM on GC's website in both Thai and English version, on March 1, 2019, more than 30 days prior to the meeting. This invitation letter was comprised of agenda items with the Board's opinions on each agenda as well as the attachments. In addition, GC sent the invitation letter containing barcode for registration form for AGM as well as QR Code for downloading digital version of Annual Report 2018 and Integrated Sustainability Report 2018.
- If a shareholder would like to assign a proxy to attend and vote at the AGM on their behalf or if they would be unable to attend the AGM in person, GC provided them with a proxy statement that allowed them to specify their "for", "against" or "abstain" vote for each agenda item. Independent Directors' names and biographies were also included for their consideration as their proxy. Details of the proxy assignment process and documents required to facilitate the procedure were enclosed with the invitation letter. All of these was available in Thai and English.

- The invitation letter was mailed to its shareholders on March 14, 2019, over 21 days ahead of the meeting. A map of the meeting venue and location and a phone number for inquiries were also included in the invitation letter.

#### On the Day of the Meeting

- GC held the 2019 Annual General Meeting of Shareholders (AGM) in a large conference hall that could accommodate a sizeable number of shareholders and allocated a specific time slot for shareholders to ask questions and express their opinions to ensure smooth and efficient meeting organization. GC also arranged an exhibition, with presenters, in front of the conference hall to educate attending shareholders regarding the various aspects of our business and performance and provided sufficient food and refreshments for participants.
- GC used barcode scanning in our registration process of AGM for convenience and efficiency. GC also assigned staff to verify shareholders' documents ahead of time. The said registration began more than two hours before the meeting started.
- All 15 Directors attended the 2019 AGM. Top management, auditors, legal advisors, lawyers, shareholders' right protection volunteer and shareholders volunteering to witness the vote counting were also present. In this year, GC received an exemption of Thai investors association's presence to evaluate the quality of the 2019 AGM as GC, being one of 68 listed companies, received AGM assessment score of 100 for the second consecutive year (2017-2018), after its AGM Quality Assessment had been revised in 2017.
- Before the meeting began, shareholders were explicitly informed of the voting and vote-counting procedure for each agenda item. "For", "against" or "abstain" voting ballots for each agenda item were provided to shareholders and proxies.
- At the meeting, the Chairman proceeded with all agenda items in order and afforded all shareholders equal rights to express their opinions. Sub-committee chairpersons, Chief Executive Officer and President, and any relevant top management were assigned to answer shareholders' questions. All expressed questions and opinions were fully recorded in the minutes of the AGM.

GC's 2019 AGM was ranked **"Outstanding"** with a perfect score of 100 for the eight consecutive year.

#### After the Meeting

- GC disclosed its resolutions of the 2019 AGM through the SET's portal once the meeting was finished. The disclosed resolutions included a complete set of the "for", "against", "abstain" and invalid ballots of each agenda item. The minutes of the AGM were prepared in Thai and English specifying the names of Directors and Executives attending the meeting, as well as other relevant attendees, key explanations, a list of questions and answers and a summary of opinions expressed. The minutes were submitted to SET and any other organizational authorities within 14 days after the meeting. They were also made available on [www.pttgcgroup.com](http://www.pttgcgroup.com) for shareholders' inspection.

GC's 2019 AGM was ranked "Outstanding" with a perfect score of 100 for the eight consecutive year (2012 to 2019). It also received 86% for its AGM assessment on Satisfaction of Shareholder and "Outstanding" on CG implementation.

## 2. EQUITABLE TREATMENT OF SHAREHOLDERS

The Board of Directors ensures equitable treatment of all shareholders, whether majority or minority, Thai or foreign. GC's equitable treatment of shareholders is summarized as follows:



ANNUAL GENERAL MEETING OF SHAREHOLDERS 2019

1. Valuing all shareholders, the Company adhered to the measures put in place to fairly and equitably safeguard the fundamental rights of every shareholder. These measures were aimed at bringing about investors' trust and confidence in the Company and ensuring continuous suitable returns.
2. Minority shareholders were afforded the opportunity to express their opinion, provide suggestions and submit complaints to the Board, Chairman of the Corporate Governance Committee (an Independent Director) and the Company Secretary via the GC website on Corporate Governance or email at [cg@pttgcgroup.com](mailto:cg@pttgcgroup.com). The Corporate Governance Committee would review the complaints submitted and take appropriate action. Institutional investors could request information or express their opinions via email at [ir@pttgcgroup.com](mailto:ir@pttgcgroup.com) under the care of Investor Relations.
3. GC fostered good relations with its shareholders through an activity that would benefit society and the environment, namely Company Visit 2019, which took place in Rayong province. With a quota of 500 participants, GC afforded both majority and minority shareholders equal opportunities to participate in the activity. There were two groups of 250 participants each visiting GC Group's plants and taking part in a social outreach activity on November 11 and 12, 2019.

### 3. ROLE OF STAKEHOLDER

GC places importance on the rights of all stakeholders. Thus, principles in relation to the rights and impacts on stakeholders were compiled, and written good practice guidelines were formulated based on these principles and published on GC's website. Stakeholders were also provided with channels to express their opinions, suggestions and recommendations.

Stakeholder-related policies and guidelines, as well as actions in 2019, are summarized below:

#### SHAREHOLDERS

GC respects the fundamental rights of shareholders and treats every shareholder equitably for their utmost satisfaction. These rights include the right to participate

in the AGM, the rights to vote, to propose meeting agenda items and to nominate candidates for directors. To foster good relations with shareholders, GC organized Company Visit, heeded their suggestions and provided them with contact channels, via [www.pttgcgroup.com](http://www.pttgcgroup.com), email addresses at [ir@pttgcgroup.com](mailto:ir@pttgcgroup.com) and [cg@pttgcgroup.com](mailto:cg@pttgcgroup.com), as disclosed under Shareholder Rights and Equitable Treatment of Shareholders. In addition, the Company took part in the quarterly Opportunity Day, held in collaboration with SET to provide investors with access to information sources and an opportunity to learn more about listed companies.

Furthermore, GC continued for the fourth consecutive year with the Giving Back to Society campaign at the 2019 AGM, where it donated Baht 100 per shareholder who registered for the meeting (whether in person or through a proxy) instead of giving tokens to shareholders (refraining from distributing tokens is SEC's directive). The donated fund totaling Baht 553,000 was used to purchase medical equipment for Wang Chan Hospital in Rayong Province.

As for treatment of bondholders, the Company strictly complied with applicable laws and notifications of SEC, GC's policies, objectives and shareholders' meeting resolutions. Activities were also regularly conducted to foster good relations with bondholders, much like those organized for shareholders, such as national and international roadshows and Company Visit.

#### CUSTOMERS

To achieve customer satisfaction, GC continued to maintain and improve the quality of its products and



GC COMPANY VISIT 2019

services; ensured that the its management was fair, appropriate, transparent and accountable; provided good quality and reasonably priced products and services to its customers; maintained a good and sustainable relationship with its customers through a diverse range of activities, such as coordination meetings with customers to provide them with information on products and services as well as to learn more about their needs, which would enable GC to cater its products to their demand; conducted quality checks of its products regularly; and adopted a customer relationship management (CRM) system and a whistleblower form on the Company website to facilitate the submission of complaints about GC's products and services. Furthermore, several operation-enhancing standards were adopted as tools to manage and assess the efficiency of the operations. These standards included a standard product sales and purchase agreement, implementation of a tender software system, Internal Control Self-Assessment, operation monitoring policy for Marketing, Commercial and Supply, which had been implemented in conformity to the Corporate Governance and Business Code of Conduct Handbook and the Corporate Compliance Policy. These standards serve as guidelines to which all employees strictly adhere.

and Business Code of Conduct Handbook. An e-procurement system was implemented and developed for more transparent, more simplified and less costly procurement processes. The Approved Vendor List (AVL) was also enhanced and supplier audit and assessments were conducted annually. In addition, GC continued to conduct Supplier Relationship Management (SRM) activities, namely the Suppliers Conference, to meet its suppliers and exchange ideas with them, as well as to communicate its policies to them. GC encouraged its suppliers to join the Private Sector Collective Action against Corruption (CAC). It also continued partnering with suppliers to lower the costs of procurement and enhance suppliers' competitiveness.

### BUSINESS COMPETITORS

To ensure that treatment of business competitors is compatible with international standards and within the scope of the laws on trade competition, GC established its Business Code of Conduct on Treatment of Business Competitors in conformity to those principles to ensure fair and transparent competition by neither seeking confidential information of business competitors through fraudulent or inappropriate means nor tarnishing their reputation with slanders.

### CREDITORS

Treating its creditors fairly and responsibly, GC strictly adheres to best practices while complying with contractual terms and conditions, terms of guarantee, capital management and debt repayment terms, due dates and financial encumbrances. A Payment Tracking System (PTS) was set up to facilitate creditors to track and check the status of payment. The system provided information on the due date and payment in process. The Company in collaboration with financial institutes implemented an e-mail Advice from an Outsourced Payment System to inform its creditors in advance of the payment in process. An additional system was also provided to support the issuance of invoice, tax invoice, and receipt via e-system. GC did not conceal any information or facts that could cause damage to its creditors. If the Company foresaw that it might not be able to comply with any obligation of the contract, it would notify the creditor in advance to mutually agree on a corrective measure. The Company treated all creditors equally, whether financial institutions or bondholders, with the same standard contractual



**GC SUPPLIER CONFERENCE 2019**  
AT THE OFFICE OF RAYONG PROVINCE

### SUPPLIERS

Believing in a business model of mutual growth and sustainability, GC operates its businesses with fairness, transparency, accountability and lawfulness. It adheres to the Supplier Code of Conduct and Procurement Code of Conduct, which are in alignment with the Corporate Governance

terms and conditions. The major conditions of loan agreements are in the same standard and all the terms of these agreement are strictly complied with. Principal repayment and interest payment were made on time, and the use of a given loan agreed with the objectives stated in the agreement with the creditors, as well as compliance with the requirements on the rights and responsibilities of debenture issuers and conditions under the loan agreements. Furthermore, GC held Banker Feedback sessions to learn more about its financial institutions' opinions of its processes, which also enhanced their confidence in GC and its compliance with their regulations. Feedback from the sessions helped improve GC's work procedures concerning these banks.

### PUBLIC SECTOR

Recognizing the significance of the public sector, which is one of its stakeholders, the Company established a policy on the treatment of the public sector in the countries where it invested in order to avoid adverse consequence of any action. This policy was included in the Corporate Governance and Business Code of Conduct Handbook. GC is committed to complying with laws and administrative rules and regulation in obtaining permits, benefits and concessions according to applicable laws, rules and regulations as well as established procedures, processes and practices. Contacts and communication with the public sector, including local authorities and state enterprises, must be transparent with complete and accurate information disclosed under governmental requirements. To this end, GC adopted

the Permits & Privilege Licenses online database in the planning and monitoring of the operations' progress, ensuring compliance with governmental rules, regulations and conditions. Moreover, to enhance good relations with relevant public agencies, GC held activities in an open and appropriate manner and under the law, such as anti-corruption activities, to improve understanding, enhance commitment in performing transparent work and against corruption, and support meeting venues for the exchange of knowledge and update on new laws, among others.

### EMPLOYEES

Committed to employees' development as a way to bolster the organization, GC trained its employees and ensured their occupational health and safety. GC paid attention equally to employee opinions and suggestions regardless of their position in the corporate hierarchy. Its human resource management plan had been aligned with business needs, preparing the workforce to support the expansion and partnerships at home and overseas. Talent and Succession Management had been adopted as a framework for employee management and development which is in line with employees' potential, abilities and performance. Employees were suitably compensated since the remuneration policy took into account GC's short-term and long-term operating results. Details of GC's human resource management and performance are disclosed under the topic of "People Management and Development Policy".

In addition, GC implemented policy for employing people with disabilities, and created activities to enhance their quality of life, such as collaborative engagement with the social innovation foundation to promote jobs for disabled people in order that they can work as freelancers.

### CIRCULAR LIVING SYMPOSIUMS 2019 : UPCYCLING OUR PLANET AT THE ATHENEE HOTEL, BANGKOK

**SET Social Impact**

**CIRCULAR LIVING SYMPOSIUM**  
UPCYCLING OUR PLANET

This event helps reduce Carbon Footprint

**26,911** Kg. CO<sub>2</sub> e.  
Equivalent to planting 2,990 trees  
(Absorbing the carbon dioxide emissions)

| Ways to reduce Carbon Footprint       | Kg. CO <sub>2</sub> e. |
|---------------------------------------|------------------------|
| - Reduce the use of paper and plastic | 8,070                  |
| - No foam materials                   | 3,257                  |
| - Use recycled materials              | 13,814                 |
| - Reduce Food Waste                   | 1,770                  |

**CARE THE BEAR**  
Change the Climate Change  
by **ECO-EVENT**

### SOCIETY, COMMUNITIES AND THE ENVIRONMENT

GC conducted its business responsibly with due regard for society, communities and the environment and took into account issues such as safety, quality of life and conservation of natural resources. As part of its Proactive Environmental Management (PEM), GC has revised Quality, Security, Occupational Health, Environment and Business Continuity policy to be in line with Climate Strategy practices of Dow Jones Sustainability Indices or DJSI. GC also promoted energy efficiency and placed importance on the quality of life in local communities and society by implementing CSR Program Portfolio at three



**THE BOARD OF DIRECTORS AND EXECUTIVES DONATED MEDICAL EQUIPMENT TO WANG CHAN HOSPITAL IN RAYONG PROVINCE**

levels: local, provincial and national. This program portfolio is aimed at improving the local communities at all three dimensions of sustainability (Economic, Social and Environment). Employee volunteer has been indeed an important driving force behind the said CSR Programs Portfolio. Details of each CSR program were communicated to the public to enhance GC's image on social responsibility. The Company has continued, from 2017, to cooperate with all sectors on resource usage efficiency via various implementations throughout the value chain, under the "Circular Living" concept which is in line with GC's "Better Chemistry for Better Living" mission, aiming to spearhead society in the new-trend use of plastics with responsibility. GC also adopted the world-class sustainability reporting framework known as Integrated Sustainability Report (ISR), which covers economic, social and environmental topics, as well as other issues that may significantly affect GC. Further details can be found in "Integrated Sustainability Report 2019".

#### 4. DISCLOSURE OF INFORMATION AND TRANSPARENCY

GC is committed to transparent and timely disclosure of accurate and complete information, financial and non-financial, to stakeholders in conformity to applicable laws, rules and regulations via the SET Link and the Company's website at [www.pttgcgroup.com](http://www.pttgcgroup.com). Its Investors Relations (IR) and Corporate Secretary (CS) were in charge of information disclosure and addressing inquiries.

#### 1. DISCLOSURE OF MATERIAL INFORMATION IN THE ANNUAL REPORT AND IN FORM 56-1

- **FINANCIAL INFORMATION:** GC's financial statements are audited by a professional auditor for the accuracy of their material information and conformance to financial auditing standards.

Each set of financial statements has been approved by the Audit Committee and the Board of Directors before their disclosure to shareholders and the public. The Board of Directors' statement on the accountability of its financial reports is disclosed alongside the auditor's report in the annual report, which includes connected transactions, essential financial information, management's discussion and analysis, and significant financial ratios.

- **NON-FINANCIAL INFORMATION:** Non-financial information is disclosed, such as the operating structure of GC Group, which includes the majority shareholder's shareholding structure, the ratios of the number of shares held by institutional investors and of free-float shares, reports of the shares held and changes at the year-end as filed by Directors and Executives of the Company and related parties, reports on adherence to good corporate governance principles, and Integrated Sustainability Report.

#### 2. ESSENTIAL INFORMATION IN THAI AND ENGLISH WERE DISCLOSED VIA THE FOLLOWING CHANNELS:

- The SET Link;
- GC's regularly updated website, [www.pttgcgroup.com](http://www.pttgcgroup.com), where channels for contacting the Board and other divisions are also fully and clearly displayed;
- Information and news were disclosed to stakeholders via email, exhibitions, press release and other activities, such as newspapers and television.

#### INSIDER INFORMATION

An Insider Information Policy has been established and included in the Corporate Governance and Business Code of Conduct Handbook. It has also been published on the Company's website for shareholders' ready access. Directors, Executives and employees are constantly reminded of the policy and their compliance. Under the policy, they are prohibited from using material insider information, not yet published to the public, for personal gain or the benefit of others, including for trading GC's securities. The essence of the policy is summarized below:

1. Directors and Executives under SEC's definition must report to SEC changes in their holding of the Company's shares within three business days as required by SEC. Moreover, the Company sets up a policy requiring Directors and Executives to notify the Company Secretary of their intention to trade the Company's shares at least one business day before the transaction is made.

2. The Board of Directors monitors each individual's compliance with GC's Business Code of Conduct on insider information every month. The Company Secretary, who receives information via email from SEC on the changes to Directors and Executives' shareholding according to their shares trading or transfer, will report such changes to the Board. Information of changes in shareholding during the year and at the beginning and the end of each fiscal year is disclosed in the annual report.
3. GC notifies Directors and Executives in writing that they are prohibited from trading the Company's shares 30 days ahead of the disclosure of the quarterly and annual financial statements or that of other information that may affect the prices of the Company's shares. They are also prohibited from trading the Company's shares within 24 hours after the said disclosure.
4. All Executives and employees are required to comply with the Company's guidelines on Confidentiality of Information and safeguard its information, business partners' information and personal information of related parties. They are also required to adhere to the Company's measures on the safeguarding of confidential information or information that is not yet published to the public.
5. GC's Directors, Executives and employees are regularly kept up to date on regulations and policies regarding insider information to ensure their acknowledgement and compliance. The Company has clearly implemented disciplinary sanctions in case of violation of inside trading policy. No report on violation of insider information was, however, received this year.

## INFORMATION TECHNOLOGY (IT) GOVERNANCE

GC oversaw the use of information technology to broaden its business opportunities and risk management development so as to achieve its objectives and goals. Its guidelines for IT monitoring have been defined as follows:

1. **Quality of Data and Information:** GC has implemented management information system to ensure that its data and information technology are correct, accurate, reliable and trustworthy. Its system has been divided into three level as follows:
  - **Governance level:** PTTGC Group's Digital and IT Steering Committee (DISC) was established to define IT direction, goals and strategies under GC Group's policies, business direction and strategy.

An Information Safety and Security Committee (ISMS Committee) was also formed to oversee the security of GC Group's essential data.

- **Management level:** Structure and approaches of management information system were implemented. ISO series were applied as an operational framework and to control users' implementation and to ensure the accuracy and availability of data. GC also used the internal and external audit systems for the review and audit of its processes to ensure that information and data are accurate, credible and reliable.
  - **Operation Level:** Information Technology Department has proceed as follows:
    - Establishing related systems, guidelines and other services for users and storing it in the intranet for users' further study. IT news was announced via email regularly.
    - Monitoring IT work progress. The results of the monitoring were used to improve the management and services provided as well as IT security. Reports on the progress were made to the DISC and ISMS Committee for further recommendations.
    - The risk of IT resources was annually assessed to ensure that they were sufficient to maintain and protect data and information. This would lead to accurate, correct, reliable, trustworthy and current data and information.
2. **Data and Information Security:** GC has developed a data and information security administration system with ISO 27001 serving as a practical scope for confidentiality, integrity, and availability of information as follows:
    - Mapping and rolling out a policy for steering and defining guidelines for the development of an information security administration system, including an information technology (IT) security policy and a computer room physical security policy.
    - Establishing procedures for alignment with and accommodation of policy development, including procedures for accessing key systems, computer room access control, and information asset risk management.
    - Developing assorted information systems for security and safeguarding against cyberthreats while accommodating the above-mentioned procedures, including systems to prevent computer virus spread (virus computer), cyber leaks of key data, and 2 Factor Authentication (2FA).

**3. Availability of Data:** GC implemented plans on the use of the Company's data and information to be in line with its corporate strategy, taking into account the needs of all business units in the implementation of the IT strategic plans.

**4. Specifications of the Company's Hardware and Software:** GC has proceeded as follows:

- IT devices must be replaced every three years. New models for replacement must have better capacities, equipped with security systems for intrusion prevention and data recovery.
- A system must be installed for 24-hour monitoring of the server. In case of computer malfunction, the system will send an alert SMS and email to IT supervisors to take promptly necessary corrective action.
- A security system must be installed to daily check the temperature and power sufficiency of the Data Center (DC) and Disaster & Recovery Site (DR Site). UPS Generator Power was installed for power reserve in case of power blackout.
- Vulnerability assessment and system hardening must be conducted annually, as well as installing and updating of anti-virus programs to the server and its clients. There must be daily, weekly and monthly data backups.
- Standard software to be used must pass the test, and an annual audit must be conducted on hardware and software management.

**5. Information Availability in case of Emergency:** GC has implemented a DR site for 24-hour backup of important data and information to ensure prompt

retrieval. Disaster recovery plans and recovery procedures were formulated to handle the situation in emergencies which might affect the main data system. The rehearsal of said recovery plan must also be held annually.

To implement an oversight process for digital and IT investment management, GC appointed a Digital & IT Investment Management Committee (DIM) to oversee and consider such investment under the DISC guidance. A process is in place to monitor budget disbursement and the status of the project to ensure progress in line with the schedule given to DIM, including project duration and anticipated benefit.

## INVESTOR RELATIONS

Investor Relations Department serves as the center of communication, where essential information is made known to shareholders, institutional and minor investors, analysts and relevant regulatory authorities. It also oversees the quality of financial reporting processes and essential information that could affect the price of its securities, such as financial statements, performance results, earnings reports and quarterly and annual Management Discussion and Analysis (MD&A). These are all indicators of the Company's financial standing, performance and future trends. Investor Relations Department also manages the disclosure of information via the SET Community Portal to foreign and domestic investors. Furthermore, an Investor Relations Code of Conduct has been established to determine the roles and best practices that enable investor relations officers to treat all shareholders equitably.

In 2019, GC's Executives regularly met with shareholders, financial analysts, investors and employees through activities, such as analyst meeting, domestic and international road show and retail-investor events in order to present the Company's performance. Below is a summary of these events:

### Investor Meetings

|                                  |          |
|----------------------------------|----------|
| Investor Meetings Abroad         | 5 times  |
| Domestic Investor Meeting        | 13 times |
| Meetings with Financial Analysts | 4 times  |
| Meetings at the Company          | 18 times |
| Teleconferences                  | 14 times |

### Information Disclosure

|   |          |
|---|----------|
| Disclosure via SET Community Portal and Company Website | 63 times |
|---|----------|

### Activities

|                              |         |
|------------------------------|---------|
| Bondholders' Site Visit      | 1 time  |
| Analysts/Fund Site Visit     | 3 times |
| Shareholders' Site Visit     | 2 times |
| Basic Training with Analysts | 4 times |

In addition, Investors or interested persons may contact the Company via the following channels for more information:

- 1) Mail : Investor Relations Department,  
PTT Global Chemical Public  
Company Limited  
555/1 Energy Complex, Building A,  
4<sup>th</sup>-18<sup>th</sup> Floors, Vibhavadi Rangsit Road,  
Chatuchak, Bangkok 10900
- 2) Phone : 66 (0) 2265-8400  
ext. 8172, 8665, 8364, 8637 and 8513
- 3) Email : ir@pttgcgroup.com
- 4) Fax : 66 (0) 2265-8500
- 5) Website : www.pttgcgroup.com.

In addition, the Company offers swift and convenient communication via email. The email address is displayed on the Company website under “Corporate Governance”. Shareholders, investors and the public may contact the Board of Directors or the Chairman of the Corporate Governance Committee directly. They may also contact the Company Secretary for company information at cg@pttgcgroup.com.

## 5. RESPONSIBILITIES OF THE BOARD OF DIRECTORS

The Board of Directors has established the following policy regarding its composition and the scope of its responsibilities and duties:

### 1. BUSINESS STRATEGIES, POLICIES AND DIRECTIONS

The Board establishes sustainable development policies, strategies and goals under the strategic framework of universal sustainable business practices to strike an economic, environmental and social balance; encourages innovation and the adoption of technology in the Company’s operations; reviews at least once a year the corporate vision and sets corporate goals under the current economic condition; approves financial and other Key Performance Indicators (KPIs) and goals and monitors their progress periodically; and supervises the performance of the management team through the President and CEO to ensure the achievement of the Company’s goals and plans.

## 2. CORPORATE GOVERNANCE AND BUSINESS CODE OF CONDUCT

The Board set the policies on Corporate Governance and Business Code of Conduct, and Corporate Compliance for GC Group. Directors, Executives and employees must abide by these policies to bring about efficient, standardized, ethical, transparent and accountable operations. The Board also ensures the rights of all stakeholders in justly receiving the benefits guaranteed to them by their fundamental rights to bolster confidence as well as fostering recognition among the public. The Board also treasures anti-corruption efforts. To this end, it tasks the Corporate Governance Committee with ensuring the Company’s strict compliance with such policies, as well as all applicable laws, objectives, articles of association and shareholder resolutions, overseeing equitable treatment of all shareholders and instilling an understanding of CG in the minds of our employees to facilitate compliance.

## 3. INTERNAL CONTROL AND INTERNAL AUDIT

To ensure that GC and GC Group adopt internal control systems of international standards and adequate risk management with appropriate risk appetites and tolerance, the Board of Directors tasked the Audit Committee and Internal Audit with regular reviews and monitoring of internal audit. They must also ensure that GC provides adequate, credible information internally and externally. In addition, they must regularly monitor and assess its compliance with applicable laws, rules and regulations, and foster confidence among executives, investors and stakeholders. Further information appears under “Internal Control”.

## 4. RISK MANAGEMENT

The Board oversaw GC’s management system for risks to its strategic objectives. It assigned the Risk Management Committee to devise risk management policies and frameworks; ensure the efficiency of its risk management; review risks of negative impacts on the Company’s objectives; consider substantial risks at project and organizational levels; and formulate execution plans and consistently monitor, assess and make adjustments to such plans to ensure that these risks are tolerable. Furthermore, the Risk Management Committee reported results of risk

management to the Board regularly and on an ad hoc basis, as disclosed under Risk Management and Risk Factors and Internal Control.

## 5. CONFLICTS OF INTEREST

The Board of Directors laid down a policy and guidelines for issues on or the possibility of a conflict of interest in the Corporate Governance and Business Code of Conduct Handbook, to which all Directors, Executives and employees must adhere to. They must also carefully follow the guidelines for connected transactions and refrain from violating the regulations of SEC and SET. Directors and Executives by SEC's definition must report to the Company their interests and those of their related parties. In addition, a connected transactions manual has been issued, and principles concerning connected transactions has been communicated to relevant units under GC and GC Group. In addition, information on these transactions was compiled in a database retrievable by relevant departments for further action so as to ensure operational compliance.

Furthermore, GC has put measures in place to prevent conflicts of interest. Directors, Executives and all employees are required to annually report potential conflicts of interest. If a conflict of interest has arisen, the person with vested interests must immediately report GC of such conflict, using the Conflict of Interest Form (for the Directors) or the form via the intranet (for executives and employees) to their immediate supervisors for acknowledgement and further action.

**GC JOINED ANTI-CORRUPTION DAY 2019 AT BANGKOK INTERNATIONAL TRADE & EXHIBITION CENTRE (BITEC) UNDER THE CONCEPT 'JOINING FORCES AGAINST CORRUPTION'**



## ANTI-CORRUPTION

GC has maintained its commitment to transparent and accountable operations founded upon CG. Its control and monitoring mechanisms prevent and minimize the likelihood of internal fraud and corruption, direct or indirect.

GC expressed its dedication to the fight against corruption in the following manners:

### IMPLEMENTATION UNDER ANTI-CORRUPTION MEASURES

GC has established an Anti-Bribery and Anti-Corruption Policy, providing in writing relevant guidelines. The policy has been publicized on the Company website. In addition, the Company was a recertified member of Thailand's Private Sector Collective Action Coalition against Corruption (CAC) in 2017, after its first certification in 2014. In 2019, GC was undergoing the recertification process to retain its membership for the third consecutive term. It conducted its annual review of all 71 items on its anti-corruption self-assessment form with supporting evidence, which was later assessed by an internal auditor. The result was reported to the Audit Committee for their acknowledgement. This process ensured that GC had comprehensive, suitable anti-corruption measures in place and that it operated its business under CAC-prescribed CG principles.



**GC JOINED INTERNATIONAL ANTI-CORRUPTION DAY 2019 UNDER THE CONCEPT "ZERO TOLERANCE, THAIS WILL NOT TOLERATE CORRUPTION" AT IMPACT, MUANG THONG THANI, NONTHABURI PROVINCE**

## NACC INTEGRITY AWARDS

GC firmly adheres to ethical and transparent business practices while supporting the government's efforts to promote awareness, social values, virtues and morality to prevent and suppress corruption, propel Thailand's transparency towards an internationally accepted standard and promote a Corporate Governance culture. GC has entered NACC Integrity Awards, in every year continuously held on December 9, 2019 organized by the Office of the National Anti-Corruption Commission (NACC) as well as participating several other activities to express the company commitment and efforts in the fight against corruption, including the International Anti-Corruption Day (Thailand), organized by the Royal Thai Government in conjunction with the Office of the NACC, the Office of the Public Sector Anti-Corruption Commission (PACC), the Anti-Corruption Organization of Thailand and Thailand's anti-corruption network, and the National Anti-Corruption Day (Thailand) 2019, organized by the Anti-Corruption Organization of Thailand, on September 6, 2019.

## ANTI-CORRUPTION TRAINING

Since 2017, GC in collaboration with Corporate Governance and Human Resources Development Department conducted an ongoing training project entitled "CG Role Model: Focus on Action". Experts from

external organizations were invited to give lectures to supervisors on the Good Corporate Governance principles and business code of conduct and the likelihood of corruption to executive employee. The campaign has raised their awareness of ethical practices, fraud risk factors and fraud risk control. It has also bolstered the strength of the Company by enabling these employees to serve as role models and encouraging them to be vigilant of corruption in order to prevent it, as well as supporting employees to monitor protect and follow the implementation of anti-corruption measures.

## NO GIFT POLICY

Giving or receiving a gift, treating someone or being treated to a meal, and giving or receiving any other form of benefit may lead to corruption. Therefore, GC issued a No-Gift Policy (no gift, no treat nor any other benefits) under its Anti-Corruption Policy. Strictly enforced across GC Group, the policy mandates that any person employed by GC Group must not ask for or receive any gift, meal or form of favor from a business partner of GC Group so as to prevent any influence on his or her decision or selective treatment or conflict of interest. This policy has been communicated to all external parties involved in its business operation for their acknowledgement so as to ensure GC's standard of business conduct with integrity, transparency, honesty and lawfulness.

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## WHISTLEBLOWER SYSTEM

GC recognizes the important roles of all stakeholders in its Corporate Governance. Whenever they witness any violation of the Business Code of Conduct, any form of fraud or any other improper case, they may submit a report, notification or complaint directly to either the Chairman of the Corporate Governance Committee, the head of Internal Audit, the Executives or the Company Secretary or via the GC-provided complaint channels or any other channels that they trust.

**Chairman of the Corporate Governance Committee/  
Head of Internal Audit /  
Executives or Company Secretary**

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## WHISTLEBLOWER POLICY PROCEDURE

GC formulated and announced the following Whistleblower Policy Procedure:

**1. Screening the complaint:** The responsible department screens the essential information

under the established policy. Even anonymous complaints will also be considered if they provide clear reasons and sufficient evidence. The result of screening is reported to the whistleblower.

- 2. Investigation:** For valid complaints, the head of Internal Audit will appoint an investigation committee under the Company’s work regulations to conduct an investigation and fact-finding as well as to present mitigation measures for the resulting damage or impacts so as to ensure fairness to all parties.
- 3. Reporting:** Once the complaint has been dealt with, the whistleblower will be notified of the outcome (if contact information was provided). The Corporate Governance Committee and the Audit Committee will also be notified.

## WHISTLEBLOWER AND WITNESS PROTECTION

Whistleblowers or witnesses who collaborate in the investigation will be provided with the following protection under the Whistleblower Policy:

1. A whistleblower, a stakeholder or any person who collaborates in good faith in the investigation will be protected and treated with non-retaliation.
2. Information of the whistleblower or of any persons involved will be classified as confidentiality according to GC’s regulations on information classification and security of confidential documents.
3. The Company will provide suitable mitigation measures to the whistleblower or the affected party.

## COMPLAINT STATISTICS

In 2019, the Company received a total of 164 complaints. They have been categorized as follows:

|   |                |
|---|----------------|
| Voice of Customer                           | 157 complaints |
| Voice from Community                        | 3 complaints   |
| Safety, Occupational Health and Environment | No complaint   |
| Business Code of Conduct                    | 4 complaints   |

## PROGRESS OF IMPLEMENTATION UNDER ANTI-CORRUPTION MEASURES

GC prepared reports on the progress of the implementation under the anti-corruption measures throughout the year and presented them to the Corporate Governance Committee and the Audit Committee for their acknowledgement. A summary of the reports was disclosed to shareholders in the annual report.

## BOARD OF DIRECTORS AND SUB-COMMITTEES

### 1. BOARD OF DIRECTORS

The Board of Directors is composed of experts from various fields with knowledge, skills and experiences which bring about advantages to GC. Members of the Board, known as Directors, are nominated and appointed under established criteria and shareholders’ approval. The current Board of Directors consists of 15 members, nine of whom are Independent Directors. The proportion

of Independent Directors fits GC’s size and business types, enabling the Board to perform its roles efficiently. Board duties and responsibilities are based on applicable laws, the Company’s regulations and articles of association, shareholder resolutions and good corporate governance principles. The Board as a whole dedicates its time to perform its duties in GC’s for utmost benefits of GC and the Board shareholders’ best interests refrains from acting in any capacity that could constitute a conflict of interest with GC, thus instilling trust and confidence among shareholders and investors.

The structure of the Board of Directors appears under “Management Structure.”

### 2. SUB-COMMITTEES

The Board of Directors appointed four Sub-Committees, namely the Audit Committee, the Nomination and Remuneration Committee, the Corporate Governance Committee and the Risk Management Committee.

Directors serving on these sub-committees possess the expertise and knowledge required to oversee specific issues that each is tasked with according to the GC articles of association. The charter of each sub-committee prescribes its members' desired qualifications, terms in office and scope of duties and responsibilities. The names of sub-committee members, their duties and responsibilities, the number of their meetings and attendance in these meetings are detailed under "Management Structure".

Furthermore, these four sub-committees regularly report their performance to the Board of Directors at Board meetings and disclose their annual performances to shareholders in Form 56-1 and the annual report.

## **NOMINATION AND APPOINTMENT OF DIRECTORS, INDEPENDENT DIRECTORS AND CHIEF EXECUTIVE OFFICER**

When a Director position becomes vacant or when a Director is due to retire by rotation, the Board of Directors, through the Nomination and Remuneration Committee, considers and nominates candidates with the knowledge, skills, expertise, experiences and specialization that would benefit and conform to the Company's business strategy under the Board Skill Matrix. Board diversity and independence together with potential Directors' conflicts of interest are also considered. Nomination is divided into the following categories:

**DIRECTORS:** GC encourages shareholders to nominate qualified individuals in addition to selecting candidates from the Directors' Pool of trusted organizations, such as the Thai Institute of Directors Association (IOD). This process ensures a wholesome composition of the Board and the best interests of the Company. A former Director may be re-nominated based on his or her performance during the past year, dedication and participation in activities and events.

**INDEPENDENT DIRECTORS:** GC strives to ensure its compliance with SEC's requirements regarding the suitable number of Independent Directors on the Board. As of January 31, 2020, the Board of Directors is comprised of 15 members, nine of whom are Independent Directors, which exceeds SEC's requirements. The definition and qualifications of an Independent Director appear in the Corporate Governance and Business Code of Conduct Handbook and on GC's website.

**CHIEF EXECUTIVE OFFICER:** If this position becomes vacant, the Nomination and Remuneration Committee will consider and nominate the member of the Board's Directors who possesses the skills, professional experiences and specialization that are in the greatest benefit of GC's business. In other words, the nominee must be knowledgeable and capable of managing a business and having relevant expertise and experience in the petrochemical, petroleum or energy sector. He or she must also demonstrate great leadership, have led an organization and be held in high esteem by relevant businesses and organizations. The possibility of a conflict of interest must also be taken into account. The nomination will be presented to the Board for consideration, approval and appointment.

## **ROLES OF THE CHAIRMAN AND THE CHIEF EXECUTIVE OFFICER**

The Chairman of the Board of Directors and the Chief Executive Officer (CEO) are not the same person. Their duties and responsibilities are distinct and separate, as described below:

**The Chairman of the Board of Directors** is an Independent Director whose main role is to ensure that the Board of Directors efficiently performs its duties and in compliance with the Company's good corporate governance principles and the business code of conduct, being independent from the management. In addition, the Chairman works with CEO to determine meeting agenda but refrains from participate in day-to-day business management. The Chairman of the Board of directors will be the chairman of both Board and shareholders' meetings. He is prohibited from serving on any sub-committee as explicitly prescribed in the scope of responsibilities of the Board of Directors and sub-committees so the Chairman is able to freely exercise his judgement.

**The Chief Executive Officer** is the highest company executive whom the board of directors choose and appointed from one of the directors Under the GC's articles of association, to serves for managing the Company under Board-assigned policies and directions under the scope of authority set forth in GC's articles of association and company regulations. The CEO also serves as secretary to the Board of Directors. Furthermore, the GC articles of association mandate that the CEO receives compensation and benefits for his role as the highest executive officer in addition to what he or she earns as a director. The CEO's

roles, duties and responsibilities, as well as his or her compensation, are published on the Company website in Thai and English.

## BOARD MEETING

**The Board of Directors** schedules the date and timing of Board meetings for the entire year in advance, and set each regular meeting's agenda clearly. The Board may also call special meetings if appropriate or as necessary. Directors receive a Board meeting invitation, draft minutes of the previous meeting and supporting information of the meeting agenda for the consideration of the meeting agenda at least seven days before the meeting. In 2019 there was a total of 14 Board meetings were scheduled in advance.

**The Chairman of the Board of Directors** presides over these Board meetings and gives Directors a chance to participate and express their opinions freely. At least two-thirds of all Directors on the Board must be present to constitute a quorum, which must be maintained until voting is completed. Each Director has one vote, and a resolution is passed based on majority votes. In case of a tie vote, the Chairman is to cast the decisive vote. The Board values the management of conflicts of related parties in prudent, impartial and transparent. All information regarding such conflicts is fully disclosed. If a Director has a personal interest on an agenda item, he or she is required to refrain from taking part in the decision-making process of that particular item.

After every meeting, the Company Secretary is responsible for completing the minutes of the meeting, which will be presented for the Board's certification as the first agenda item of the next meeting and for the Chairman's signature for minutes certification. The certified minutes and supporting documents on each agenda item will be systematically filed in electronic format, on a level of confidentiality categorized documents for easy retrieval and reference purposes.

Moreover, in compliance with good corporate governance principles. The Board of Directors, mandates that Non-Executive Directors meetings be held to suggest their opinions and guidelines of the Company's business management and operations. The Board also mandates that Independent Directors meetings to exchange ideas and review their roles and performance every year. In 2019, the Non-Executive Directors held one meeting and the Independent Directors held one meeting. The summaries of these meetings were presented to the Board for their acknowledgement. The details of Board meetings and Sub-Committee meetings are disclosed in "Directors' Meetings" under "Management Structure".

To easily and swiftly dispatch information and meeting documents, as well as to reduce the use of paper, the Company has implemented a Digital Join Application (D-Join) to forward information to Directors' iPads, which are equipped with the data security system.

## DIRECTORS' PERFORMANCE ASSESSMENT

### BOARD OF DIRECTORS

The Board of Directors set the Board performance assessment annually to help Directors review their performance and revisit problems and obstacles during the year. In 2019, the Company appointed an external consultant, EY Corporate Services Company Limited, to review and provide recommendation for the improvement of the Board. There are three types of performance assessment, namely group assessment, self-assessment and cross-assessment (assessing another Director) to ensure that they are suitable and align with Corporate Governance Code (CG Code) issued by SEC as well as to analyze and evaluate these performance assessment forms and provide recommendation and related suggestions to GC so that it can use them to improve and develop the Board's performance for greater efficiency. Furthermore, new Board KPIs were also established under the CG Code and the international criteria of the DJSI which are composed four aspects including the Company's performance results, the Board's group assessment results, Directors' meeting attendance and Directors' engagement during the Board meetings.

Board assessment details are as follows:

**1. GROUP ASSESSMENT** comprises six essential sections including 1) Board policy 2) Board performance 3) Board structure (composition and qualifications) 4) Board style 5) Board meeting 6) Board development. The assessed Directors were the Directors who held a position as director during the assessment period from January to September 2019 in a total of 14 directors (exclusive of one director, Mr. Kongkrapan Intarajang, appointed as Director on October 1, 2019).

**THE AVERAGE GROUP ASSESSMENT SCORE OF THE BOARD IS 97.4%.**

**2. SELF-ASSESSMENT (ASSESSMENT OF INDIVIDUAL DIRECTORS)** comprises three essential sections including 1) Directors' knowledge and expertise, self-development and teamwork 2) Board duties performed 3) dedication of time and meeting attendance.

**THE AVERAGE SELF-ASSESSMENT SCORE OF THE BOARD IS 96.4%.**

**3. CROSS-ASSESSMENT (INDIVIDUAL ASSESSMENT OF OTHER DIRECTORS)** comprises three main sections including 1) the Director's knowledge and expertise, self-development and teamwork, 2) Board duties performance and 3) dedication of time and meeting attendance.

**THE AVERAGE CROSS-ASSESSMENT SCORE OF THE BOARD IS 97.9%.**

### SUB-COMMITTEES

The Company's sub-committees are the Audit Committee, the Nomination and Remuneration Committee, the Corporate Governance Committee and the Risk Management Committee. They also generate the annual performance assessment, both at committee (group) and individual levels. In 2019, every Sub-Committee reviewed and improved the assessment questionnaires and criteria to be in line with good corporate governance practice.

**1. AUDIT COMMITTEE:** The assessment topics are audit committee charter, composition, meetings, training and resources, responsibilities, relationship with Senior Vice President - Internal Audit, auditors and management, reporting to the Board and shareholders and maintaining of performance quality. The results are summarized below:

- The average score of the Group Assessment is **93.2%**.
- The average score of the Individual Assessment is **90.7%**.

**2. NOMINATION AND REMUNERATION COMMITTEE:** The assessment topics are composition and qualifications, scope of duties, reporting and performance evaluation. The results are summarized below:

- The average score of the Group Assessment of the Board is **99.59%**.
- The average score of the Individual Assessment is **99.09%**.

**3. CORPORATE GOVERNANCE COMMITTEE:** The assessment topics are composition and qualifications, scope of duties, meetings, reporting and performance evaluation. The results are summarized below:

- The average score of the Group Assessment is **97.5%**.
- The average score of the Individual Assessment is **96.7%**.

**4. RISK MANAGEMENT COMMITTEE:** The assessment topics are composition and qualifications, scope of duties, meetings, reporting and performance evaluation. The results are summarized below:

- The average score of the Group Assessment is **99.4%**.
- The average score of the Individual Assessment is **98.8%**.

The results of these assessments and recommendations of the assessment will be presented to the Board of Directors to concretely improve the effectiveness of the Board. The summary of these results will be disclosed in the annual report. In addition, the Nomination and Remuneration Committee will take the Board's group assessment results into account for determining the Board's annual remuneration, in addition to GC's operating performance.

### DEVELOPMENT OF DIRECTORS AND EXECUTIVES

The Board of Directors recognizes the role of leadership as a governing body of the Company. More than half of its members have studied or attended lectures on the Corporate Governance Code for Listed Company 2017 (CG Code) and have good understanding of CG Code and how it could create sustainable value for the Company's business.

To enhance Directors' knowledge and competence which will support the performance of the Board of Directors effectively, as well as to prepare executives for internal rotations and for the succession to the CEO and top management, the Board of Directors encourages their participation in pertinent training courses and provides the assessment of potential top management to develop the preparedness of executives' performance. The summary of the key developments is as follows

#### ORIENTATION FOR NEW DIRECTORS

Newly appointed Directors must attend the board orientation, which includes a presentation on GC's nature of business, business data and practices, as well as applicable rules and regulations, corporate governance principles and the business code of conduct, and useful information for the position. Additionally, the company prepares handbooks and other documents needed to perform their roles, namely the strategic plan, the Company's Articles of Association, Memorandum of Association, annual report, related rules and regulations, and the Corporate Governance and Business Code of Conduct Handbook.

## TRAINING FOR DIRECTORS

GC always encourages its Directors to pursue further education and training opportunities to enhance their competence for the jobs, which includes:

- Participation in activities aimed to promote and elevate corporate governance, as well as visits to operating sites of GC Group and joint ventures in Thailand and overseas so as to enrich their

understanding of GC's businesses and optimize their knowledge and experiences for GC's benefit.

- Participation in relevant and beneficial training programs, as well as refresher programs, at Thai Institute of Directors Association (IOD).

In 2019, Directors participated in the following programs:

| Director                            | Program / Institute   |
|-------------------------------------|---|
| 1. Mr. Praphon Wongtharua           | <ul style="list-style-type: none"> <li>• Advanced Audit Committee Program (AAPC), Class 32/2019, Thai Institute of Directors Association (IOD)</li> </ul>   |
| 2. Major General Nithi Chungcharoen | <ul style="list-style-type: none"> <li>• Boards That Make a Difference Program, Class 9/2019, Thai Institute of Directors Association (IOD)</li> </ul>  |
| 3. Mrs. Premrutai Vinaiphath        | <ul style="list-style-type: none"> <li>• The Executive Program in Energy Literacy for Sustainable Future, Class 13, Thailand Energy Academy (TEA)</li> <li>• Director Certification Program (DCP), Class 269/2019, Thai Institute of Directors Association (IOD)</li> </ul> |
| 4. Mr. Prasert Bunsumpun            | <ul style="list-style-type: none"> <li>• Rule of Law for Democracy, Class 7, College of the Constitutional Court</li> </ul>   |
| 5. Mr. Prasan Chuaphanich           | <ul style="list-style-type: none"> <li>• Board Nomination and Compensation Program (BNCP), Class 7/2019, Thai Institute of Directors Association (IOD)</li> </ul>   |

- GC held a lecture for the Board of Directors on the topic of "Know Your Cyber Risk," for their acknowledgment and better understanding of the risk factors on technology which have become a key issue of the current situation and may impact to the Company's business so that they will be prepared to efficiently handle the situations, in line with the Director's Development plans under the CG code.

executives will be encouraged to serve as role models, while strictly and efficiently complying with the Corporate Governance and Business Code of Conduct.

- The company encouraged the Company Secretary to attend IOD's Director Certification Program (DCP), Class 287/2019, Thai Institute of Directors Association (IOD).

## TRAINING FOR THE COMPANY SECRETARY

The Company encourages its Executives and the Company Secretary to pursue further education and training that will benefit their roles, the Company business and the Board, including:

- The company conducted training for executives serving as directors of GC and companies under GC on the topic of duties and responsibilities of a director under the laws and good corporate governance principles. The goal was to bolster their knowledge, skills and capabilities as directors of such subsidiaries.
- The company conducted a training program on the topic of Ethical Leadership in the digital era lectured by Professor Vicha Mahakun, President of Anti-Corruption Foundation, to enhance executives' performance in managing the organization with honesty, transparency, accountability with due regard for all stakeholders. In addition, the

## TALENT MANAGEMENT AND SUCCESSION PLANNING

GC has established systematic succession plan in which all employees have been divided into groups based on their competency. A 360-degree assessment and Assessment Center were also applied to assess executives' experience, leadership and capability in organizational management in order to define efficient individual development plans and to prepare them for business expansion, change of organization structures, and replacement of retirees to ensure efficient business continuation. This can ensure seamless transition and achievement of strategic goals. Succession Plans has been implemented to fill vacant positions as a result of retirement, transfer, or as needed for the organization structure under the expansion plan, domestic and overseas. Those appointed as successors will be systematically developed to get ready to assume the new roles as scheduled.

## GOVERNANCE OF GC GROUP

The Company conducts its business through its subsidiaries, joint ventures, affiliates and others as detailed under the topic of Shareholding Structure in Subsidiaries and Affiliates. The Board of Directors approved the implementation of governance guidelines for the operations and management of GC Group which are in line with GC Business Principle according the following details.

- Chief Executive Officer has the authority to establish policies, guidelines, conditions and methods needed to appoint an employee or another individual as a director of companies under GC which are part of the Company's human resource management regulations. Those appointed persons are entrusted with the responsibility to do his or her best for the utmost benefit of the organization where he or she serves as director.
- Ensuring that any major policies of companies under GC, such as Corporate Governance Policy, Corporate Compliance Policy, Finance, Accounting, Tax and Budget Policy, Quality, Security, Safety, Occupational Health, Environment and Business Continuity Policy, Human Resources Management Policy, Sustainability Management Policy, Risk Management Policy and Internal Control Policy as well as any another relevant policies, are in accordance with rules, regulations of Stock Exchange of Thailand and the Securities and Exchange Commission and any other relevant laws.
- Establishing GC Way of Conduct, in order for GC's executives and employees who are being seconded to companies under GC to uphold it as guidelines when undertaking management operations. Those seconded persons are to endorse a range of policies and precautionary internal control system in companies under GC, such as Corporate Governance Policy, Corporate Compliance Policy. GC also encourages companies under GC to operate its business at the same standard to improve its operational efficiency and achieve business goals.

## COMPLIANCE ON OTHER PRINCIPLES OF CG CODE

The Board set a process to consider and review at least once a year the adoption and application of Corporate Governance Code for Listed Companies 2017 (CG Code) for its business context. Any principles not yet or could not be applied are to be recorded with corresponding justification as part of the Board's resolution. Implementations under each item of the CG Code will be evaluated to ensure appropriate outcomes or development plans.

In 2019, GC has at all times thoroughly observed its CG code as detailed below.

1. The Board of Directors reviewed its key performance indicators (Board KPIs) for determining the Board performance for the year 2020 which are in conformity to the CG Code and the DJSI international standard.
2. Board Skill Matrix has been updated to enhance Board development (improving Directors' knowledge and capabilities in areas that are needed or lacking) to align Directors' qualifications with the current nature of business and direction.
3. GC's conduct, under the current business context and condition, was assessed against criteria of the CG Code, to conclude that GC had complied with most of these criteria. In addition, the principles and guidelines of the CG Code, as well as the criteria of CAC and the DJSI international standard, had been reviewed and used in the 2019 revision of the Corporate Governance and Business Code of Conduct Handbook.
4. The Corporate Governance and Business Code of Conduct Handbook has been revised as well as Corporate Compliance Policy to be in line with best practices of regulatory and assessment authorities, both national and under international standards, such as CG Code, Private Sector Collective Action against Corruption (CAC), Dow Jones Sustainability Indices (DJSI).
5. An external consultant was appointed to provide guidelines and recommendations for the assessment of the Board of Directors' performance. Its assessment results will be disclosed in the annual report.

## HEAD OF INTERNAL AUDIT AND CORPORATE COMPLIANCE

Audit Committee Charter recognizes that Audit Committee shall approve the appointment, transfer, termination and merits of the Head of Internal Audit Function. In addition, Audit Committee Meeting No. 8/2017 held on September 18, 2017 resolved to approve the appointment of Mr. Amorn Putiphawan as Senior Vice President, Internal Audit with effective from January 1, 2018 as he possesses knowledge, capability, experience and suitable qualification for the role of internal audit.

Furthermore, GC has established Corporate Compliance Division, under the supervision of Corporate Governance Department, to be responsible for monitoring and overseeing all business unit regarding legal compliance so that its personnel will comply with laws, rules and any other regulations correctly. GC has also assigned Mrs. Rattana Nakasiri, Vice President of Corporate Governance Department, to promote and facilitate good corporate governance practices as well as ensuring that executives and employees of GC Group are to perform their duties in accordance with laws, rules and any other regulations and of the country GC has operated.

# PEOPLE MANAGEMENT AND DEVELOPMENT POLICY

Healthy organization and people are an important mechanism to augment our competitiveness and enhance effective contribution to operational excellence. While serving corporate domestic and international growth, enabling us to fulfill our aspiration “To be a Leading Global Chemical Company for Better Living”.

GC is determined to prepare organization and people readiness to meet future business needs and ensure expected result as planned. GC has developed HR strategy in corporated with GC Group’s people direction, strategic business directions and corporate goals for the utmost effective and efficient management in three major areas focusing on organization, people, and culture with the following actions:

## 1. ORGANIZATION

- Re-organized functional structure to support business directions that requires agility including sales & marketing and build our competitiveness to support international business and diverse business
- Embed a Management of Change process to ensure smooth organizational restructuring, minimize risks and impacts from organization restructuring, and to ensure smooth execution by executives and other employees in their new assignments
- Managed strategic manpower planning to support business growth and ensure optimal manpower to deliver business outcome
- Managed compensation & benefits to ensure our competitiveness with PTT Group and peers in same industry. Also, designed standardization of GC Group compensation and benefits structure to create group synergy



OPERATORS DAY 2019

## 2. PEOPLE

**RECRUITMENT:** To drive corporate strategies towards success, critical position including those in operator, engineer, and researcher is a key success factor to sustain business growth, highlighted this year stated below:

- Recruited for critical positions by launched an Operator Day, aimed at recruiting and selecting those in the operator discipline while preparing candidates’ databases to accommodate business expansion in major projects including Olefins Reconfiguration, GC Polyols and GC Oxirane projects
- Enhanced corporate branding especially for the new generation. GC’s strategic plans consisted of a special recruitment campaign called Synergos Project, blending the Gamification, which is a social trend with a short interview clips of each career path, namely researcher, process engineer, analyst, sales and project engineer. The purposes were to display employees’ in daily routines, corporate culture, work environment and pride of working with GC. After viewing the clip of each career path, candidates would be able to submit job application, resulting in GC’s ability to add to the databases of these groups. Moreover, we increase chance to recruit personnel and mid-career through social media such as LinkedIn

- Relentlessly fostered relations and opportunities for Rayong descendants by promoting activities designed to enhance job application skills, resume writing techniques and interview preparation skills, as seen in the Plook Fun Pun Dao camp

### PERFORMANCE MANAGEMENT SYSTEM:

To motivate employees to sprint their capability in order to bring the best of achievement and organization achievement, GC integrated activities of performance management system end-to-end process and policy. The performance assessment process begins with the annual goal setting, followed by the mid-year review and the year-end assessment. During this process, it is mandatory for all function lines to undergo a Key Performance Indicator (KPI) alignment to make certain that each employee's goals contribute to the overall achievement of our corporate goals. Moreover, company policy requires that employees and their supervisors meet formally at least twice a year to discuss employees' performance to ensure fairness and transparency. Periodic performance check-ins are also enforced, allowing supervisors to monitor the progress of their supervisees and to offer assistance whenever needed. "The Words" video was produced to encourage superiors positive conversation through praises, valuing and morale boosting, to ensure employees' caliber building as well as reinforced performances. After the mid-year review, each function lines undergoes a performance alignment to ensure that performance assessment of the entire function lines is based on the same set of standards. Performance assessment results are part of the peer review criteria in recognition of their contribution and to distinguish top performers from the rest. These results also play a role in the annual salary adjustment in conformity with the Company's Remuneration and Performance Policy. Furthermore, to ensure that these assessments lead to true development, we have integrated our employee performance assessment system with our people development planning by combining a line of communication for our employees to express their own wishes regarding how they expect their career to progress over the course of the next three years. Their wishes are taken into account when we consider job rotations, people development and future recruitment.

**EMPLOYEE RELATIONS:** To boost up employees' better living with a happy and meaningful life, GC provides holistic of employees' health, wealth and mindfulness through the Well-being project, ongoing since 2018. Besides, GC launches long service year awards for enhancing moral for long service employees. A "GC Happy Retirement" project was staged for those due to retire this year to groom them for financial readiness and post-retirement health care and ceremony. Moreover, GC educated retirement preparation session for employee aged 55 to prepare their understanding and readiness of financial management and health care.

### LEARNING AND DEVELOPMENT:

To accommodate business transformation into the digital age, which has rapidly played a role in employees' work and day-to-day living, GC advocated an employee development project to prepare them for efficient handling of change. GC has incorporated concept 70:20:10 (Experience: Exposure: Education) into the design of our development programs for all job families. We believe that this concept will drive changes in employees' attitude and vision. The concept was also employed in designing training courses for internal instructors in pursuit of international expertise. Below are the highlights of these programs:

- **Orientation and the Onboarding Camp:** Designed for newcomers from day one to their first service year at GC, cultivate a culture and build their engagement fostering bonds between new employees. New employees also engage in CSR activities to strengthen relationship between employees and communities



**HEAD OF COMPANY DEVELOPMENT PROGRAM**

- **Data Science and Engineering Program:** To develop data analytical skills for employees in all levels, this program increases employees' capability, particularly for data-oriented
- **STAR Interviewer Certified Trainer Program:** This internal instructor development course, developed by a leading international institute, develops line managers' ability to conduct effective interviews for the recruitment of new employees and selection of those to be promoted in an efficient and effective way
- **Supply Chain Transformation Program:** This program develops senior management's mastery of supply chain management methods, leading to the improvement and development of GC Group's supply chain management system
- **Leadership Development Program 2 (LDP 2) and Head of Company Development Program:** This program was led by instructors from world class educational institutes, foster management skills for leaders and international businesses for senior management in GC and subsidiaries company
- **PSM Enhance Capability and Culture Transformation Training Program and Maintenance & Reliability Value Extraction Enhancing Transformation Program:** Conducted based on guidelines of world class companies to boost the capabilities of personnel in Production and Maintenance on production safety and international standard maintenance. These programs were aimed at fostering a safety culture
- **Competency Readiness Program:** This program certifies personnel competency for handling Management of Change-People, particularly positions involving process safety and plant reliability

Also valuing employees' learning management, GC piloted a Learning Management System to promote employees' lifelong learning channels to ultimately elevate GC into a learning organization.

**KNOWLEDGE MANAGEMENT (KM):** We pay a great attention on organizational development and people development based on an excellent foundation of knowledge. It is our goal to become an effective petrochemical and refinery knowledge based organization and a learning organization. Therefore, knowledge management is a crucial tool that will drive

every unit to collect and exchange their knowledge and experience continuously and systematically. For example, knowledge sharing sessions, sharing of lessons learned to prevent future mistakes, applying knowledge to coach/mentor employees, on-the-job training and classroom training to build skills of employees to be trainers. GC captures knowledge of subject matter experts and those retire in next 3-5 years, to collect expertise and ensure smoothness of operation. Also, to continue improvement upon our best practices, existing knowledge can be further developed, together with exploring future knowledge with networks and stakeholders, leading to improve processes, products and services along with new business development. This year GC improved its knowledge-based system (KBS) by applying digital technology to the management of knowledge, creation of archives and Big Data, which promote individual and team learning in turn enabling all employees to compile, access and search knowledge anytime.

#### CAREER MANAGEMENT SYSTEM:

To encourage our employee to design their own future based on their career aspiration, GC designs a career management system covering the managerial track and the specialist track under success profiles which compiles of competency, exposure, organization knowledge and GC SPIRIT 4 Core Behaviors. There are two types of career growth, first, level advancement in the same band; for this purpose, GC allows employees to present their achievement in April and October, illustrating skills that align with the job expectations of the next level. Second is appointment, meaning promotion into managerial level. GC supports



SEEK DAY 2019

rotation stated in the career path system as to equip them with varieties skills and assignments before stepping up to the managerial level. These career management tools help employees clearly state their career wishes and design their own career plans for consultation with their superiors. At the same time, superiors would have more concrete guidelines for developing their subordinates' competency align with current and future business needs.

**SUCCESSION PLANNING:** To ensure executives readiness and strengthen capability for usual business and growth, we have succession plans in place for managerial positions, starting from division manager level up especially the executives who are going to retire in order to ensure seamless transitions. Our successors are evaluated by a third party, which not only ensures neutrality but also compares them to other executives worldwide. Based on the comparison, we have designed a development program for our talent with a focus on strengthening their vision and outlook as head of the company. Consequently, we were able to appoint new executives to replace all retirees executives in 2018 ensuring seamless transitions for job shadowing, as our designated succession plans. We will continue to regularly develop potential executives to make certain that we are always ready to fill any expected vacancies due to retirement and any key positions in our subsidiaries.

**HR INTERNATIONAL MANAGEMENT:** Our overseas growth has led to new challenging opportunities for our employees in the US, Europe and other Southeast Asian nations. GC therefore amended

its overseas secondment management process to ensure that suitable employees are selected and obtain readiness to work abroad. The process is also linked to the talent pool of the GC Group. Employees are trained for their secondment assignment based on the aforementioned 70: 20: 10 concept that align with employees' career paths. Furthermore, remunerations and living expense support for employees during their secondment period have been reviewed while remunerations, benefits and organization structure for secondment in new countries have been considered conform with Legal compliance, such as work permit and international tax laws, have been reviewed and assured our employees of legal complications risk.

### 3. CULTURE

GC drives GC SPIRIT 4 Core Behaviors through communication, day-to-day activities and systems in order to gear all employees and process to one direction to uplifting company performance. Ultimately, all these lead to GC vision "To be a Leading Global Chemical Company for Better Living".

This year GC is continuously strengthened by all executives, as role model, leading and encouraging employees to embed culture in their practices through daily interactions. GC also emphasis GC SPIRIT 4 Core Behaviors through customers' needs and cross-functional collaboration, which promotes collaboration throughout the value chain. Further, GC has driven GC SPIRIT 4 Core Behaviors through digital transformation, blending GC SPIRIT 4 Core Behaviors and rapid transformation approach to strengthen and support business transformation and growth.



GC SPIRIT DAY 2019

**GC SPIRIT 4 CORE BEHAVIORS**



**Take initiative to create better results**  
กล้าคิด กล้าทำ  
สร้างสรรค์ สิ่งที่ดีกว่า



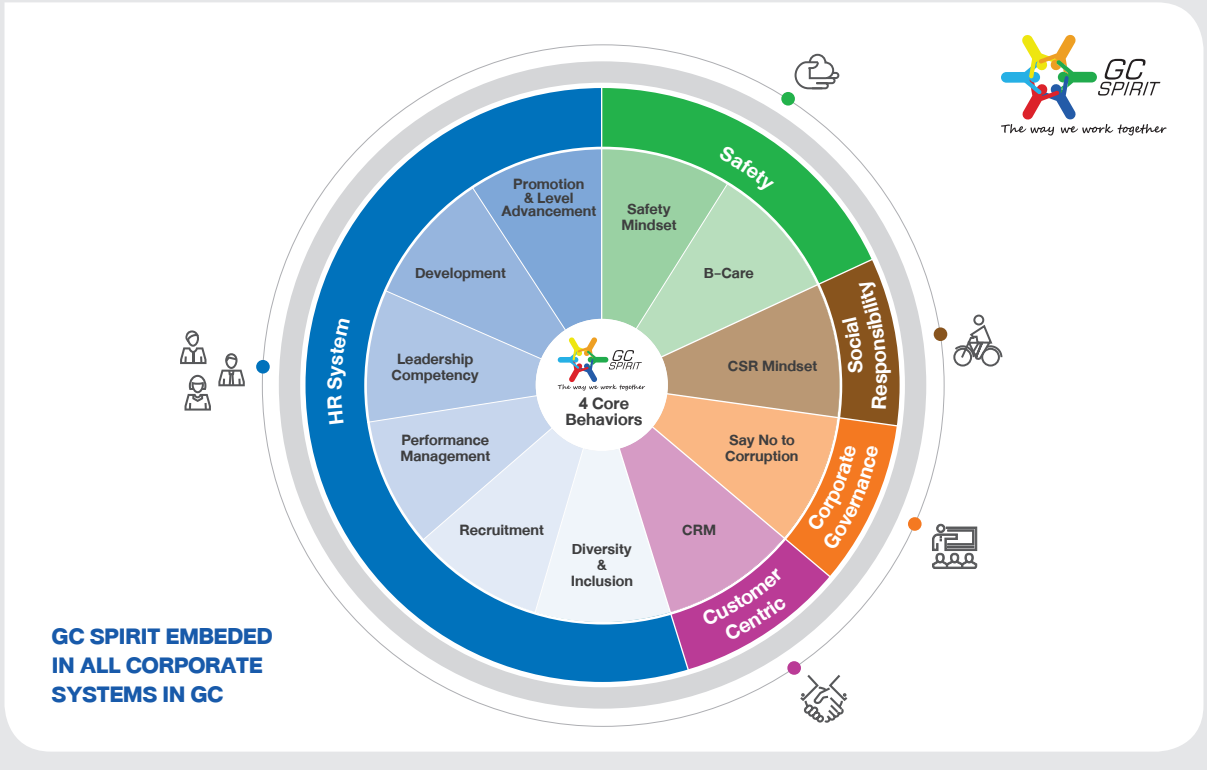
**Keep improving self and inspiring teamwork**  
พัฒนาตน  
ทำงานเป็นทีม



**Work proactively to serve customers' needs**  
ทำงานเชิงรุก สมองตอบ  
ความต้องการ  
ของลูกค้า



**Strive for the greater good**  
มุ่งปฏิบัติงาน  
เพื่อประโยชน์ส่วนรวม  
มากกว่าส่วนตน



The company also engages our people with good work environment, happy workplace, better living, safety and occupational health. We also commit to improve our organization and enhance competency development in all dimensions as people are most valuable asset to promote the company growth and sustainability.

# REPORT OF THE CORPORATE GOVERNANCE COMMITTEE

## Dear shareholders,

In 2019, the Corporate Governance Committee comprised its chairman, namely Professor Somkit Lertpaithoon and its Committee members, namely Major General Nithi Chungcharoen, Mrs. Watanan Petersik and Mr. Disathat Panyarachun. The Committee performed its duties under Corporate Governance Committee Charter and executed tasks as assigned by the Board of Directors. The Committee held a total of seven meetings to proceed the following matters.

### 1. Ensuring Compliance with Requirements, Regulations, Legislation, Rules and Best Practices

- Ensuring the preparation of Annual General Meeting of Shareholders (AGM) to be in accordance with applicable laws and AGM Checklist, corporate governance principles and any other best practices. In this regard, GC received a perfect assessment score of 100 on the 2019 AGM checklist, with a rating of Excellence, for the eight consecutive year from the Thai Investors Association (TIA).
- Ensuring that minority shareholders were given more than three months in advance of the 2019 AGM to propose AGM agenda items and nominate director candidates, from September 16 to December 31, 2019 according to the established criteria.
- Regularly monitoring and advising on corporate compliance practices in GC Group as well as supervising whistleblowing procedures for handling any compliances received from reporting channels to be in line with Whistleblower Policy through the Committee Meeting in every quarter. The Committee also approved corporate compliance plan for the year 2020 in order to prevent and mitigate any risks resulting from noncompliance with laws, rule and regulations (Predictive Compliance).

### 2. Promoting Compliance with Corporate Governance Policy and Business Code of Conduct

- Monitoring GC Group's corporate governance practices to ensure alignment with the requirements and regulations of domestic regulators and international standards, including corporate strategies and business directions. The Committee also approved the 2020 corporate governance plan to determine operation, monitoring, and measuring governance actions for GC Group.
- Monitoring and providing recommendations for the review of adherence to Corporate Governance Code for Listed Companies 2017 (CG Code) issued by The Securities and Exchange Commission for further submission to the Board of Directors. The Committee also disclosed its corporate governance practices in the Annual Registration Statement (Form 56-1) and the 2019 Annual Report and annually revised Corporate Governance and Business Code of Conduct Handbook to ensure its up-to-date and suitable policies and practices.
- Commenting and advising on anti-corruption measures and corruption risk assessment in GC's procedures for the preparation of recertification process of the Private Sector Collective Action Coalition Against Corruption (CAC) for the third time within February 2020. The Committee also approved clear anti-corruption plans for the year 2020 which is suitable for GC's business context and in line with any other regulations, such as CAC project and the Transparent Organization project under the Office of the National Anti-Corruption Commission.
- Reviewing reports on compliance with good corporate governance principles in the Annual Registration Statement (Form 56-1) and the 2019 Annual Report to ensure complete disclosure and compliance with good corporate governance guidelines. As a result, GC continued to receive the mark "Excellence" on Corporate Governance Report of Thai Listed Companies (CGR) of Thai Institute of Directors Association (IOD).

### 3. Supervising Sustainability Practices

- Monitoring and advising on the Company's sustainable development to be in line with international standards, such as Dow Jones Sustainability Indices (DJSI), UN Global Compact and Carbon Disclosure Project (CDP) as well as reviewing every component of the Company's sustainability framework to ensure that it aligned with the global circumstance and rapidly evolving challenges.
- Overseeing the Company's business responsibility towards stakeholders under good corporate governance principles by continually advising and following up on performance through presentations as well as determining an assessment of stakeholders' confidence in GC's business conduct under good corporate governance principles for the purpose of planning to meet the expectations of stakeholders.
- Promoting and valuing stewardship of communities and society of Rayong, GC's operating base, with all sectors through CSR projects (Rayong Programs) designed to resolve problems and meet the expectations of Rayong communities. The Committee also advised and monitored the CSR projects through presentations and site visits. In 2019, GC continued its project, namely the Giving Back to the Society, in which the Company refrained from giving souvenirs to shareholders attending the AGM for the fourth consecutive year. Instead, GC donated Baht 100 for every attending shareholders, totaling Baht 553,000, to purchase medical equipment for Wang Chan Hospital in Rayong province.
- Advocating and providing recommendations on conscientious consumption of resources through a wide array of actions throughout the value chain under the theme of "Circular Living", aiming primarily to lead society in responsibly consuming plastics.
- Approving plans and indicators of GC's sustainability work for the year 2020 activities which cover all three sustainability dimensions (economic, social, and environmental) to maintain its position as a global leader (the Top 10 World Members in Chemical Sector by DJSI).

### 4. Reporting Performance, Assessment and Development

- Pre-setting the dates for its meetings for the entire year, arranging at least one meeting per quarter. Ad-hoc meetings were allowed to take place if necessary. In these meetings, the Committee considered and acknowledged the Company's performance and report as well as providing any recommendations to the Board of Directors and the Management.
- Reviewing the Committee's charter to ensure its contents align with their roles and duties and any applicable rules and regulations.
- Reviewing the corporate governance Committee's assessment questionnaires (group and self-assessment) as well as endorsing the revision of the board of directors' assessment questionnaires (group assessment, cross-assessment, and self-assessment) by an external consultant to be in line with CG Code.
- Reporting performance and both group and self-assessment results of the Committee for the year 2019 to the Board of Directors for their acknowledgment.
- Continuously ensuring director development under good corporate governance principles by encouraging them to attend training courses of Thai Institutes of Directors Association. In 2019, GC invited an external lecturer to share knowledge with directors on crucial technological risks concerning GC's business.

The Corporate Governance Committee places great importance on ensuring GC's strict compliance with Corporate Governance Policy and Business Code of Conduct. The Committee is also committed to continually enhancing corporate governance practices on par with international standards. GC believes that good corporate governance help promote the business operations efficiently while supporting sustainability in order that the Company shall earn the confidence of its stakeholders as well as international recognition.

On behalf of the Corporate Governance Committee

(Signed) Somkit Lertpaithoon  
**(Professor Somkit Lertpaithoon)**  
Chairman of the Corporate Governance Committee

# REPORT OF THE NOMINATION AND REMUNERATION COMMITTEE

## Dear shareholders,

The Nomination and Remuneration Committee comprised its chairman, namely Mr. Don Wasantapruerk and its committee member, namely Mr. Wittawat Svasti-xuto. On November 1, 2019, the Board of Directors' Meeting resolved to appoint Major General Nithi Chungcharoen as its committee member in replacement of Mr. Amnuay Preemonwong and to appoint Mr. Don Wasantapruerk as Chairman of the Committee.

In 2019, the Nomination and Remuneration Committee performed its duties according to its charter and executed tasks as assigned by the Board of Directors. The Committee held a total of five meetings to proceed the following matters.

## 1. Nominating Directors and Executives

- Nominating candidates to replace directors who retired by rotation at the 2019 Annual General Meeting of Shareholders (AGM). Shareholders were given a period of time more than three months prior to the AGM to nominate candidates for vacant positions. Since there were no submissions of candidates from shareholders, the Committee resolved to nominate General Chatchalerm Chalermasukh in replacement of a retiring director. The Committee also resolved to nominate Mr. Prasan Chuaphanich, Mrs. Watanan Petersik, Mr. Don Wasantapruerk and Mr. Supattanapong Punmeechaow to be re-elected as directors for another term. The qualifications of these candidates were aligned with the Company's strategy. In this regard, the 2019 AGM resolved to approve the appointment of those candidates as directors as instructed by the Committee.
- Nominating suitable candidates, namely Mrs. Premrutai Vinaiphath, Mr. Kongkrapan Intarajang and Mr. Prapas Kong-ied, to replace directors who resigned during 2019 to the Board of Directors for appointment.
- Nominating directors to fill vacant positions on the Sub-committees. The Committee considered the qualifications of each director against the composition of each Sub-committees according to regulations of Stock Exchange of Thailand and the Securities and Exchange Commission, the Company's Articles of Association and the charters of Sub-committees. Directors' knowledge, expertise (Skill Matrix) and specialized experience that could benefit their role on the Sub-committees were also taken into account to nominate the said qualified directors to the Board of Directors for the appointment as Sub-committee members.
- Nominating candidates to be Chief Executive Officer (CEO) and President under transparent procedures before proposing to the Board of Directors for their approval.

## 2. Remuneration

- Considering and proposing the 2019 remunerations for the Board of Directors and for the directors of each Sub-committee as well as the Board's bonus for the year 2018. The proposed remuneration was determined based on the Board's performance, economic conditions, the Company's earnings, remunerations of directors working at other companies of similar sizes in the same industry and the Board's responsibilities. In this regard, the 2019 AGM resolved to approve the 2019 Board's remuneration and bonus for the year 2018 as instructed by the Committee.

- Determining remuneration of CEO for the year 2019 based on his performance and assigning responsibilities before proposing to the Board of Directors.

### 3. Performance Assessment of the Board of Directors and Executives for the Year 2019

- Considering and requiring the revision of the Board of Directors' assessment questionnaires (group assessment, self-assessment and cross-assessment) for the year 2019 by an independent external consultant to ensure that its assessment questionnaires are thorough, up to date and in line with Corporate Governance Code for Listed Companies 2017 (CG Code), Dow Jones Sustainability Indices (DJSI) and ASEAN Corporate Governance Scorecard. Apart from the Company's performance, its assessment results were used to determine remuneration of the Board of Directors.
- Establishing the Board's key performance indicators (Board KPIs) to be in line with CG Code, DJSI (Roles and Responsibility of the Board) for determining the 2020 Board's performance. In this regard, the Board of Directors resolved to approve the Board KPIs with effective from 2020 onwards.
- Assessing the performance of CEO and President for the year 2019 before proposing to the Board of Directors.

### 4. Performance Improvement and Development

- Pre-setting the dates for its meetings for the entire year, arranging at least three meetings per year. Ad-hoc meetings were allowed to take place if necessary. In these meetings, the Committee considered and acknowledged the Company's performance and reports as well as providing any recommendations to the Board of Directors and the Management.
- Revising the Committee's assessment questionnaires (group assessment and self-assessment) for the year 2019 to ensure that its questionnaires are thorough, up to date and in line with CG Code and DJSI.
- Requiring the Committee's assessment for the year 2019 and reporting its assessment results to the Board of Directors before disclosing on the Company's Annual Report.
- Reviewing the Committee's charter to ensure that its contents are thorough and in line with any applicable regulations that may have changed.
- Reviewing the determination of directors' Skill Matrix, which includes specialized experience necessary for the Company's operations to be in accordance with CG Code, DJSI and best practices on Nomination Committee of Thai Institute of Directors Association (IOD).

The Nomination and Remuneration Committee strives to perform its duties to ensure that its business operations are transparent and in accordance with good corporate governance principles for the utmost benefit of the Company. This will create sustainable value to the Company in the long run.

On behalf of the Nomination and Remuneration Committee

(Signed) Don Wasantapruek

**(Mr. Don Wasantapruek)**

Chairman of the Nomination and Remuneration Committee

# REPORT OF THE RISK MANAGEMENT COMMITTEE

## Dear shareholders,

PTT Global Chemical Public Company Limited (the “Company”) has confidence that the risk management represents a crucial tool to cope with volatility of global economy, uncertainties and emerging risks that seem increasingly complicated and severe. The Company values development and efficiency improvement of risk management together with enhancement of risk management awareness amongst the employees to create risk management culture and driving it towards business objective and goal achievement, preventing and minimizing losses and effectively fining business opportunities. In 2019, GC obtained the first rank in risk and crisis management section from the Dow Jones Sustainability Indices (DJSI) which GC also achieved the first rank of top global chemical companies. This represent our intention and how well we maintain our risk management system on par with international standard.

In 2019, the Risk Management Committee efficiently and independently performed all its duties within the scope of its roles and responsibilities and in conformity with its charter. The Committee held a total of six meetings to consider and acknowledge agenda items under its responsibility while providing comments and advice, highlighted below:

- Revised and endorsed risk management policy, objective, and framework for flexibility and compatibility with the current business circumstances; and endorsed revision of risk appetite statements to apply with strategic options selection, setting of objectives. Such statements also use as control mechanism for GC’s enterprise risk management.
- Closely monitored situations of Petroleum, Petrochemical and FX as well as provided recommendations for managing prices, spreads and FX risk. The RMC also adjusts hedging framework to more flexible and applicable with the fluctuated situation.
- Provided opinions and recommendations on risk assessment and risk mitigation measures for the high capital investment projects in support of investment decision-making namely Energy Recovery Unit Project by Global Power Synergy Public Company Limited (GPSC) and invest in the newly-issued ordinary shares of GPSC.
- Continually monitored 2019 corporate risk management as well as key risk indicators, while providing opinions and recommendations on risk management for alignment with and suitability for GC’s businesses
- Reported its own performance to the Board of Directors by quarter.
- Considered and recommended on 2020 corporate risk factors to align with GC’s targets and strategic direction, under the uncertainly of global economic and industrial trends.

For 2020, the overall petroleum and petrochemical industry still retains the volatility seen in 2019, particularly for oil prices, product price and spreads including uncertainties arising from e.g. both domestic and foreign politic, potential flaring of the US-China trade war, epidemic, drought as well as government direction and consumers behavior change to be environmental conservation. These factors directly and indirectly impact demand for GC’s products, so the Committee will be closely monitored and will provide opinions and essential recommendations to manage such factors.

All in all, the Risk Management Committee has adequately and properly fulfilled its roles as prescribed in the charter. A corporate risk management system has been developed and improved to align with standards and rapidly changing nature of the industry. Besides, the Committee continually monitored and commented on all aspects of the Company's risk management, embracing all key short-term and long-term risk as well as given equal attention to emerging risks potentially affecting GC's future businesses. Therefore, the Committee is confident that GC has suitable and effective risk management with a healthy risk appetite that will enable it to achieve its goals and continually create sustainable value to its business in the long run.

On behalf of the Risk Management Committee

(Signed) Prasert Bunsumpun

**(Mr. Prasert Bunsumpun)**

Chairman of the Risk Management Committee

GET READY FOR  
ECO-FRIENDLY  
LIFESTYLE



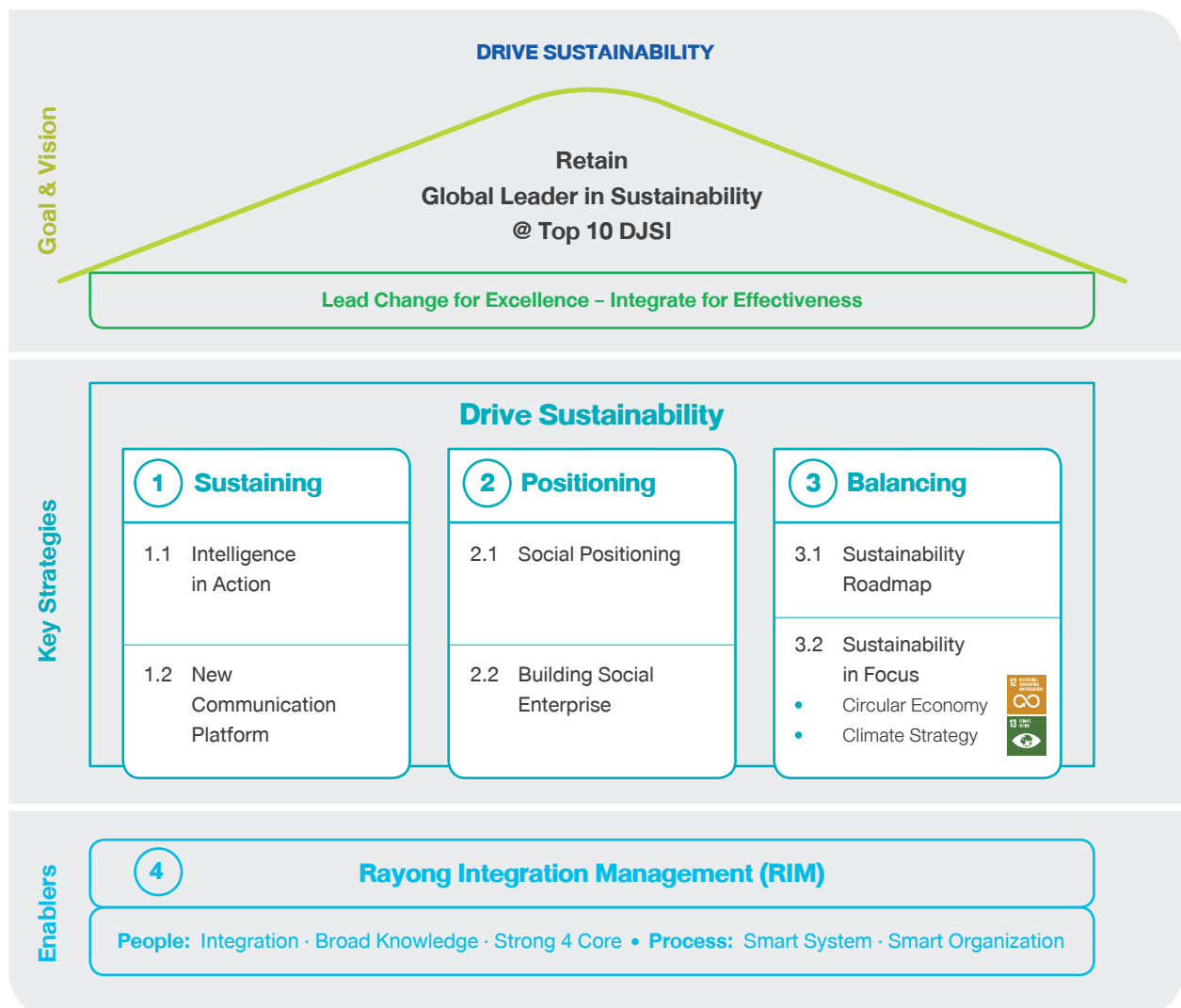
# **SUSTAINABLE DEVELOPMENT**

# SOCIAL RESPONSIBILITY AND SUSTAINABLE DEVELOPMENT

At GC, we have always pursued our businesses with sustainability as commitment to balancing the economy, social and the environment, known as the Drive Sustainability Strategy. Despite numerous challenges encountered in 2019, we were fully committed to adhering to our vision of being a leading global chemical company for better living. With this vision and commitment, we have become the world's number 1 role model for sustainable organizations ranked in Chemical Sector by the Dow Jones Sustainability Indices (DJSI), maintaining the Top 10 DJSI for the seventh consecutive year. Moreover, we are the only Thai business as a member of United Nations Global Compact at the LEAD level. In addition, we have won several awards on ESG (Environmental – Social –

Governance) by many local and international investors and institutions, including SET Sustainability awards of Honor from the Stock Exchange of Thailand (SET) for the third consecutive year, membership of the FTSE4Good (an investment index for outstanding performance on environmental, social and governance), and MSCI (Morgan Stanley Capital International), reflecting professional conduct on sustainability and a role model for the entire value chain, triggering expansion of sustainable development for the entire industry and the nation.

We pursue our sustainable development under four major strategies as follows.



## STRATEGY 1: SUSTAINING

We have successfully become an industry leader in sustainable development; our first strategy is therefore to sustain this success. With a tremendous amount of data and a systematic database, integration with digital data analytics would multiply our competitive advantage and knowledge sharing, and in turn continuously improve the efficiency of data interface. We have already introduced digital data analytics to legal data and enhanced our communication by digitally interfacing with external digital media to better and promptly respond to more rapidly changing situations.

## STRATEGY 2: POSITIONING

We are among the pioneers to introduce and promote the concept of Circular Economy in Thailand. We have initiated many projects promoting more of this concept with our partners. Our leading position has been widely accepted, evident in the Government invitation to help define the direction of Circular Economy for the country, a call by the Thai Industrial Standards Institute (TISI), Ministry of Industry, as a working team to help define standards of products under Circular Economy, and by the Ministry of Higher Education, Science, Research and Innovation as a leading private organization to help drive the BCG (Bioeconomy – Circular Economy – Green Economy) at the national level.

## STRATEGY 3: BALANCING 2E1S (ECONOMIC, ENVIRONMENT, AND SOCIAL)

Under the global Sustainable Development Goals (SDGs), we have pursued our businesses with a fine balance in all dimensions, including the focus strategy following.

## SDG GOAL 12: RESPONSIBLE CONSUMPTION & PRODUCTION



Our SDG Goal 12 is to promote among the industrial, business and consumer sectors recognition of efficient utilization of natural resources, the reduction of waste, reuse, and the after-use management of products such as the upcycling of plastic waste, which is an innovation to add value to plastic waste. From this strategy, we have been truly widely recognized as leader, invited to be partner with the governance and industries, and a role model for Circular Economy.

## SDG GOAL 13: CLIMATE ACTION

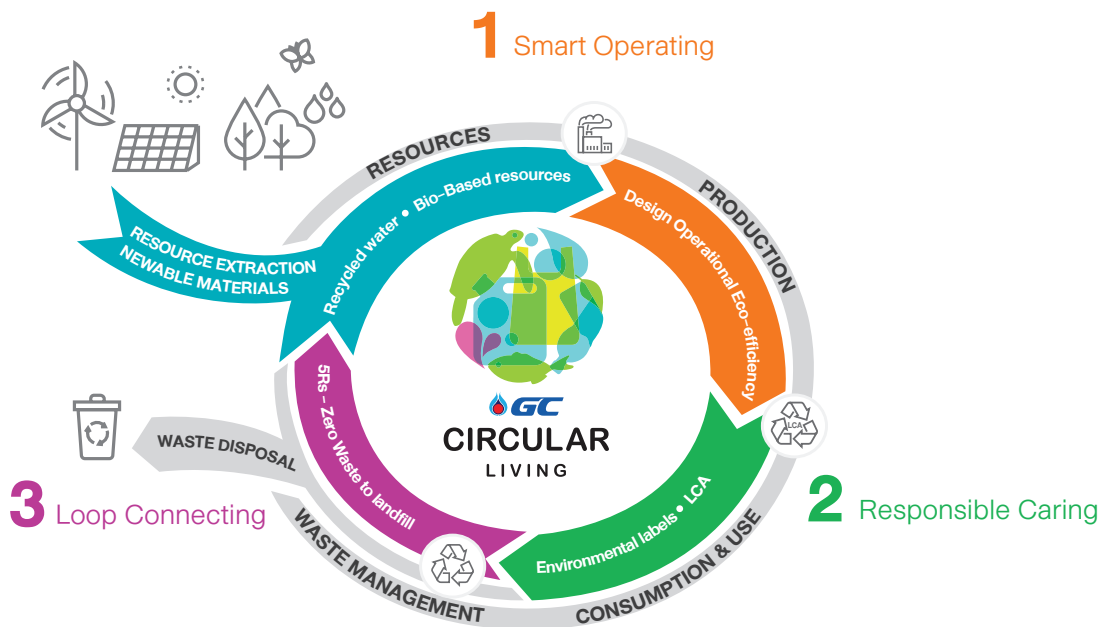


- Under the global's target to limit the global average temperature not to exceed 2 degrees Celsius by 2100.
- Under Thailand's ratification signed by the Thai Prime Minister at the Paris Agreement (COP 21) to reduce 20% of greenhouse gas (GHG) emissions by 2030.
- Our SDG Goal 13 is full of challenges, strategies directed to climate actions, and aligned with the Thai Prime Minister's ratification to reduce GHG emissions by 20% by 2030, with a base year (2012). This target focuses on both Scope 1 direct GHG emissions from our operations, and Scope 2 indirect GHG emissions from purchased energy which supply it to our operations. Our climate strategy target calls for reduction of GHG emissions per production by 52% (science based target), with a base year (2012), by 2050. This can be achieved by implementing controls of higher standards from the regulatory compliance level, increasing efficiency of energy consumption

through continuous improvement or more investment in environmental protection efficiency, installing solar rooftops for offices, warehouses and workshop facilities in Rayong, producing the low carbon product and having our carbon footprint of product certified. We successfully achieved all our targets under this climate strategy in 2019, evident in several outstanding awards, including the climate change management, A-List from Carbon Disclosure Project (CDP), Low Carbon and Sustainable Business Index (LCSI), excellence award from Thailand Greenhouse Gas Management Organization (Public Organization). These awards represent assurance of our commitment and active participation in national and international efforts to reduce negative effects of climate change.

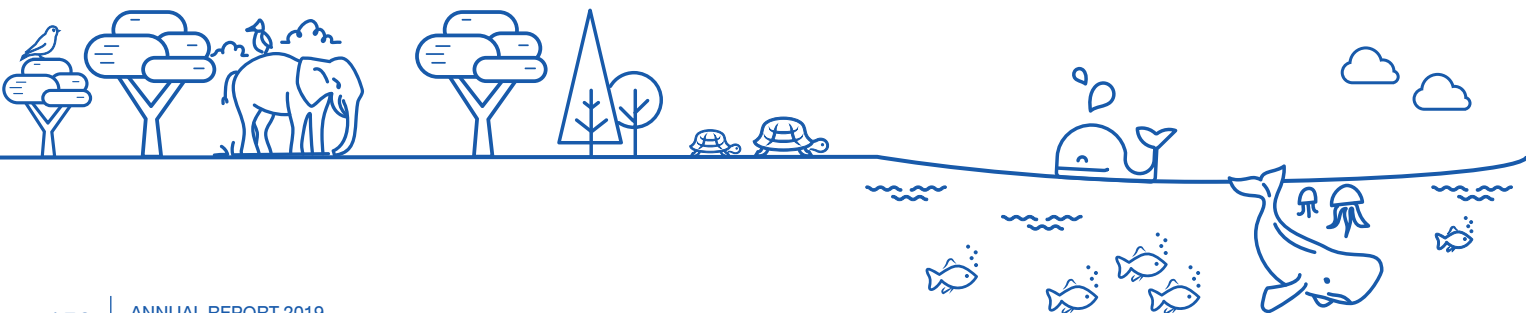
## STRATEGY 4: RAYONG INTEGRATION MANAGEMENT

Recognizing the value of our strategic production facilities' location, the integration of our management in all aspects of the economy, environment, and social is focused on Rayong. We focus our work analysing and monitoring programs continuously both internal and external organizations. Our periodic surveys to assess community satisfaction have been routinely analyzed to define true needs of the communities and society to be incorporated with several business and development projects for the future. Our 2019 community satisfaction assessment yielded 90.10% satisfaction, constantly rising from the previous years, reflecting successes of our CSR projects and responses to community needs as well as improvement of the quality of life of society and communities in Rayong, in conjunction with the sustainable growth of our business.



**TO BE A ROLE MODEL FOR CIRCULAR ECONOMY THROUGHOUT THE VALUE CHAIN**

Further details of sustainability performance of GC can be found in Intergrated Sustainability Report 2019.



# SAFETY, OCCUPATIONAL HEALTH, AND ENVIRONMENTAL MANAGEMENT

WITH ITS OPERATIONS ABIDING BY THE QUALITY, SECURITY, OCCUPATIONAL HEALTH, ENVIRONMENT, AND BUSINESS CONTINUITY POLICY (QSHEB POLICY) IN ACCORDANCE WITH INTERNATIONAL STANDARDS AND BASED ON GOOD CORPORATE GOVERNANCE PRINCIPLES AND STRICTLY ADHERING TO APPLICABLE STANDARDS, REGULATIONS AND LAWS ON SAFETY, OCCUPATIONAL HEALTH AND ENVIRONMENT, GC GROUP HAS WON PRAISE AND HONORS. THIS IS A TESTIMONY TO OUR COMMITMENT TO BUSINESS PRACTICES THAT STRIVES FOR EXCELLENCE.

## QUALITY, SECURITY, SAFETY, OCCUPATIONAL HEALTH, ENVIRONMENT, AND BUSINESS CONTINUITY POLICY

GC is committed to conducting business to become a chemical industry leader and to be an innovative organization with corporate social responsibility (CSR) and to improving the effectiveness of quality, security, safety, occupational health, environment, and business continuity as follows:

1. Comply with quality, security, safety, occupational health, environment and business continuity laws and regulations, as well as applicable standards and requirements.
2. Implement total quality management (TQM) with quality, knowledge and productivity management tools to satisfy our customers and develop environmentally friendly innovations.
3. Manage risk management to prevent danger, work-related illnesses, accidental losses, injuries and property damage, while fostering the B-CAREs safety culture and exercising Process Safety Management (PSM) to ensure the safety of every person.
4. Be vigilant over security threats so as to protect lives, assets, data and business continuity.
5. Focus on good occupational health and working environment, including the promotion of good health and a happy in workplace.

6. Assess and prevent environmental impacts, ecosystems and sustain biodiversity by focusing on improvement, prevention and reduction at the sources, including the use of resources, energy, water and waste management following the principles of Circular Economy. GC aims to increase its efficiency to reduce greenhouse gas (GHG) emissions and the ability to adapt to climate change. It is determined to foster an environmental culture by disseminating information and encouraging its employees and stakeholders to be aware of and participate in the corporate environmental culture.

All executives are responsible for achieving GC's objectives and goals, serving as role models for development and the maintaining of quality, security, safety, occupational health, environment and business continuity (QSHEB) management systems by supplying sufficient resources so that all employees may be involved in the implementation of this policy as well as communication of the QSHEB results to relevant parties thoroughly.

The summary of the occupational health and environmental safety management in 2019 is as follows:

## 1. SAFETY MANAGEMENT

### 1.1) PERSONAL SAFETY

GC focuses on proactive occupational health and safety to reduce the risk of accidents from operations such as losses from workplace injuries. Therefore, it has established guidelines for managing safety in production processes and personal safety covering staffs, contractors and suppliers as well as developing a monitoring system to check and assess safety by the integration of various systems to become the GC Management System (GCMS) so that production operations standards may be maintained with safety and effectiveness, thus achieving GC's "Zero Accident" goal. In 2019, the Company has completed many safety projects as follows:

- **SAFETY CULTURE PROMOTION PROGRAM TO INCREASE SAFETY AWARENESS (B-CARES STRENGTHEN)**

The Company has promoted various safety activities under B-CARES to develop skills and raise awareness among employees and contractors to emphasize the safety culture. To this end, senior management has valued and paid attention by visiting production operation areas. This effort fosters and drives a culture of safety responsibility through the Management Safety, Energy and Reliability Walk activity which are the key to a sustainable safety culture. This activity is organized every Thursday and circulated to all areas of the GC Group to demonstrate the Felt Leadership of the management among employees and contractors.

- **LIFE SAVING RULES**

Since 2017, the Company has analyzed incident statistics, substandard actions and conditions, comparing with the global standards to enhance the improvement of safety culture to cover employees and contractors operating at sites. Life Saving Rules is composed of 4 clauses including: 1. Strictly complying with the instruction as indicated in the work permit; 2. Working in confined spaces must receive permission and there must be monitoring of confined spaces atmosphere before working; 3. Checking energy isolation before initiating work; and 4. In case of working at high ground, there must be Fall Arrestor standard. The rules have put into practice for further continuous improvement and preventing the risk of mortality. At present, the program is integrated

with various safety auditing systems, such as Management Line Walk, Field Risk Assessment, and Understand Risk Program. The assessment reports were summarized and presented to the management for further monitoring and systematic actions.

- **SAFETY AWARENESS PROJECT FOR SUPERVISORS (SAFETY IN LINE OF COMMAND)**

The Company has analyzed accidents statistic and found that most recordable accidents had happened to contractors. To follow the steps of work correctly, the Company has organized a Supervisory Skill Workshop to raise safety awareness to operators (supervisor level) who are responsible for controlling worksite safety.

- **CONTRACTOR SAFETY PARTNERSHIP PROJECT**

GC promotes a good safety culture and disseminates knowledge on the management and prevention of proactive accidents to contractors and partners.

- **HAND INJURY PREVENTION PROGRAM**

The Company promoted the sharing of experience among the company, companies under GC and contractors of business partners, resulting in the development of special tools and effective practices which effectively reduced hand-related accidents, the major accidents happened in GC Group.

- **UNDERSTAND RISK PROGRAM**

The company has prepared the risk assessment program to ensure its operation in every situation. Under the program, operators were asked to assess their knowledge so that they would be

Life Saving Rules



Hand Injury Protection Program

aware of on-site risk (Understand Risk). This would prevent an occurrence of accidents in every step of the operation from the beginning of a work permit, toolbox talk, before working and while working.

- **GC GROUP SEEK DAY 2019: YEAR TO MOVE FORWARD**

GC organized the GC Group SEEK Day 2019 (Safety, Environment, Energy and knowledge management day) to enhance the awareness of safety, occupational health, and the environment under the PSM and B-CAREs safety culture. The CEO and President have recognized and presented awards to outstanding employees who exemplified safe working and care for the environment, as well as exhibition contests from business units, able to exchange knowledge, foster pride for being a part of the success of safety, occupational health, and environmental performance.

In addition, factories in GC Group have won the Outstanding Safety, Occupational Health and Work Environment Award: Gold Level for the 21<sup>st</sup> consecutive year (1998 - 2019), representing the ongoing national outstanding safety performance.

With the extensive implementation of safety, occupational health, and environmental management, GC's 2019 safety performance has been ranked in the first quartile internationally with the Total Recordable Injury Rate (TRIR) of 0.05 person per 200,000 working hours. In addition, GC also adjusted its operation management and emphasized these projects to employees and contractors to adhere to safety principles. To achieve the goal to become a zero-accident organization, GC also encourages its employees and contractors to participate in all levels of safety projects.

## 1.2) PROCESS SAFETY

GC continuously strengthens the safety standard system in production processes to ensure that they are efficient and aligned with the 5-Year PSM Roadmap developed in 2017. The last three years' performance showed that GC had achieved its target of reducing accidents in production process. Examples of outstanding projects in 2019 were the Field Risk Assessment (FRA) project and the Smart PSE project. These projects is aimed at improving the Company's safety standard to achieve its goal of becoming a Zero Accident Organization. The details of these projects are as follows:



### GC GROUP SEEK DAY 2019

- **FIELD RISK ASSESSMENT (FRA) PROJECT**

The Company has collaborated with DuPont experts to create an FRA project. This project were implemented to enhance the knowledge and capability of operation staffs to increase the observation ability and recognize the risks and potential impacts of deviations from the standards or specified work procedures as well as to increase the Barrier of Protection, reducing the accident risk in the production, regarding personnel, equipment or facility and technology. The goal of the FRA project is to reduce process accidents and workplace injuries from Process Safety Event. The Company collected all sharing issues to create guidelines for improving safety standards and safety engineering design.

- **THE SMART PROCESS SAFETY EVENT (PSE)**

GC developed digital systems to support the Integrity Operating Window (IOW) management for maximum efficiency and effectiveness. The systems can monitor Process Safety Near Miss (PSE Tier3b) to monitor and forecast the possibility of an accident, including the establishment of appropriate risk mitigation measures that prevent the Company from equipment damage or process disruption. In addition, the system could be applied to assess the devices' lifetime and inspection planning.

- **IMPLEMENTATION OF THE BOW-TIE DIAGRAM**

GC adopted Bow-Tie risk analysis to analyze the risks of danger or possible accidents and the impacts of such events that could lead to any Catastrophic Event or a Major Accident Event (MAE). Furthermore, Bow-Tie Diagram could also assess the effectiveness and adequacy of equipment as well as incident management

measures, which help communicate information to those responsible persons in all sectors, including those that may be affected so that they have an overall understanding of risk management. In case of an incident, the Bow-Tie Diagram also analyzes its causes and evaluates management practices that result in the lowest acceptable impacts (As the Low As Reasonably Practicable: ALARP).

### 1.3) FIRE-FIGHTING AND EMERGENCY CRISIS

- **EMERGENCY MUTUAL AID GROUP: EMAG**

GC is a founding member of Emergency Mutual Aid Group (EMAG), established as a center for industries in Map Ta Phut municipality, to cooperate and support others in emergencies. GC actively participated in drafting an Emergency Plan for Rayong province and an Emergency Action Plan for Map Ta Phut Industrial Estate Group. GC, in collaboration with a group of industrial plants in the Map Ta Phut area to help nearby communities set up and conduct emergency response drills at the Rayong provincial level. In addition, the Company has designated employees with expertise in emergency response and mitigation to support the Governor of Rayong, Rayong Province Disaster Prevention and Mitigation Office, Map Ta Phut Municipality, and group of industrial factories in Map Ta Phut to help support the community in creating their emergency plan and rehearse plans in case of accidents from the industries affecting the community.

- **SECURITY DRILLS FOR INTERNATIONAL SHIP AND PORT (NASMAX)**

GC has organized drills for international ship and port security plans (NASMAX) with government agencies, local administrative organization, ships and ports by identifying the ocean threats, determination of measures to prevent risks to ships or ports, and continual improvement of security measures of GC and ports to achieve maximum efficiency in line with the International Ship and Port Facility Security Code (ISPS Code).

- **BUSINESS CONTINUITY MANAGEMENT SYSTEM (BCM)**

The Company has implemented the Business Continuity Management System for its readiness, and ability to coordinate, respond to situations, and recover effectively after the incident so that business can continue operating smoothly, by establishing a structure to define responsible parties in various fields in a form of the Business Continuity Plan (BCP) as a business recovery standard for all GC Group's plants.

- **PROACTIVE FIRE-FIGHTING RELIABILITY AUDIT**

GC provided the inspection of a proactive fire-fighting equipment system to improve the readiness for use which meets the standard as well as providing a contingency plan for critical equipment or systems. GC also established guidelines for inspecting and testing the fire-fighting system, leveraging appropriate manuals.

- **INTEGRATION OF TECHNOLOGY INTO SAFETY MANAGEMENT**

The Company integrated technology and innovation into safety management to improve safety systems for prompt risk analysis as well as quick, accurate monitoring, thus reducing the risk of production accident and workplace injuries. These projects include Smart PSE, Safety Now, E-FRA and the Bow-Tie Diagram.

## 2. OCCUPATIONAL HEALTH MANAGEMENT

GC places importance on employee health and committed to continuously Developing its practices to be in line with international standards. It has therefore adopted and applied the Health Performance Index (HPI) from IPIECA - IOGP, a system for assessing the standard of occupational health management to the Company's operations, which is in line with the Sustainable Development Goals of the United Nations 3: Health and Well-being (UN SDG 3: Good, Health and Well Being).

The Company has developed computer software to improve the efficiency of occupational health management as follows:

- **HEALTH RISK ASSESSMENT SOFTWARE:** The software is created for health risk assessment and reviewed the prevention of work-related illness measures especially among process operators. In addition, the result assessment could be use to review of employees' health checkup programs as a way to proactively assure employees' good health. Data were also used to review our work areas' industrial hygiene measurements to ensure a safer work environment.
- **E-HEALTH BOOK**  
Utilization of information technology for collecting employees' health information was made available electronically for ease of access and able to analyze for making the appropriate health promotion project for employees.
- **SAFETY DATA SHEETS (SDS)**  
SDS is a chemical safety information system where employees can quickly and thoroughly search and easily access information for the safe use of chemicals.
- **MEDICAL CLINIC SERVICE**  
The system collecting employees' medical data of those received medical treatment at a medical facility of the Company. It enables data analysis for future health care planning.

The Company continuously organizes health promotional activities for employees and contractors with the goal for employees and contractors remaining healthy and being more efficient at work. This is part

of organizational development for sustainable business excellence. Health promotional activities are as follows;

- **HEART CONSERVATION PROJECT**  
This project assesses the risk of cardiovascular diseases of all employees by medical specialists so that they can provide cardiovascular diseases advise and follow up treatment for at-risk groups.
- **PLOGGING PROJECT**  
This project encourages employees to exercise by running and collecting trash on the beach and in the communities. It enables employees and communities to develop good interaction with each other.
- **IMPROVEMENT OF ERGONOMICS**  
This project improves the working postures of employees in line with the principles of ergonomics to reduce the risk of the Office Syndrome.
- **MEDICAL ASSISTANCE PROGRAM**  
The Medical Assistance Program (MTA) is designed to help employees who suffer from treatment by specialized medical team. The team would analyze employees' data and provides appropriate and timely treatment.

In addition, GC has the monitoring measures for the seasonal influenza situation that is spread every year in Thailand. To this end, GC has carried out free vaccination against influenza for all employees, directly hired contractors, and their family members. This effort demonstrated GC's care for employees and their families.

### 3. ENVIRONMENTAL MANAGEMENT

GC is committed to becoming a leader in the international chemical business with environmental stewardship for sustainable development. GC also aims to become a leader in the management and development of environmentally friendly product design , and indeed operates its business in compliance with national and international environmental standards and requirements as well as the National Economic and Social Development Plan No. 12 (2017-2021), the 20-year National Strategic Plan for 2017-2036, and Sustainable Development Goals (SDGs) set by the United Nations as follows:

GC Plogging Project



### 3.1) ADHERENCE TO ENVIRONMENTAL STANDARDS AND REQUIREMENTS

GC values the prevention of environmental impacts by implementing control and protection from the design stage before project commencement. This includes a comprehensive environmental impact study with different dimensions of projects in the Environmental Impact Assessment report (EIA). GC strictly implements measures to prevent and reduce impacts as well as regularly reporting the results of the implementation of the measures to governmental authorities. The Company implemented the ISO 14001: 2015 Environmental Management System and adopted other international standards, guidelines, and good practices such as the Environmental, Health, and Safety Guidelines issued by the International Finance Corporation (IFC) of the World Bank group.

### 3.2) PROACTIVE ENVIRONMENTAL MANAGEMENT (PEM) AND SUSTAINABLE DEVELOPMENT INDICATORS

Since 2008 GC has adopted the philosophy of resource management along with sustainable business operation known as Eco-efficiency from the Manual of the United Nations Conference on Trade and Development (UNCTAD) as indicators of environmental performance. The intention is to improve the use of resources for maximum efficiency and reduce the environmental impacts caused by the activities and production processes under Circular Economy concept. Meanwhile, the Company developed an Environmental Performance Database under the framework of Global Reporting Initiative (GRI) Standards which is in line with UN SDG 12: Responsible Consumption and Production. GC together with all factories under GC Group is the first petrochemical and refinery organization in Thailand that conducted accounting, measurement, and reporting of Greenhouse gas (GHG) emissions and reduction in accordance with ISO 14064-1: 2006.

In addition, the Company has arranged proactive environmental management plans in both plants and its surrounding areas by applying Circular Economy concept as base guidelines to maximize the benefit of resource utilization, control environmental quality to better than standard and reduce impacts on the environment and communities. The example of operations are as follow:

- **AIR QUALITY CONTROL CONTROL AND REDUCTION OF VOLATILE ORGANIC COMPOUNDS (VOCs)**

The Company controls and reduces volatile organic compounds (VOCs) at sources, beginning with the annual accounting of VOC sources. In case of TVOCs exceeding the control limit, which is more stringent than the governmental limit, the Company immediately fixes equipment to reduce potential impacts and implements a maintenance program of equipment to minimize VOCs arising to the atmosphere. GC has installed a Vapor Recovery Unit (VRU) and a Vapor Return Line to transport the vapors of hydrocarbons potentially which might be emitted into the atmosphere, and brought them back into the storage tank for proper use or proper management. In addition, the Company has installed bio-filter technology to control and treat VOCs in the process area and the wastewater treatment plant of the factory by decomposing vapor or Hydrocarbon compound of microorganism in order to limit odor in the community and environmentally friendly. To further control and reduce VOCs, GC and five petrochemical industrial estates and one port in the Map Ta Phut area have initiated a pilot project to manage benzene vapor release by using Code of Practice (COP) measures to help solve benzene release problems from industrial plants. This effort demonstrated care for the community, society, and environment.

#### Installation of New Bio-filter at Unit 5600



## **AIR POLLUTION MANAGEMENT**

GC has promoted the reduction of air pollution, both internal and external, improving the production processes to produce cleaner fuels to meet the EURO 5 standard. GC also aims to limit the content of sulfur, a component of diesel fuel, to a maximum of 0.5 percent by weight by 2020 which is in accordance with the International Maritime Organization (IMO) and the fuel quality improvement measures required by the Department of Energy Business, Ministry of Energy.

- **NATURAL RESOURCES MANAGEMENT**

### **EFFECTIVE USE OF RESOURCES UNDER CIRCULAR ECONOMY CONCEPT**

GC aims to manage resources efficiently for the utmost benefits. To encompass the product development stage and minimize potential waste by exchanging between GC's products, raw materials, and fuels derived from production process. This effort added value between plants. For example, the aromatic plant increases the value of its Off-Gas by transporting Ethane, Butane and Propane for use as feedstock for the Olefins plant instead of burning it. This resource utilization effort adds 107 million Baht per year. Furthermore, GC's refinery receives Heavy Residue produced from the Phenol plant as raw material for fuel oil.

### **IMPROVEMENT OF WASTE MANAGEMENT**

GC is committed to minimizing environmental impacts. Since 2015 the waste management effort of the company has achieved zero industrial waste to landfill and continue proceeding until now. Moreover, the Green Turnaround Management project implemented preventive measures and reduced environmental impacts derived from the maintenance of machinery and equipment, including waste management, both in process areas and in administrative areas. For example, the Green Insulation is an effort to reuse insulators by improving the method to remove and store them so that they may remain in good condition and reusable. In 2019, it was found that this year more than 70 percent of the insulators recovered from turnarounds are reusable. In addition, the company has changed food containers to reduce the use of single-use containers by more than 200,000 Baht saved in 2019.

## **STAKEHOLDER COLLABORATION**

GC encourages and emphasizes the community and youths to value recyclable waste with maximum usage efficiency, for example, the Waste Bank pilot project by community enterprises, which is a model of waste management for community and school project, provides the opportunity for communities and schools to learn and cultivate environmental conservation. Students learn proper basic waste segregation as well as supporting community enterprises to monetize recyclable waste for further distribution of income to communities and society.

- **WATER MANAGEMENT**

### **INTERNAL WATER MANAGEMENT**

GC has a policy for sustainable water management under the 3Ws: efficient use of water throughout the production process (Water-Saving), seawater desalination to reduce the use of freshwater (Water Innovation), and assessment and reduction of impacts from water usage throughout the product lifecycle (Water Stewardship) for water usage efficiency. The Company implemented a project on efficient use of water and innovation in water management, such as the installation of reverse osmosis to recycle water for use and reduce wastewater disposal. In 2019, the Company could use the recycle water counted as 32 percent of the Water Circular Index. In addition, the Company continues monitoring and controlling the water quality required by law through COD online before disposing it outside the plants.

### **EXTERNAL WATER MANAGEMENT**

GC cooperated with all sectors to integrate and promote the conservation of watershed areas, using the 2Ws approaches: water management through integration efforts (Water-Related) and sustainable watershed conservation (Water Conservation). For example, Khao Huai Mahat Forest Conservation Project aimed to restore the fertility of the watershed and promote biodiversity. The project further covered community education on the conservation of natural resources with reforestation and weir-building activity by the Company, community, and government using the winged-plastic sacks, a GC product.

## SUSTAINABLE WATER MANAGEMENT

The policy of water management both inside and outside the Company under the 3Ws + 2Ws concept aimed to ensure the water sufficiency for all sectors. This aligns with UN SDG6: Clean Water and Sanitation. GC has evaluated the risk of water management (quantity and quality) of Map Ta Phut area by using a Water Risk Map through Aqueduct Water Risk Atlas and WBCSD Global Water Tool, developed by the Water Risk Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) to assess risk and plan for water usage efficiency. Furthermore, the Company is a member of the water task force (Water War Room) and a member of the Water and Environment Institute for Sustainability (WEIS) to closely monitor and report the water situation so that the water management project is propelled to ensure uninterrupted business operation on water supply. These ongoing efforts resulted in GC recognized as a Water Disclosure Leader. It reflected corporate excellence and transparency. GC was also certified for water use throughout the product lifecycle under a Federation of Thai Industries project.

### 3.3) LEADER IN SUSTAINABLE ENVIRONMENTAL MANAGEMENT

#### • CLIMATE STRATEGY

GC recognized its leadership role in dealing with climate change. With its energy management policies, the Energy Conservation and Efficiency Project was designed to support the government in attending the Conference of the Parties 21 on Convention on Climate Change (COP 21), which aimed to control the global average temperature rise to not exceed 2 degrees Celsius from the previous level of the Industrial Age. The Company also aimed to reduce GHG emissions based on the Science-Based Targets Initiative in which GC voluntarily reduced GHG emissions derived from each product by 52 percent within 2050 as

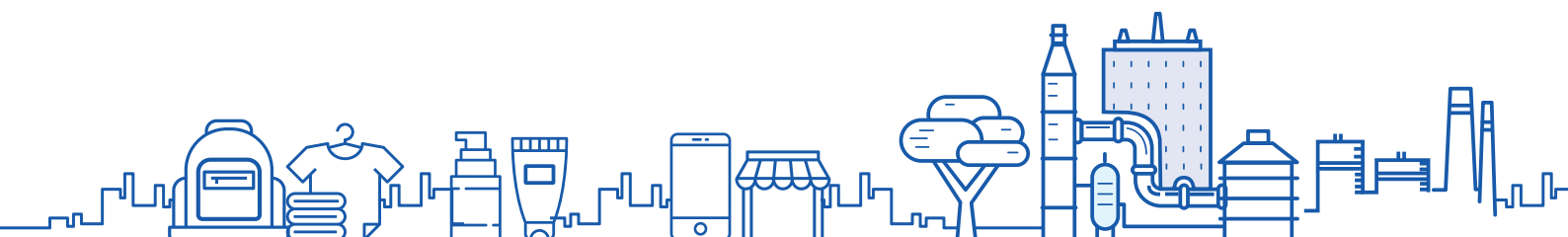
compared with base year 2012. In addition, GC planned to reduce GHG emissions by 20 percent within 2030. GC also implemented climate change management process, which is in line with GC's 5-year strategic plan and UN SDG13: Climate Action. With the Company's continuous effort under a policy regarding climate change management, GC has become Climate Disclosure Leader which reflects the fact that GC is excellent organization and continues to disclose the information transparently.

#### APPLYING TECHNOLOGY TO REDUCE GREENHOUSE GAS EMISSIONS

GC selected new High Selectivity Catalysts (HSC) to reduce raw material usage and CO<sub>2</sub> emissions that have negative impacts on the environment. GC also delivered CO<sub>2</sub>, a byproduct from the production, to manufacturers for the production of purified CO<sub>2</sub>. In addition, GC sold CO<sub>2</sub> to other manufacturers for the production of Sodium Carbonate in order to further reduce GHG emissions, which is considered a beneficial use.

#### • CIRCULAR ECONOMY

GC recognizes the importance of transitioning to the future of Circular Economy in Thailand. GC then established corporate strategy, under circular economy concept, to drive business, focusing on maximizing the benefits of resource utilization, re-using and recycling used resources within the organization and minimizing waste by implementing the 5Rs policy (Reduce, Reuse, Recycle, Refuse, Renewable) which aligns with the United Nations Sustainable Development Goal 12: Responsible Consumption and Production. Additionally, GC strives to become a leader in applying circular economy concept under BS 8001 Framework. In this regard, GC, alongside with Chulalongkorn University, implemented strategic plan and preliminary operational guidelines regarding circular economy so that GC would become circular economy leader.



- **PRODUCT STEWARDSHIP**

GC is committed to producing environmentally friendly and consumer healthy products with due regard to the impacts of products that may have arisen throughout the value chain by implementing product stewardship policy. For five years, this policy has been considered as guidelines when managing and operating its business as well as manufacturing products with due regard to environmental impacts and safety throughout the product life cycle. GC also applied the Life-Cycle Assessment (LCA) for all products to better serve future customer’s demand for environmentally friendly products. In addition, all GC products have been certified with the Carbon Footprint of Products (CFP) since 2014 and Carbon Footprint Reduction (CFR) label from the Thailand Greenhouse Gas Management Organization (Public Organization) (TGO) under the Ministry of Natural Resources and Environment.

- **SUSTAINABLE ENVIRONMENTAL MANAGEMENT AND EXPANSION TO ALL SECTORS**

With a commitment to conducting its business operation in an environmentally manner for sustainable development and driving its integrated sustainable environmental management throughout

all sectors of society, all GC plants were continuously certified “Eco Factory Certification” from the Federation of Thai Industries since 2015 in order to support and promote Eco Industrial Town. GC was also certified for Green Industry Level 5 which is the highest level from the Ministry of Industry since 2016, demonstrating its commitment to becoming a leader of Green Network. Companies under GC was also continued to be certified for Green Industry.

**In 2019, GC was ranked at the top of the global chemicals sector for sustainability by Dow Jones Sustainability Indices (DJSI). It demonstrates that GC succeeded in operating its business while considering quality, safety, occupational health and environment throughout the value chain. It also shows that GC has been recognized as a leader of the chemical industry and innovation organization with due regard to the society and communities. This will lead to a leading provider of chemistry for better living. GC would further be regarded as a role model in raising sustainability awareness among related parties so that they can operate its business sustainably or apply sustainability practices to their business concretely.**

**GC becomes Industry 4.0 factories certified organization**



**GC becomes Green Industry Level 5 certified organization under Ministry of Industry**

A BRIGHTER  
FUTURE FOR  
**OUR NEXT  
GENERATION**



**FINANCIAL  
EXCELLENCE**

# AUDIT COMMITTEE REPORT

## Dear Shareholders,

PTT Global Chemical Public Company Limited (GC), is a leading chemical business that focusses on fostering quality of life and is committed to achieving sustained growth in business while adhering to Good Corporate Governance and being responsive to all stakeholders. GC has appointed the Audit Committee and the Internal Audit Function to perform the audit duties and encourage the Company to have in place Good Corporate Governance and have sufficient risk management and internal control, comply with legal and regulatory requirements in doing business in line with good corporate practices of the Securities and Exchange Commission and the Stock Exchange of Thailand.

The Audit Committee of the PTT Global Chemical Public Company Limited (GC) is comprised of 3 independent directors who are eminent experts from various backgrounds such as Accounting and Finance, Business Management and Legal, per announcement of the Capital Market Supervisory Board B.E.2551 (2008).

The Audit Committee dispenses their duties in an independent, objectivity and objective manner as prescribed in the Audit Committee Charter and as directed by the GC Board of Directors. In 2019, the Audit Committee supported the operations of the Internal Audit Function by focusing on the development of the Internal Audit Works in building trust and creating long-term added-value to the organization by considering the requirements of the stakeholders holistically, of which the key areas are:

- Supporting the re-organization of the Internal Audit Functions, to achieve agility and readiness for internal and external organization changes that may impact GC.
- Approving the principles and use of the Way of Conduct as a guideline to govern, manage and align the Internal Audit operations of the subsidiaries.
- Advocate the introduction of Information Technology into Internal Audit works to drive the Internal Audit towards working with Robotic Process Automation (RPA) and moving forward with technology.
- Advocate the introduction of Data Analytics as an integral part of developing the Internal Audit works as well as the employment of external Internal Audit experts to share their knowledge and advanced practices in Internal Audit in order to continuously uplift the quality of Internal Audit works and aligned with international standards and best practices in Internal Audit.
- Advocate training and development, and skills enhancement of the internal auditors to achieve professional certification related to Internal Audit works to be well-versed and abreast of current and future changes.

In 2019, nine meetings of the Audit Committee were organized in which the management, the Internal Audit function and other business units participated. Special sessions were also held in private with the financial auditor without the management's presence. Minutes of the meetings recorded questions, observations, and recommendations which were presented to the management and the Board of Directors for acknowledgment and further actions as appropriate. Key achievements of the Audit Committee in 2019 can be summarized as follows:

### 1. Audit of Financial Reports

The Audit Committee reviewed the key financial highlights of the Quarterly Reports, 2019 Fiscal Financial Statements, the Consolidated Financial Reports, the Connected Transactions, and Transactions that may be Conflicts of Interests between business groups, that have been prepared in accordance with Thai Financial

Reporting Standards. The Financial Auditor and management both report that the Financial Reports including the disclosure of notes to the Financial Reports are all in accordance with the financial reporting standards. Thus, the Audit Committee approved the Financial Reports that the Financial Auditor has reviewed and gave unqualified opinions. Additionally, the Audit Committee further recommended that the Financial Auditor prepare themselves for the audit of financial reports in accordance with the new Thai Financial Reporting Standard (TFRS) Number 9 regarding Financial Instruments and Thai Financial Reporting Standard (TFRS) Number 16 regarding Leases that will be in effect as of 1 January 2020, onwards.

Furthermore, the Audit Committee also held a private meeting without the management's presence, to independently discuss the obtaining of information, the review of significant information, the preparation of the Financial Report, the disclosure of information as required by financial reporting standards and to be of useful to those who access the financial report. Discussion was also made on Key Audit Matters discovered from the audit of financial reports, Group Business Audit, Inventory Audit, Inter-personal or Inter-related Businesses Transactions, effects of the new Accounting standard that will be imposed, as well as the independency in performing of duties and the acknowledgment of information from Internal Audit activities, to all of which the financial auditor did not have any significant observations nor were there any suspicious actions.

## **2. Audit of Risk Management**

The Audit Committee acknowledges the Corporate Risk Management Report from the Risk Management Committee as presented to the meeting of the Board of Directors that covered the Corporate Risk, Key Risk Indicator, Performance Risk Management, etc.. Additionally, the Audit Committee also reviewed the formulation of the Corporate Risk Appetite and Corporate Risk Tolerance of the Corporate Risk Management and provided recommendations for the advancement of the Corporate Risk Management works.

## **3. Audit of Internal Control System**

The Audit Committee has reviewed the Internal Control Report that the Internal Audit Functions has reported that covers Operations, Information Technology as well as the assessment performed by using the Assessment Form of the Office of the Securities Exchange Committee and the Stock Exchange of Thailand that was completed by the management and found that the Internal Control was sufficient and adequate for the business operations of GC and is per Financial Auditor's comments as reported in their assessment and no issues nor significant discrepancies were found that could impact the Financial Report.

## **4. Audit of Corporate Governance**

The Audit Committee has performed a review of Corporate Governance from the Whistleblower Report of the Company and subsidiaries and directed the disclosure of complete information per requirements of the Audit Committee. Additionally, the Audit Committee has reviewed the Corporate Self-Assessment Report on Anti-Corruption Measures for accuracy and adequacy, and the Chairman of the Audit Committee

has certified them with his signature and submitted to the Board of Directors for further submission to the CAC: Thailand's Private Sector Collective Action Coalition Against Corruption, as a part of the membership status re-certification that will be due in 2020. Furthermore, the Audit Committee also promoted and supported the subsidiary companies to join Thailand's Private Sector Collective Action Coalition Against Corruption. In 2019, four subsidiary companies announced their intention to join the CAC, and more shall follow in the years to come.

## 5. Governance of Internal Audit Works

The Audit Committee has supervised and overseen the works of the Internal Audit to assure that they are efficient and abreast of the current situation. The Audit Committee also approved of the strategy and targets, Annual Audit Plan, and Internal Audit Reports of the Internal Audit Function. Furthermore, they also provided constructive queries, observations, recommendations, as well as following-up on important corrective issues to enable Good Corporate Governance and increase the efficiency of the Internal Audit works. The Audit Committee supports the uplift of Internal Audit works towards becoming a Trusted Advisor and also the utilization of Data Analytics for use in auditing and application of the Continuous Control Monitoring and Auditing System (CCMS) in auditing as well to screen and continuously monitor irregular items and making corrections to improper transactions immediately as they are discovered. In 2019, the Internal Audit Function carried out additional IT General Control or ITGC audits as well as expanding the scope of the CCMS to cover the "Order to Cash" process.

## 6. Auditing Legal Compliance

The Audit Committee reviewed the business operations of the Company for compliance with laws and regulations on securities and Stock Exchange, requirements of the Stock Exchange of Thailand, as well as other laws related to the Company's business operations through various reports from the Internal Audit Function and insisting on the monitoring of new legislation coming into effect in the future – domestically and overseas in countries where the Company invests. Overall, the Audit Committee is of the opinion that no cases of legal non-compliance have been found that may affect the Company.

## 7. Appointment of Financial Auditor

The Audit Committee annually nominate candidates to be the Company's auditor to the Board of Directors, who then proposes these nominees to the B.E.2562 (2019) Annual General Meeting for appointment and the AGM unanimously approved of the selection of Deloitte Touche Tohmatsu Jaiyos Audit Co., Ltd., to be the B.E.2562 (2019) Auditor for the Company and subsidiaries – except for some subsidiaries in overseas locations.

In consideration of appointing financial auditors, candidates are scrutinized for their qualifications, including their knowledge, capabilities, business auditing experience, proposed auditing guidelines, independence per accounting ethics of the Federation of Accounting Professions and requirements of the Office of the Securities Exchange Committee and the Stock Exchange of Thailand, and appropriate auditing fees.

## 8. Consideration of Connected Transactions or Conflicts of Interest to comply with legal requirements and stipulations of the Stock Exchange

The Audit Committee reviewed and proposed their comments on the matter of connected transactions, with particular focus on issues of possible conflicts of interest to the Company, by adhering to reasonableness, transparency, and the sufficient information disclosure of optimum benefit to the Company. In 2019, no significant connected transactions were found, nor were there any transactions that deviate from contractual conditions that require disclosure per regulations of the Stock Exchange of Thailand. Furthermore, the Audit Committee did not receive any reports of anomalies from the disclosure of connected transactions from the Financial Auditor.

## 9. Other matters appointed by the Board of Directors:

### The Audit Committee's Performance Assessment

The Audit Committee underwent the customary group and individual assessments of its performance in 2019, and assessment results were reported to the Board of Directors for their acknowledgment to support and enhance the Committee's future performance.

### Performance Reports of the Audit Committee

The Audit Committee periodically completed four performance reports to the Board of Directors in 2019.

The Audit Committee has duly performed its duties as appointed by the Board of Directors and as per duties and responsibilities stipulated in the Audit Committee Charter. The Audit Committee has employed their knowledge, experience, and has adhered to the principles of righteousness, justice, prudence, vigilance, transparency and independence in carrying out their duties. The Audit Committee provided constructive queries, observations, and recommendations, all the while with due regard to all stakeholders and their optimal benefit.

The Audit Committee is thus of the opinion that the Company has an accurate and reliable accounting and financial reporting system and that the information disclosure is sufficient and conforms to the generally-accepted accounting best practices. The Company complies with all relevant laws, rules, and regulations in their business operations. It has good corporate governance, good risk management and adequate internal controls for business operations, has a good Internal Audit System, and continuous monitoring of various change variables, to enable the Company to be adequately prepared for any current or future risks.

The Audit Committee received excellent support and collaboration throughout 2019 from the Board of Directors, the management, the Financial Auditor, and all other relevant parties. The Audit Committee would like to thank and express its appreciation to all parties sincerely.

On Behalf of the Audit Committee

(Signed) Apisak Tantivorawang  
**(Mr. Apisak Tantivorawang)**  
Chairman of the Audit Committee

# REPORT OF THE BOARD OF DIRECTORS' ACCOUNTABILITY TO FINANCIAL REPORT

The consolidated financial statements of PTT Global Chemical Public Company Limited and its subsidiaries were prepared in accordance with the Securities Exchange Commission under the Securities and Exchange Act B.E. 2535 and Department of Business Development, issued under the Accounting Act B.E. 2543 Section 11 paragraph 3 in accordance with the Federation of Accounting Professions' Thai Financial Reporting Standards.

The Company's Board of Directors is responsible for financial report of PTT Global Chemical Public Company Limited and its subsidiaries in providing reasonable assurance that the financial report present fairly financial position, financial performance and cash flows. The accounting data is sufficiently and accurately recorded to preserve the Company's assets and prevent fraud and irregularity. The financial report has been prepared accordingly to appropriate accounting policy and consistency practices, and in accordance with Thai Financial Reporting Standards. Significant information has been sufficiently disclosed in notes to financial statements, where the auditor expressed an opinion on the financial statements of PTT Global Chemical Public Company Limited and its subsidiaries in the auditor's report.

(Signed) Piyasvasti Amranand  
**(Mr. Piyasvasti Amranand)**  
Chairman

(Signed) Kongkrapan Intarajang  
**(Mr. Kongkrapan Intarajang)**  
Chief Executive Officer

# REPORT OF THE INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS

## To the Shareholders and Board of Directors

### PTT Global Chemical Public Company Limited

#### Opinion

We have audited the consolidated financial statements of PTT Global Chemical Public Company Limited and its subsidiaries (the “Group”) and the separate financial statements of PTT Global Chemical Public Company Limited (the “Company”) which comprise the consolidated and separate statements of financial position as at December 31, 2019, and the related consolidated and separate statements of profit or loss, comprehensive income, changes in shareholders’ equity and cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated and separate financial statements present fairly, in all material respects, the financial position of PTT Global Chemical Public Company Limited and its subsidiaries and of PTT Global Chemical Public Company Limited as at December 31, 2019, and financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards (“TFRSs”).

#### Basis for Opinion

We conducted our audit in accordance with Thai Standards on Auditing (“TSAs”). Our responsibilities under those standards are further described in the Auditor’s Responsibilities for the Audit of the Consolidated and Separate Financial Statements section of our report. We are independent of the Group in accordance with the Federation of Accounting Professions’ Code of Ethics for Professional Accountants together with the ethical requirements that are relevant to the audit of the consolidated and separate financial statements, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

#### Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated and separate financial statements of the current period. These matters were addressed in the context of our audit of the consolidated and separate financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

| Key Audit Matter  | Audit Responses   |
|---|---|
| <p><b>The measurement of inventories valuation</b></p> <p>Inventories of the Group are significant balance to the consolidated and separate financial statements. The raw material and finished goods are commodities that contain intense price volatility. This volatility may lead to valuation of inventories at the end of reporting period as inventories are measured at the lower of cost or net realizable value.</p> <p>The accounting policy of inventories valuation of the Group and the detail of inventories are disclosed in notes to the financial statements no. 3.7 and 9, respectively.</p> | <p>Key audit procedures included:</p> <ul style="list-style-type: none"> <li>• Gaining understanding and performing test of design and implementation as well as operating effectiveness of the relevant controls over inventories valuation measurement process.</li> <li>• Assessing the appropriateness of the methodology used to calculate the net realizable value of inventories at the reporting period, considering the reasonableness of the market price used by reference to commodity prices, and testing the accuracy of the calculation.</li> <li>• If the net realizable value is lower than the cost, considering to propose the adjustment of allowance for diminution in value of inventories in the consolidated and separate financial statements.</li> <li>• Assessing the adequate disclosure in relation to the estimation of allowance for diminution in value of inventories in notes to the financial statements.</li> </ul> |

| Key Audit Matter  | Audit Responses   |
|---|---|
| <p><b>The existence of raw materials</b></p> <p>During the second quarter of 2018, a subsidiary found the quantity of raw materials recorded in the system higher than the actual quantity stored at the suppliers' facilities. In consequence, the Group recognized expenses from raw materials derogation amounting to Baht 2,004 million for the year ended December 31, 2018 (owners of the parent net of tax amounting to Baht 1,261 million). The existence of raw materials is considered to be a key audit matter as such raw materials are stored at the suppliers' facilities where the place are outside of the subsidiary's location.</p> <p>The details are disclosed in note to the financial statements no. 4.</p> | <p>Key audit procedures included:</p> <ul style="list-style-type: none"> <li>• Gaining understanding and performing test of design and implementation of the relevant controls over raw material management process.</li> <li>• Enquiring with management on procurement of raw materials, issuing and storage of raw materials process.</li> <li>• Reading the factual investigation report regarding the procurement and distribution process of raw materials, the fraud investigation report, the internal control report for the process on procurement of raw materials and the related minutes of meeting of the board of directors.</li> <li>• Attending the physical raw material count observation, sending the raw material confirmation letter for raw materials at the storage facilities of the suppliers and reconciling confirmations with the accounting records.</li> </ul> |

### **Other Matter**

The consolidated financial statements of PTT Global Chemical Public Company Limited and its subsidiaries and the separate financial statements of PTT Global Chemical Public Company Limited for the year ended December 31, 2018 (before the reclassifications), presented herein as comparative information, were audited by another auditor, whose report thereon dated February 18, 2019 expressed an unmodified opinion on those statements.

### **Other Information**

Management is responsible for the other information. The other information comprises the information included in the annual report, but does not include the consolidated and separate financial statements and our auditor's report thereon.

Our opinion on the consolidated and separate financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated and separate financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the consolidated and separate financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

### **Responsibilities of Management and Those Charged with Governance for the Consolidated and Separate Financial Statements**

Management is responsible for the preparation and fair presentation of the consolidated and separate financial statements in accordance with TFRSs, and for such internal control as management determines is necessary to enable the preparation of consolidated and separate financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated and separate financial statements, management is responsible for assessing the Group's and the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

### **Auditor's Responsibilities for the Audit of the Consolidated and Separate Financial Statements**

Our objectives are to obtain reasonable assurance about whether the consolidated and separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with TSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated and separate financial statements.

As part of an audit in accordance with TSAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated and separate financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's and the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group and the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated and separate financial statements, including the disclosures, and whether the consolidated and separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated and separate financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.



**(Mongkol Somphol)**

Certified Public Accountant (Thailand)

Registration No. 8444

Deloitte Touche Tohmatsu Jaiyos Audit Co., Ltd.

Bangkok

February 17, 2020

# **FINANCIAL STATEMENTS**

# STATEMENTS OF FINANCIAL POSITION

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

AS AT DECEMBER 31, 2019

Unit : Baht

|  | Notes | Consolidated<br>financial statements |                        | Separate<br>financial statements |                        |
|--|-------|--------------------------------------|------------------------|----------------------------------|------------------------|
|  |       | 2019                                 | 2018                   | 2019                             | 2018                   |
| <b>ASSETS</b>  |       |                                      |                        |                                  |                        |
| <b>CURRENT ASSETS</b>                                    |       |                                      |                        |                                  |                        |
| Cash and cash equivalents                                | 6     | 18,840,303,824                       | 36,744,040,127         | 12,397,417,335                   | 27,141,980,258         |
| Temporary investments                                    | 13    | 6,719,876,693                        | 16,817,920,867         | 4,045,408,193                    | 10,011,153,767         |
| Trade receivables  | 7     | 34,156,903,430                       | 41,990,677,039         | 28,118,814,466                   | 34,832,891,357         |
| Other receivables  | 8     | 3,149,134,830                        | 3,624,987,347          | 2,314,454,135                    | 2,776,875,934          |
| Short-term loans to related parties                      | 27    | 1,122,984,334                        | 242,136,000            | 1,552,287,222                    | 848,799,510            |
| Current portion of long-term loans<br>to related parties | 27    | 1,558,404,698                        | -                      | 1,558,404,698                    | -                      |
| Current portion of long-term loans<br>to other parties   |       | -                                    | 665,367,833            | -                                | -                      |
| Inventories  | 9     | 36,252,319,422                       | 39,365,633,468         | 26,380,866,034                   | 29,105,102,076         |
| Receivable from oil fuel fund                            |       | 151,284,595                          | 819,672,983            | 151,284,595                      | 819,672,983            |
| Value-added tax receivable                               |       | 1,719,267,430                        | 2,193,555,033          | 492,422,615                      | 627,187,239            |
| Derivatives  | 38    | 27,747,308                           | 340,523,311            | 13,789,747                       | 339,827,672            |
| Other current assets                                     |       | 796,042,409                          | 1,505,500,947          | 526,201,836                      | 1,204,055,609          |
| Total Current Assets                                     |       | 104,494,268,973                      | 144,310,014,955        | 77,551,350,876                   | 107,707,546,405        |
| <b>NON-CURRENT ASSETS</b>                                |       |                                      |                        |                                  |                        |
| Investments in subsidiaries                              | 10    | -                                    | -                      | 72,551,269,640                   | 67,782,813,121         |
| Investments in joint ventures                            | 11    | 32,444,000,414                       | 30,757,746,490         | 15,372,927,810                   | 15,372,927,810         |
| Investments in associates                                | 12    | 29,829,463,974                       | 15,450,398,109         | 26,812,494,981                   | 9,792,804,660          |
| Other long-term investments                              | 13    | 2,910,779,525                        | 7,146,165,871          | 2,340,894,476                    | 6,806,191,293          |
| Long-term loans to related parties                       | 27    | 716,754,888                          | 3,551,328,000          | 716,754,888                      | 3,551,328,000          |
| Investment properties                                    | 14    | 6,497,895,823                        | 6,499,955,407          | 1,740,783,392                    | 1,740,783,392          |
| Property, plant and equipment                            | 15    | 264,563,608,523                      | 250,330,366,033        | 181,731,952,350                  | 174,490,838,137        |
| Land leasehold rights                                    | 16    | 190,505,835                          | 234,181,354            | 184,162,171                      | 234,181,354            |
| Goodwill   | 17    | 931,328,672                          | 931,328,672            | -                                | -                      |
| Intangible assets  | 18    | 8,220,730,578                        | 8,055,084,199          | 5,809,170,180                    | 5,603,820,101          |
| Deferred tax assets                                      | 19    | 1,073,520,214                        | 1,171,330,392          | -                                | -                      |
| Derivatives  | 38    | -                                    | 122,469,564            | -                                | 122,469,564            |
| Other non-current assets                                 |       | 641,532,387                          | 694,978,299            | 278,035,974                      | 408,721,068            |
| Total Non-current Assets                                 |       | 348,020,120,833                      | 324,945,332,390        | 307,538,445,862                  | 285,906,878,500        |
| <b>TOTAL ASSETS</b>                                      |       | <b>452,514,389,806</b>               | <b>469,255,347,345</b> | <b>385,089,796,738</b>           | <b>393,614,424,905</b> |

Notes to the financial statements form an integral part of these statements

# STATEMENTS OF FINANCIAL POSITION (CONTINUED)

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

AS AT DECEMBER 31, 2019

Unit : Baht

|   | Notes  | Consolidated<br>financial statements |                        | Separate<br>financial statements |                        |
|---|--------|--------------------------------------|------------------------|----------------------------------|------------------------|
|   |        | 2019                                 | 2018                   | 2019                             | 2018                   |
| <b>LIABILITIES AND SHAREHOLDERS' EQUITY</b> |        |                                      |                        |                                  |                        |
| <b>CURRENT LIABILITIES</b>                  |        |                                      |                        |                                  |                        |
| Short-term borrowings from                  |        |                                      |                        |                                  |                        |
| financial institutions                      | 20     | 2,020,952,712                        | 3,343,116,790          | -                                | -                      |
| Trade payables                              | 21     | 25,479,128,189                       | 34,515,941,639         | 19,920,282,931                   | 27,459,926,202         |
| Other payables                              | 22     | 14,092,519,798                       | 15,867,926,247         | 8,443,466,497                    | 11,712,990,634         |
| Payables to contractors                     |        | 2,717,169,778                        | 9,127,020,070          | 2,778,691,141                    | 5,191,027,808          |
| Current portion of long-term borrowings     |        |                                      |                        |                                  |                        |
| from financial institutions                 | 20     | 8,108,139,389                        | 7,046,779,688          | 7,077,794,084                    | 4,305,696,000          |
| Current portion of long-term borrowings     |        |                                      |                        |                                  |                        |
| from other parties                          | 20     | 40,599,692                           | 927,744,204            | -                                | -                      |
| Current portion of debentures               | 20     | -                                    | 1,942,000,000          | -                                | 1,942,000,000          |
| Short-term borrowings from related parties  | 20, 27 | -                                    | -                      | 3,040,910,019                    | 1,930,884,839          |
| Income tax payable                          |        | 125,041,110                          | 665,994,033            | -                                | 473,886,450            |
| Current provisions                          |        | 97,106,390                           | 65,762,666             | -                                | -                      |
| Derivatives                                 | 38     | 319,631,248                          | 310,771,095            | 68,847,127                       | 2,871,113              |
| Other current liabilities                   |        | 32,849,201                           | 45,197,792             | -                                | -                      |
| Total Current Liabilities                   |        | <u>53,033,137,507</u>                | <u>73,858,254,224</u>  | <u>41,329,991,799</u>            | <u>53,019,283,046</u>  |
| <b>NON-CURRENT LIABILITIES</b>              |        |                                      |                        |                                  |                        |
| Long-term borrowings from                   |        |                                      |                        |                                  |                        |
| financial institutions                      | 20     | 26,517,395,423                       | 30,915,455,205         | 2,995,267,683                    | 10,113,474,702         |
| Long-term borrowing from a related party    | 20, 27 | -                                    | -                      | 14,991,042,331                   | 16,105,004,749         |
| Long-term borrowings from other parties     | 20     | 268,922,401                          | 323,961,074            | -                                | -                      |
| Debentures                                  | 20     | 70,131,423,772                       | 52,408,085,202         | 55,221,250,537                   | 36,379,430,264         |
| Deferred tax liabilities                    | 19     | 2,465,252,662                        | 2,746,711,153          | 1,591,933,250                    | 1,788,503,320          |
| Provisions for employee benefits            | 23     | 5,558,472,038                        | 4,283,089,819          | 4,014,311,572                    | 3,015,279,364          |
| Other non-current provisions                |        | 420,019,035                          | 494,903,862            | -                                | -                      |
| Derivatives                                 | 38     | 12,423,815                           | 146,534,450            | 12,423,815                       | 20,581,971             |
| Other non-current liabilities               |        | 511,994,977                          | 596,144,422            | 359,936,366                      | 336,086,298            |
| Total Non-current Liabilities               |        | <u>105,885,904,123</u>               | <u>91,914,885,187</u>  | <u>79,186,165,554</u>            | <u>67,758,360,668</u>  |
| <b>TOTAL LIABILITIES</b>                    |        | <u>158,919,041,630</u>               | <u>165,773,139,411</u> | <u>120,516,157,353</u>           | <u>120,777,643,714</u> |

Notes to the financial statements form an integral part of these statements

# STATEMENTS OF FINANCIAL POSITION (CONTINUED)

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

AS AT DECEMBER 31, 2019

Unit : Baht

|  | Notes  | Consolidated<br>financial statements |                        | Separate<br>financial statements |                        |
|--|--------|--------------------------------------|------------------------|----------------------------------|------------------------|
|  |        | 2019                                 | 2018                   | 2019                             | 2018                   |
| <b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>  |        |                                      |                        |                                  |                        |
| (CONTINUED)                                  |        |                                      |                        |                                  |                        |
| SHAREHOLDERS' EQUITY                         |        |                                      |                        |                                  |                        |
| Share capital                                | 24     |                                      |                        |                                  |                        |
| Authorized share capital                     |        |                                      |                        |                                  |                        |
| 4,508,849,117 ordinary shares of             |        |                                      |                        |                                  |                        |
| Baht 10 each                                 |        | 45,088,491,170                       | 45,088,491,170         | 45,088,491,170                   | 45,088,491,170         |
| Issued and paid-up share capital             |        |                                      |                        |                                  |                        |
| 4,508,849,117 ordinary shares of             |        |                                      |                        |                                  |                        |
| Baht 10 each                                 |        | 45,088,491,170                       | 45,088,491,170         | 45,088,491,170                   | 45,088,491,170         |
| Treasury stock                               | 26     | (1,187,603,325)                      | -                      | (1,187,603,325)                  | -                      |
| Premium on ordinary shares                   | 25     | 36,936,829,684                       | 36,936,829,684         | 36,936,829,684                   | 36,936,829,684         |
| Premium on treasury stock                    | 25     | 1,386,740,109                        | 1,386,740,109          | 1,386,740,109                    | 1,386,740,109          |
| Difference arising from business combination |        |                                      |                        |                                  |                        |
| under common control                         | 25     | 1,690,706,891                        | 1,690,706,891          | 77,453,518                       | 77,453,518             |
| Difference arising from the change in        |        |                                      |                        |                                  |                        |
| the ownership interest in an investment      | 12     | (3,407,679,334)                      | -                      | -                                | -                      |
| Retained earnings                            |        |                                      |                        |                                  |                        |
| Appropriated                                 |        |                                      |                        |                                  |                        |
| Legal reserve                                | 25     | 4,512,930,269                        | 4,512,930,269          | 4,512,930,269                    | 4,512,930,269          |
| Loan repayment reserve                       |        | 807,802,564                          | 807,802,564            | 807,802,564                      | 807,802,564            |
| Projects expansion reserve                   |        | 12,446,994,126                       | 12,446,994,126         | 12,446,994,126                   | 12,446,994,126         |
| Treasury stock reserve                       | 25, 26 | 1,187,603,325                        | -                      | 1,187,603,325                    | -                      |
| Unappropriated                               |        | 187,854,749,537                      | 192,959,190,549        | 163,299,727,947                  | 171,114,157,807        |
| Other components of shareholder's equity     |        | (1,487,395,383)                      | 216,077,207            | 16,669,998                       | 465,381,944            |
| Total attributions to owners of the parent   |        | 285,830,169,633                      | 296,045,762,569        | 264,573,639,385                  | 272,836,781,191        |
| Non-controlling interests                    |        | 7,765,178,543                        | 7,436,445,365          | -                                | -                      |
| <b>TOTAL SHAREHOLDERS' EQUITY</b>            |        | <b>293,595,348,176</b>               | <b>303,482,207,934</b> | <b>264,573,639,385</b>           | <b>272,836,781,191</b> |
| <b>TOTAL LIABILITIES AND</b>                 |        |                                      |                        |                                  |                        |
| <b>SHAREHOLDERS' EQUITY</b>                  |        | <b>452,514,389,806</b>               | <b>469,255,347,345</b> | <b>385,089,796,738</b>           | <b>393,614,424,905</b> |

Notes to the financial statements form an integral part of these statements

# STATEMENTS OF PROFIT OR LOSS

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Unit : Baht

|  | Notes | Consolidated<br>financial statements |                       | Separate<br>financial statements |                       |
|--|-------|--------------------------------------|-----------------------|----------------------------------|-----------------------|
|  |       | 2019                                 | 2018                  | 2019                             | 2018                  |
| Revenues from sale of goods<br>and rendering of services |       | 412,810,235,767                      | 518,654,742,421       | 351,547,082,842                  | 456,714,288,455       |
| Cost of sale of goods and<br>rendering of services       |       | (390,619,277,638)                    | (466,025,790,273)     | (339,068,290,381)                | (418,114,455,761)     |
| Gross profit   |       | 22,190,958,129                       | 52,628,952,148        | 12,478,792,461                   | 38,599,832,694        |
| Investment income  |       | 1,000,821,422                        | 1,577,303,108         | 5,195,501,283                    | 6,284,765,652         |
| Other income   |       | 1,317,855,026                        | 1,117,147,616         | 1,916,888,618                    | 2,049,607,521         |
| Gain on bargain purchases                                | 5     | 31,482,857                           | 1,354,901,971         | -                                | -                     |
| Selling and distribution expenses                        | 29    | (3,931,395,732)                      | (3,405,829,379)       | (1,962,918,351)                  | (1,957,010,454)       |
| Administrative expenses                                  | 30    | (12,537,256,860)                     | (11,448,544,361)      | (8,741,700,962)                  | (8,235,597,296)       |
| Reversal of (expenses from)<br>raw materials derogation  | 4     | 232,483,965                          | (2,003,572,583)       | -                                | -                     |
| Loss on impairment of assets                             |       | -                                    | -                     | (63,052,760)                     | (729,567,425)         |
| Net derivative gain                                      |       | 1,498,820,135                        | 122,019,087           | 1,499,404,054                    | 65,021,626            |
| Net gain (loss) on foreign exchange rate                 |       | 1,755,535,325                        | 13,073,207            | 1,523,281,288                    | (200,854,878)         |
| Finance costs  | 33    | (3,119,419,221)                      | (3,593,353,668)       | (2,618,771,176)                  | (2,927,274,215)       |
| Share of profit of investments<br>in joint ventures      | 11    | 2,625,714,096                        | 5,208,691,184         | -                                | -                     |
| Share of profit of investments<br>in associates          | 12    | 1,933,059,453                        | 1,686,140,092         | -                                | -                     |
| Profit before income tax expense                         |       | 12,998,658,595                       | 43,256,928,422        | 9,227,424,455                    | 32,948,923,225        |
| Income tax expense                                       | 34    | (649,361,925)                        | (2,985,954,248)       | (74,349,225)                     | (3,228,105,397)       |
| <b>PROFIT FOR THE YEAR</b>                               |       | <b>12,349,296,670</b>                | <b>40,270,974,174</b> | <b>9,153,075,230</b>             | <b>29,720,817,828</b> |
| <b>PROFIT ATTRIBUTABLE TO</b>                            |       |                                      |                       |                                  |                       |
| Owners of the parent                                     |       | 11,682,079,566                       | 40,069,490,129        | 9,153,075,230                    | 29,720,817,828        |
| Non-controlling interests                                |       | 667,217,104                          | 201,484,045           | -                                | -                     |
|  |       | <b>12,349,296,670</b>                | <b>40,270,974,174</b> | <b>9,153,075,230</b>             | <b>29,720,817,828</b> |
| <b>BASIC EARNINGS PER SHARE</b>                          | 36    | 2.59                                 | 8.89                  | 2.03                             | 6.59                  |

Notes to the financial statements form an integral part of these statements

# STATEMENTS OF COMPREHENSIVE INCOME

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

|   | Unit : Baht           |                       |                      |                       |
|---|-----------------------|-----------------------|----------------------|-----------------------|
|   | Consolidated          |                       | Separate             |                       |
|   | financial statements  |                       | financial statements |                       |
| Notes   | 2019                  | 2018                  | 2019                 | 2018                  |
| <b>PROFIT FOR THE YEAR</b>  | 12,349,296,670        | 40,270,974,174        | 9,153,075,230        | 29,720,817,828        |
| <b>OTHER COMPREHENSIVE INCOME (LOSS)</b>                            |                       |                       |                      |                       |
| Items that will be reclassified subsequently to profit or loss      |                       |                       |                      |                       |
| Exchange differences on translating financial statements            | (675,835,696)         | (138,916,708)         | -                    | -                     |
| Gain (loss) on remeasurement investments held as available-for-sale | 33,877,577            | (90,402,521)          | 33,877,577           | (90,402,521)          |
| Gain (loss) on cash flow hedges                                     | (262,701,249)         | 807,423,355           | (482,589,523)        | 658,371,137           |
| Share of other comprehensive loss of joint ventures                 | 11 (446,306,794)      | (399,462,671)         | -                    | -                     |
| Share of other comprehensive income (loss) of associates            | 12 (383,170,024)      | 13,701,315            | -                    | -                     |
| Items that will not be reclassified subsequently to profit or loss  |                       |                       |                      |                       |
| Gain (loss) on remeasurements of defined benefit plans              | (54,831,636)          | 20,353,699            | -                    | -                     |
| Share of other comprehensive income (loss) of joint ventures        | 11 (85,407,851)       | 25,893,879            | -                    | -                     |
| Share of other comprehensive loss of associates                     | 12 (1,911,962)        | (8,585,329)           | -                    | -                     |
| <b>OTHER COMPREHENSIVE INCOME (LOSS) FOR THE YEAR, NET OF TAX</b>   | (1,876,287,635)       | 230,005,019           | (448,711,946)        | 567,968,616           |
| <b>TOTAL COMPREHENSIVE INCOME FOR THE YEAR, NET OF TAX</b>          | <u>10,473,009,035</u> | <u>40,500,979,193</u> | <u>8,704,363,284</u> | <u>30,288,786,444</u> |
| <b>TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO</b>                   |                       |                       |                      |                       |
| Owners of the parent  | 9,840,397,339         | 40,337,826,087        | 8,704,363,284        | 30,288,786,444        |
| Non-controlling interests   | 632,611,696           | 163,153,106           | -                    | -                     |
|   | <u>10,473,009,035</u> | <u>40,500,979,193</u> | <u>8,704,363,284</u> | <u>30,288,786,444</u> |

Notes to the financial statements form an integral part of these statements

# STATEMENT OF CHANGES IN SHAREHOLDERS' EQUITY

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

|   | Notes | Retained earnings                |                        |                            |                           |   |   |                      |                         |                            |
|---|-------|----------------------------------|------------------------|----------------------------|---------------------------|---|---|----------------------|-------------------------|----------------------------|
|   |       | Issued and paid-up share capital | Treasury stock         | Premium on ordinary shares | Premium on treasury stock | Difference arising from business combination under common control | Difference arising from the change in the ownership interest in an investment | Legal reserve        | Loans repayment reserve | Projects expansion reserve |
| <b>BALANCE AS AT JANUARY 1, 2018</b>  |       | 45,088,491,170                   | -                      | 36,936,829,684             | 1,386,740,109             | 1,690,706,891   | -   | 4,512,930,269        | 807,802,564             | 12,446,994,126             |
| Dividends paid  | 37    | -                                | -                      | -                          | -                         | -   | -   | -                    | -                       | -                          |
| Acquisition of businesses   |       | -                                | -                      | -                          | -                         | -   | -   | -                    | -                       | -                          |
| Increase investment in a subsidiary   |       | -                                | -                      | -                          | -                         | -   | -   | -                    | -                       | -                          |
| Profit for the year   |       | -                                | -                      | -                          | -                         | -   | -   | -                    | -                       | -                          |
| Other comprehensive income (loss)   |       | -                                | -                      | -                          | -                         | -   | -   | -                    | -                       | -                          |
| <b>BALANCE AS AT DECEMBER 31, 2018</b>  |       | <u>45,088,491,170</u>            | <u>-</u>               | <u>36,936,829,684</u>      | <u>1,386,740,109</u>      | <u>1,690,706,891</u>  | <u>-</u>  | <u>4,512,930,269</u> | <u>807,802,564</u>      | <u>12,446,994,126</u>      |
| <b>BALANCE AS AT JANUARY 1, 2019</b>  |       | 45,088,491,170                   | -                      | 36,936,829,684             | 1,386,740,109             | 1,690,706,891   | -   | 4,512,930,269        | 807,802,564             | 12,446,994,126             |
| Treasury stock  | 26    | -                                | (1,187,603,325)        | -                          | -                         | -   | -   | -                    | -                       | -                          |
| Dividends paid  | 37    | -                                | -                      | -                          | -                         | -   | -   | -                    | -                       | -                          |
| Increase investment in a subsidiary   |       | -                                | -                      | -                          | -                         | -   | -   | -                    | -                       | -                          |
| Difference arising from the change in the ownership interest in an investment | 12    | -                                | -                      | -                          | -                         | -   | (3,407,679,334)   | -                    | -                       | -                          |
| Interests in equity of associate  |       | -                                | -                      | -                          | -                         | -   | -   | -                    | -                       | -                          |
| Profit for the year   |       | -                                | -                      | -                          | -                         | -   | -   | -                    | -                       | -                          |
| Other comprehensive income (loss)   |       | -                                | -                      | -                          | -                         | -   | -   | -                    | -                       | -                          |
| <b>BALANCE AS AT DECEMBER 31, 2019</b>  |       | <u>45,088,491,170</u>            | <u>(1,187,603,325)</u> | <u>36,936,829,684</u>      | <u>1,386,740,109</u>      | <u>1,690,706,891</u>  | <u>(3,407,679,334)</u>  | <u>4,512,930,269</u> | <u>807,802,564</u>      | <u>12,446,994,126</u>      |

Notes to the financial statements form an integral part of these statements

## Consolidated financial statements

|                |                  | Other components of shareholders' equity |                    |                |                  |                  |                 |                  |               |                  |
|----------------|------------------|--|--------------------|----------------|------------------|------------------|-----------------|------------------|---------------|------------------|
| Treasury stock |                  | Exchange                                 | Gain (loss) on     |                | Share of other   | Share of other   | Total other     | Total            | Non-          | Total            |
| reserve        | Unappropriated   | differences on                           | remeasurement      | Gain (loss) on | comprehensive    | comprehensive    | components of   | attributions to  | controlling   | shareholders'    |
|                |                  | translating                              | investments        | cash flow      | income (loss) of | income (loss) of | shareholders'   | owners of        | interests     | equity           |
|                |                  | financial                                | held as            | hedges         | joint ventures   | associates       | equity          | the parent       |               |                  |
|                |                  | statements                               | available-for-sale |                |                  |                  |                 |                  |               |                  |
| -              | 172,015,687,267  | (383,885,257)                            | 142,086,228        | (789,930,586)  | 1,007,174,278    | 8,090,365        | (16,464,972)    | 274,869,717,108  | 5,394,380,348 | 280,264,097,456  |
| -              | (19,161,780,626) | -  | -                  | -              | -                | -                | -               | (19,161,780,626) | (577,303,184) | (19,739,083,810) |
| -              | -                | -  | -                  | -              | -                | -                | -               | -                | 2,363,403,595 | 2,363,403,595    |
| -              | -                | -  | -                  | -              | -                | -                | -               | -                | 92,811,500    | 92,811,500       |
| -              | 40,069,490,129   | -  | -                  | -              | -                | -                | -               | 40,069,490,129   | 201,484,045   | 40,270,974,174   |
| -              | 35,793,779       | (96,351,209)                             | (90,402,521)       | 805,057,265    | (399,462,671)    | 13,701,315       | 232,542,179     | 268,335,958      | (38,330,939)  | 230,005,019      |
| -              | 192,959,190,549  | (480,236,466)                            | 51,683,707         | 15,126,679     | 607,711,607      | 21,791,680       | 216,077,207     | 296,045,762,569  | 7,436,445,365 | 303,482,207,934  |
| -              | 192,959,190,549  | (480,236,466)                            | 51,683,707         | 15,126,679     | 607,711,607      | 21,791,680       | 216,077,207     | 296,045,762,569  | 7,436,445,365 | 303,482,207,934  |
| 1,187,603,325  | (1,187,603,325)  | -  | -                  | -              | -                | -                | -               | (1,187,603,325)  | -             | (1,187,603,325)  |
| -              | (15,779,901,765) | -  | -                  | -              | -                | -                | -               | (15,779,901,765) | (556,380,393) | (16,336,282,158) |
| -              | -                | -  | -                  | -              | -                | -                | -               | -                | 252,501,875   | 252,501,875      |
| -              | -                | -  | -                  | -              | -                | -                | -               | (3,407,679,334)  | -             | (3,407,679,334)  |
| -              | 319,194,149      | -  | -                  | -              | -                | -                | -               | 319,194,149      | -             | 319,194,149      |
| -              | 11,682,079,566   | -  | -                  | -              | -                | -                | -               | 11,682,079,566   | 667,217,104   | 12,349,296,670   |
| -              | (138,209,637)    | (644,186,753)                            | 33,877,577         | (263,686,596)  | (446,306,794)    | (383,170,024)    | (1,703,472,590) | (1,841,682,227)  | (34,605,408)  | (1,876,287,635)  |
| 1,187,603,325  | 187,854,749,537  | (1,124,423,219)                          | 85,561,284         | (248,559,917)  | 161,404,813      | (361,378,344)    | (1,487,395,383) | 285,830,169,633  | 7,765,178,543 | 293,595,348,176  |

# STATEMENT OF CHANGES IN SHAREHOLDERS' EQUITY

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

|  |       | Issued and<br>paid-up share<br>capital | Treasury stock         | Premium<br>on ordinary<br>shares | Premium<br>on treasury<br>stock | Difference<br>arising from<br>business<br>combination under<br>common control | Legal<br>reserve     |
|--|-------|--|------------------------|----------------------------------|---------------------------------|---|----------------------|
|  | Notes |  |                        |                                  |                                 |   |                      |
| <b>BALANCE AS AT JANUARY 1, 2018</b>   |       | 45,088,491,170                         | -                      | 36,936,829,684                   | 1,386,740,109                   | 77,453,518  | 4,512,930,269        |
| Dividends paid                         | 37    | -                                      | -                      | -                                | -                               | -   | -                    |
| Profit for the year                    |       | -                                      | -                      | -                                | -                               | -   | -                    |
| Other comprehensive income (loss)      |       | -                                      | -                      | -                                | -                               | -   | -                    |
| <b>BALANCE AS AT DECEMBER 31, 2018</b> |       | <u>45,088,491,170</u>                  | <u>-</u>               | <u>36,936,829,684</u>            | <u>1,386,740,109</u>            | <u>77,453,518</u>   | <u>4,512,930,269</u> |
| <b>BALANCE AS AT JANUARY 1, 2019</b>   |       | 45,088,491,170                         | -                      | 36,936,829,684                   | 1,386,740,109                   | 77,453,518  | 4,512,930,269        |
| Treasury stock                         | 26    | -                                      | (1,187,603,325)        | -                                | -                               | -   | -                    |
| Dividends paid                         | 37    | -                                      | -                      | -                                | -                               | -   | -                    |
| Profit for the year                    |       | -                                      | -                      | -                                | -                               | -   | -                    |
| Other comprehensive income (loss)      |       | -                                      | -                      | -                                | -                               | -   | -                    |
| <b>BALANCE AS AT DECEMBER 31, 2019</b> |       | <u>45,088,491,170</u>                  | <u>(1,187,603,325)</u> | <u>36,936,829,684</u>            | <u>1,386,740,109</u>            | <u>77,453,518</u>   | <u>4,512,930,269</u> |

Notes to the financial statements form an integral part of these statements

Unit : Baht

## Separate financial statements

| Retained earnings             |                                  |                           | Other components of shareholders' equity |   |                                       |   |                                  |
|-------------------------------|----------------------------------|---------------------------|--|---|---------------------------------------|---|----------------------------------|
| Loans<br>repayment<br>reserve | Projects<br>expansion<br>reserve | Treasury stock<br>reserve | Unappropriated                           | Gain (loss) on<br>remeasurement<br>investments<br>held as<br>available-for-sale | Gain (loss) on<br>cash flow<br>hedges | Total other<br>components of<br>shareholders'<br>equity | Total<br>shareholders'<br>equity |
|                               |                                  |                           |  |   |                                       |   |                                  |
| 807,802,564                   | 12,446,994,126                   | -                         | 160,555,120,605                          | 142,086,228   | (244,672,900)                         | (102,586,672)   | 261,709,775,373                  |
| -                             | -                                | -                         | (19,161,780,626)                         | -   | -                                     | -   | (19,161,780,626)                 |
| -                             | -                                | -                         | 29,720,817,828                           | -   | -                                     | -   | 29,720,817,828                   |
| -                             | -                                | -                         | -  | (90,402,521)  | 658,371,137                           | 567,968,616   | 567,968,616                      |
| <u>807,802,564</u>            | <u>12,446,994,126</u>            | <u>-</u>                  | <u>171,114,157,807</u>                   | <u>51,683,707</u>   | <u>413,698,237</u>                    | <u>465,381,944</u>                                      | <u>272,836,781,191</u>           |
| 807,802,564                   | 12,446,994,126                   | -                         | 171,114,157,807                          | 51,683,707  | 413,698,237                           | 465,381,944   | 272,836,781,191                  |
| -                             | -                                | 1,187,603,325             | (1,187,603,325)                          | -   | -                                     | -   | (1,187,603,325)                  |
| -                             | -                                | -                         | (15,779,901,765)                         | -   | -                                     | -   | (15,779,901,765)                 |
| -                             | -                                | -                         | 9,153,075,230                            | -   | -                                     | -   | 9,153,075,230                    |
| -                             | -                                | -                         | -  | 33,877,577  | (482,589,523)                         | (448,711,946)   | (448,711,946)                    |
| <u>807,802,564</u>            | <u>12,446,994,126</u>            | <u>1,187,603,325</u>      | <u>163,299,727,947</u>                   | <u>85,561,284</u>   | <u>(68,891,286)</u>                   | <u>16,669,998</u>                                       | <u>264,573,639,385</u>           |

# STATEMENT OF CASH FLOWS

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

|   | Consolidated         |                 | Separate             |                 |
|---|----------------------|-----------------|----------------------|-----------------|
|   | financial statements |                 | financial statements |                 |
|   | 2019                 | 2018            | 2019                 | 2018            |
|   |                      |                 |                      | Unit : Baht     |
| <b>CASH FLOWS FROM OPERATING ACTIVITIES</b>                               |                      |                 |                      |                 |
| Profit for the year   | 12,349,296,670       | 40,270,974,174  | 9,153,075,230        | 29,720,817,828  |
| Adjustments for:  |                      |                 |                      |                 |
| Income tax expense  | 649,361,925          | 2,985,954,248   | 74,349,225           | 3,228,105,397   |
| Depreciation and amortization   | 19,197,797,105       | 19,054,766,596  | 13,366,391,225       | 13,926,079,334  |
| Investment income   | (1,000,821,422)      | (1,577,303,108) | (5,195,501,283)      | (6,284,765,652) |
| Gain on settlement of borrowings  | (211,556,237)        | -               | -                    | -               |
| Loss from capital distribution of subsidiaries                            | -                    | -               | 69,799               | -               |
| Loss from sale of investment in an associate                              | 13,115,757           | -               | -                    | -               |
| Finance costs   | 3,119,419,221        | 3,593,353,668   | 2,618,771,176        | 2,927,274,215   |
| Unrealised (gain) loss on derivatives                                     | (54,827,103)         | 136,879,945     | (19,990,128)         | 118,341,564     |
| Gain on foreign exchange rates  | (2,518,930,371)      | (334,981,690)   | (2,279,982,317)      | (281,407,352)   |
| Bad debt and doubtful debt expenses                                       | 172,882,726          | 11,218,974      | 159,994,458          | -               |
| (Reversal of) loss on obsolete inventories                                | (83,122,717)         | 34,558,967      | (50,921,726)         | 5,046,175       |
| Loss from written-off of assets   | 52,766,502           | 5,813,992       | 69,384,731           | 8,018,850       |
| (Reversal of) loss on inventories devaluation                             | (1,060,886,068)      | 1,346,625,546   | (1,089,977,606)      | 1,330,081,525   |
| (Reversal of) expenses from raw materials derogation                      | (232,483,965)        | 2,003,572,583   | -                    | -               |
| Loss on impairment of assets  | -                    | -               | 63,052,760           | 729,567,425     |
| (Gain) loss on disposal of property, plant and equipment                  | 40,554,053           | 22,408,748      | (7,941,860)          | 3,553,332       |
| Provision for employee benefits   | 1,501,638,645        | 383,910,976     | 1,156,107,086        | 272,715,440     |
| Realised deferred pipeline and equipment income                           | (8,369,972)          | (6,559,468)     | (9,792,233)          | (7,862,360)     |
| Gain on bargain purchases   | (31,482,857)         | (1,354,901,971) | -                    | -               |
| Share of profit of investments in joint ventures                          | (2,625,714,096)      | (5,208,691,184) | -                    | -               |
| Share of profit of investments in associates                              | (1,933,059,453)      | (1,686,140,092) | -                    | -               |
| Profit from operations before changes in operating assets and liabilities | 27,335,578,343       | 59,681,460,904  | 18,007,088,537       | 45,695,565,721  |
| Operating assets (increase) decrease                                      |                      |                 |                      |                 |
| Trade receivables   | 7,688,772,097        | 1,972,547,646   | 6,769,976,249        | 50,941,794      |
| Other receivables   | 655,357,356          | (2,194,830,878) | 504,402,338          | 286,080,901     |
| Inventories   | 4,206,895,474        | (917,999,476)   | 3,795,750,644        | (1,376,326,558) |
| Value-added tax receivable  | 456,218,332          | (955,024,742)   | 134,764,625          | (820,811,688)   |
| Other current assets  | 1,216,416,609        | (550,809,553)   | 1,346,221,634        | (297,467,041)   |
| Other non-current assets  | (121,134,464)        | 55,416,788      | (24,216,553)         | (109,972,896)   |
| Operating liabilities increase (decrease)                                 |                      |                 |                      |                 |
| Trade payables  | (8,962,108,450)      | 1,860,866,374   | (7,540,342,464)      | 1,011,331,784   |
| Other payables  | (405,767,945)        | 193,161,182     | (2,731,219,413)      | (108,196,027)   |
| Current provisions  | 38,484,724           | (29,593,048)    | -                    | -               |
| Other current liabilities   | (10,756,357)         | 11,177,391      | -                    | -               |
| Cash paid for provisions for employee benefits                            | (233,434,021)        | (150,305,564)   | (157,074,878)        | (89,105,922)    |
| Other non-current provisions  | (30,534,035)         | 54,072,970      | -                    | -               |
| Other non-current liabilities   | (105,677,642)        | (121,866,769)   | (122,090,260)        | 2,226,848       |
| Cash received from operations   | 31,728,310,021       | 58,908,273,225  | 19,983,260,459       | 44,244,266,916  |
| Cash paid for income tax  | (1,553,273,997)      | (5,279,263,371) | (959,971,523)        | (4,743,628,244) |
| Net cash flows provided by operating activities                           | 30,175,036,024       | 53,629,009,854  | 19,023,288,936       | 39,500,638,672  |

Notes to the financial statements form an integral part of these statements

# STATEMENT OF CASH FLOWS (CONTINUED)

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Unit : Baht

|  | Consolidated          |                       | Separate              |                       |
|--|-----------------------|-----------------------|-----------------------|-----------------------|
|  | financial statements  |                       | financial statements  |                       |
|  | 2019                  | 2018                  | 2019                  | 2018                  |
| <b>CASH FLOWS FROM INVESTING ACTIVITIES</b>  |                       |                       |                       |                       |
| Interest received  | 970,074,693           | 922,850,661           | 796,872,684           | 786,413,438           |
| Dividends received   | 2,247,743,282         | 2,399,301,624         | 4,372,126,568         | 4,893,350,060         |
| Acquisition of investment properties   | -                     | (5,523,531,948)       | -                     | -                     |
| Acquisition of property, plant and equipment   | (39,827,749,088)      | (27,760,616,724)      | (22,275,592,652)      | (15,731,041,673)      |
| Proceeds from sale of property, plant and equipment  | 129,650,962           | 94,672,013            | 118,513,574           | 93,880,905            |
| Acquisition of intangible assets   | (989,177,952)         | (1,016,175,888)       | (720,528,657)         | (777,243,580)         |
| Acquisition of other non-current assets  | (6,981,143)           | -                     | -                     | -                     |
| (Increase) decrease of held-to-maturities debt securities  | 4,245,796,605         | (2,288,774,783)       | 240,351,300           | 1,830,441,452         |
| Decrease of available-for-sale securities  | 10,368,985,604        | 187,747,103           | 10,368,985,604        | 187,747,103           |
| Acquisition of investments in subsidiaries, joint ventures and associates  | (19,061,859,511)      | (3,023,883,732)       | (22,562,924,510)      | (11,454,800,880)      |
| Cash inflow from sale of investment in an associate  | 212,663,057           | -                     | -                     | -                     |
| Cash inflow from capital distribution of subsidiaries  | -                     | -                     | 1,927,949             | 40,770,000            |
| Cash paid for other non-marketable equity securities   | (259,855,403)         | (57,098,062)          | (1,125,000)           | -                     |
| Cash inflow from sales of other non-marketable equity securities   | 28,289,253            | 246,395,861           | 28,289,253            | 246,395,861           |
| Proceeds from short-term loans to related parties  | 7,101,928,666         | -                     | 7,279,289,288         | 120,023,452           |
| Increase in short-term loans to related parties  | (8,000,000,000)       | (234,817,500)         | (8,000,000,000)       | (485,469,576)         |
| Proceeds from long-term loans to related parties   | 1,827,494,000         | 3,212,377,500         | 1,827,494,000         | 3,212,377,500         |
| Increase in long-term loans to related parties   | (766,981,093)         | -                     | (766,981,093)         | -                     |
| Net cash flows used in investing activities  | (41,779,978,068)      | (32,841,553,875)      | (29,293,301,692)      | (17,037,155,938)      |
| <b>CASH FLOWS FROM FINANCING ACTIVITIES</b>  |                       |                       |                       |                       |
| Finance costs paid   | (2,917,779,970)       | (3,403,044,412)       | (2,449,463,098)       | (2,887,032,853)       |
| Dividends paid   | (16,336,282,158)      | (19,739,083,810)      | (15,779,901,765)      | (19,161,780,626)      |
| Repayment of finance lease liabilities   | (175,771,913)         | (152,762,836)         | (121,544,992)         | (122,484,066)         |
| Proceeds from short-term borrowings from financial institutions  | 144,468,261           | 18,524,232,681        | -                     | 16,452,870,311        |
| Proceeds from short-term borrowings from related parties   | -                     | -                     | 1,579,522,387         | 105,299,204           |
| Proceeds from long-term borrowings from financial institutions   | 13,237,281,710        | 14,438,870,000        | -                     | -                     |
| Proceeds from long-term borrowing from a related party   | -                     | -                     | -                     | 16,472,854,839        |
| Proceeds from long-term borrowings from other parties  | 15,637,595            | 127,959,729           | -                     | -                     |
| Repayment of short-term borrowings from financial institutions   | (1,425,000,000)       | (18,388,851,664)      | -                     | (16,452,870,311)      |
| Repayment of short-term borrowings from related parties  | -                     | -                     | (469,497,207)         | (732,420,891)         |
| Repayment of long-term borrowings from financial institutions  | (16,083,908,280)      | (18,069,061,020)      | (4,280,202,000)       | (6,793,400,000)       |
| Repayment of long-term borrowings from other parties   | (42,186,998)          | (746,806,619)         | -                     | -                     |
| Proceeds from increase in investment in a subsidiary from non-controlling interests  | 252,501,875           | 92,811,500            | -                     | -                     |
| Proceeds from debentures   | 20,000,000,000        | 16,371,246,158        | 20,000,000,000        | -                     |
| Repayment of debentures  | (1,942,000,000)       | (16,452,870,311)      | (1,942,000,000)       | (16,452,870,311)      |
| Cash paid for treasury stock   | (1,187,603,325)       | -                     | (1,187,603,325)       | -                     |
| Net cash flows used in financing activities  | (6,460,643,203)       | (27,397,360,604)      | (4,650,690,000)       | (29,571,834,704)      |
| Net decrease in cash and cash equivalents, before effect from foreign exchange rate  | (18,065,585,247)      | (6,609,904,625)       | (14,920,702,756)      | (7,108,351,970)       |
| Effect from foreign exchange rate in cash and cash equivalents and effect from translation differences on financial statements | 161,848,944           | (75,447,225)          | 176,139,833           | (185,189,619)         |
| Net decrease in cash and cash equivalents  | (17,903,736,303)      | (6,685,351,850)       | (14,744,562,923)      | (7,293,541,589)       |
| Cash and cash equivalents as at January 1,   | 36,744,040,127        | 43,429,391,977        | 27,141,980,258        | 34,435,521,847        |
| <b>Cash and cash equivalents as at December 31,</b>  | <b>18,840,303,824</b> | <b>36,744,040,127</b> | <b>12,397,417,335</b> | <b>27,141,980,258</b> |

Notes to the financial statements form an integral part of these statements

# NOTES TO THE FINANCIAL STATEMENTS

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

| Notes | Contents   |
|-------|--|
| 1.    | The Company's operations and general information                   |
| 2.    | Basis for preparation and presentation of the financial statements |
| 3.    | Significant accounting policies                                    |
| 4.    | Expenses from raw materials derogation                             |
| 5.    | Acquisition of businesses  |
| 6.    | Cash and cash equivalents  |
| 7.    | Trade receivables  |
| 8.    | Other receivables  |
| 9.    | Inventories  |
| 10.   | Investments in subsidiaries  |
| 11.   | Investments in joint ventures                                      |
| 12.   | Investments in associates  |
| 13.   | Other investments  |
| 14.   | Investment properties  |
| 15.   | Property, plant and equipment                                      |
| 16.   | Land leasehold right   |
| 17.   | Goodwill   |
| 18.   | Intangible assets  |
| 19.   | Deferred tax   |
| 20.   | Interest-bearing liabilities                                       |
| 21.   | Trade payables   |
| 22.   | Other payables   |
| 23.   | Provisions for employee benefits                                   |
| 24.   | Share capital  |
| 25.   | Additional paid-in capital and reserves                            |
| 26.   | Treasury stock   |
| 27.   | Transactions with related parties                                  |
| 28.   | Financial information by segment                                   |
| 29.   | Selling and distribution expenses                                  |
| 30.   | Administrative expenses  |
| 31.   | Employee benefits expenses   |
| 32.   | Expenses by nature   |
| 33.   | Finance costs  |
| 34.   | Income tax expense   |
| 35.   | Promotional privileges   |
| 36.   | Basic earnings per share   |
| 37.   | Dividends paid   |
| 38.   | Financial instruments  |
| 39.   | Commitments with non-related parties                               |
| 40.   | Litigations  |
| 41.   | Reclassifications  |
| 42.   | Events after the reporting period                                  |
| 43.   | Approval of the financial statements                               |

# NOTES TO THE FINANCIAL STATEMENTS

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

### 1. THE COMPANY'S OPERATIONS AND GENERAL INFORMATION

PTT Global Chemical Public Company Limited (the "Company") was registered on October 19, 2011 in accordance with the Public Company Limited Act, B.E. 2535. The Board of Governors of the SET approved the listing of the Company on the day that the Registrar accepted the registration on October 19, 2011.

The Company is a company in the PTT Public Company Limited ("PTT") group of companies. PTT is incorporated in Thailand and is the major shareholder of the Company, holding 47.92% of the Company's issued and paid-up share capital.

The Company is incorporated in Thailand and has its registered offices as follows:

|   |   |
|---|---|
| Head Office                                     | : 555/1, Energy Complex, Building A, 14th - 18th Floor, Vibhavadi-Rangsit Road, Chatuchak, Bangkok, Thailand        |
| Branch 1<br>(Rayong office Branch)              | : 59, Radniyom Road, Tambon Noenphra, Amphoe Mueang Rayong, Rayong, Thailand  |
| Branch 2<br>(Olefin 1 Branch)                   | : 14, I-1 Road, Tambon Map Ta Phut, Amphoe Mueang Rayong, Rayong, Thailand  |
| Branch 3<br>(Olefin 2 Branch)                   | : 9, I-4 Road, Tambon Map Ta Phut, Amphoe Mueang Rayong, Rayong, Thailand   |
| Branch 4<br>(Aromatics 1 Branch)                | : 4, I-2 Road, Tambon Map Ta Phut, Amphoe Mueang Rayong, Rayong, Thailand   |
| Branch 5<br>(Aromatics 2 Branch)                | : 98/9, Rayong 3191 Road, Tambon Map Ta Phut, Amphoe Mueang Rayong, Rayong, Thailand                                |
| Branch 6<br>(Refining Branch)                   | : 8, I-8 Road, Tambon Map Ta Phut, Amphoe Mueang Rayong, Rayong, Thailand   |
| Branch 7<br>(Jetty and Buffer Tank Farm Branch) | : 19, Rong Pui Road, Tambon Map Ta Phut, Amphoe Mueang Rayong, Rayong, Thailand                                     |
| Branch 8<br>(Aromatics reserve Branch)          | : 11, I-4 Road, Tambon Map Ta Phut, Amphoe Mueang Rayong, Rayong, Thailand  |
| Branch 9<br>(Lab Service Center Branch)         | : 24/9, Pakorn Songkro-Rat Road, Tambon Map Ta Phut, Amphoe Mueang Rayong, Rayong, Thailand                         |
| Branch 10<br>(PTTGC 10 Branch)                  | : 555/1, Energy Complex, Building A, 1st , 3rd and 10th Floor, Vibhavadi-Rangsit Road, Chatuchak, Bangkok, Thailand |
| Branch 11<br>(Olefin 3 Branch)                  | : 8, Phadang Road, Tambon Map Ta Phut, Amphoe Mueang Rayong, Rayong, Thailand                                       |
| Branch 12<br>(Polyethylene Branch)              | : 8, Map Ta Phut Industrial Estate, I-10 Road, Tambon Map Ta Phut, Amphoe Mueang Rayong, Rayong, Thailand           |
| Branch 13<br>(Innoplus Solution Center Branch)  | : 83/9-10, Moo 5, Tambon Tabma, Amphoe Mueang Rayong, Rayong, Thailand  |
| Branch 14<br>(Maintenance office)               | : 32, Rong Pui Road, Tambon Map Ta Phut, Amphoe Mueang Rayong, Rayong, Thailand                                     |

# NOTES TO THE FINANCIAL STATEMENTS

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

The principal businesses of the Company are refining and provision of integrated petroleum products, production and distribution of aromatics products including aromatic derivatives and production and distribution of ethylene, propylene, polyethylene plastic pellets and biochemical products. By-products are mixed C4, cracker bottom and tail gas. Minor activities are production and distribution of electricity, water, steam and other utilities. In addition, the Company also operates production support facilities such as jetty and buffer tank farm services for liquid chemical, oil and gas.

## 2. BASIS FOR PREPARATION AND PRESENTATION OF THE FINANCIAL STATEMENTS

- 2.1 The Company and subsidiaries (The “Group”) maintains its accounting records in Thai Baht and prepares its statutory financial statements in the Thai language in conformity with Thai Financial Reporting Standards (TFRS) and accounting practices generally accepted in Thailand.
- 2.2 The Group’s financial statements have been prepared in accordance with the Thai Accounting Standard (TAS) No. 1 (Revised 2018) “Presentation of Financial Statements”, which was effective for financial periods beginning on or after January 1, 2019 onward, and the Regulation of The Stock Exchange of Thailand (SET) dated October 2, 2017, regarding the preparation and submission of financial statements and reports for the financial position and results of operations of the listed companies B.E. 2560 and the Notification of the Department of Business Development regarding “The Brief Particulars in the Financial Statements (No.2) B.E. 2559” dated October 11, 2016.
- 2.3 The financial statements have been prepared under the historical cost convention except as disclosed in the significant accounting policies.
- 2.4 An English version of the financial statements have been prepared from the financial statements that is in the Thai language under law. In the event of a conflict or a difference in interpretation between the two languages, the Thai language financial information shall prevail.
- 2.5 The consolidated financial statements included the accounts of the Company and its subsidiaries, after elimination of intercompany transactions, of which the percentage of shareholding as at December 31, 2019 and 2018, are as follows:

| <u>Name of the entity</u>        | <u>Type of business</u>  | <u>Country of incorporation</u> | <u>Ownership interest (%)</u> |             |
|----------------------------------|--|---------------------------------|-------------------------------|-------------|
|                                  |  |                                 | <u>2019</u>                   | <u>2018</u> |
| <i>Direct subsidiaries</i>       |  |                                 |                               |             |
| Global Green Chemicals Plc.      | Manufacturing and distributing biochemical products  | Thailand                        | 72.29                         | 72.29       |
| GC Glycol Co., Ltd.              | Manufacturing and distributing petrochemical products  | Thailand                        | 100                           | 100         |
| GC Polyols Co., Ltd.             | Manufacturing and distributing petrochemical products  | Thailand                        | 82.10                         | 82.10       |
| GC Marketing Solutions Co., Ltd. | Development, marketing and distributing polymers products, by-products and other polymers-related products | Thailand                        | 100                           | 100         |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

| <u>Name of the entity</u>  | <u>Type of business</u>  | <u>Country of incorporation</u> | <u>Ownership interest (%)</u> |             |
|--|--|---------------------------------|-------------------------------|-------------|
|  |  |                                 | <u>2019</u>                   | <u>2018</u> |
| GC Maintenance and Engineering Co., Ltd.   | Factory maintenance and engineering services   | Thailand                        | 100                           | 100         |
| GC Logistics Solutions Co., Ltd.   | Transportation, warehouse and bagging packing management of polyethylene plastic pellets | Thailand                        | 100                           | 100         |
| GC Ventures Co., Ltd.  | Invest in form of Corporate Venture Capital (CVC)  | Thailand                        | 100                           | 100         |
| GC Treasury Center Co., Ltd.   | Financial service management for the group   | Thailand                        | 100                           | 100         |
| GC Styrenics Co., Ltd.   | Manufacturing and distributing petrochemical products                                    | Thailand                        | 100                           | 100         |
| GC Oxirane Co., Ltd.   | Manufacturing and distributing petrochemical products                                    | Thailand                        | 100                           | 100         |
| GC-M PTA Co., Ltd.<br>(49% Direct interest and 25% Indirect interest)<br>(Formerly Siam Mitsui PTA Co., Ltd.)                    | Manufacturing and distributing petrochemical products                                    | Thailand                        | 74                            | 74          |
| GC Estate Co., Ltd.  | Real estate development for rent and to invest in petrochemical and related industries   | Thailand                        | 100                           | 100         |
| Solution Creation Co., Ltd.  | Manufacturing and distributing petrochemical products and health and nutrition products  | Thailand                        | 100                           | 100         |
| Thai Tank Terminal Limited   | Service for the storage and handling of liquid chemicals, oil and gas                    | Thailand                        | 51                            | 51          |
| Bio Spectrum Co., Ltd.<br>(Liquidation process finalized in January 2019)  | Manufacturing and distributing biochemical products                                      | Thailand                        | -                             | 100         |
| PTT Phenol Co., Ltd.   | Manufacturing and distributing petrochemical products                                    | Thailand                        | 100                           | 100         |
| Auria BioChemicals Co., Ltd.<br>(54% Direct interest and 46% Indirect interest)<br>(Liquidation process finalized in April 2019) | Research and development of bio-based chemicals  | Thailand                        | -                             | 100         |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

| <u>Name of the entity</u>   | <u>Type of business</u>  | <u>Country of incorporation</u> | <u>Ownership interest (%)</u> |             |
|---|--|---------------------------------|-------------------------------|-------------|
|   |  |                                 | <u>2019</u>                   | <u>2018</u> |
| NPC Safety and Environmental Service Co., Ltd.  | Safety and environmental services  | Thailand                        | 100                           | 100         |
| PTTGC America Corporation   | Holding and operating international business   | United States of America        | 100                           | 100         |
| PTTGC International Private Limited   | Holding and operating international business   | Singapore                       | 100                           | 100         |
| <i>Indirect subsidiaries</i>  |  |                                 |                               |             |
| GGC Biochemicals Co., Ltd.  | Holding and operating in Thailand  | Thailand                        | 100                           | 100         |
| Thai Fatty Alcohols Co., Ltd.   | Manufacturing and distributing biochemical products                                      | Thailand                        | 72.29                         | 72.29       |
| Thai Pet Resin Co., Ltd.  | Manufacturing and distributing petrochemical products                                    | Thailand                        | 74                            | 74          |
| PL Global Transport Co., Ltd.   | Transportation of polyethylene plastic pellets   | Thailand                        | 100                           | 100         |
| NPC S&E Security Guard Co., Ltd.  | Safety services  | Thailand                        | 100                           | 100         |
| GC Logistics Solutions (Vietnam) Co., Ltd.  | Transportation, warehouse and bagging packing management of polyethylene plastic pellets | Vietnam                         | 100                           | -           |
| GC Ventures America Corporation   | Invest in form of Corporate Venture Capital (CVC) outside Thailand                       | United States of America        | 100                           | 100         |
| GCM Polymer Trading DMCC (Formerly Polymer Marketing DMCC)                              | Distributing polymer products and other polymers-related products                        | United Arab Emirates            | 100                           | 100         |
| GC Marketing Solutions Myanmar Co., Ltd. (Formerly Polymer Marketing Myanmar Co., Ltd.) | Distributing polymer products and other polymers-related products                        | Myanmar                         | 100                           | 100         |
| GC Marketing Solutions Vietnam Co., Ltd. (Formerly Polymer Marketing Vietnam Co., Ltd.) | Distributing polymer products and other polymers-related products                        | Vietnam                         | 100                           | 100         |
| PT GCM Marketing Solutions Indonesia  | Distributing polymer products and other polymers-related products                        | Indonesia                       | 67                            | -           |
| PTTGC America LLC   | Operating petrochemical business   | United States of America        | 100                           | 100         |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

| <u>Name of the entity</u>              | <u>Type of business</u>                             | <u>Country of incorporation</u> | <u>Ownership interest (%)</u> |             |
|--|---|---------------------------------|-------------------------------|-------------|
|  |   |                                 | <u>2019</u>                   | <u>2018</u> |
| PTTGC Innovation America Corporation   | Research and development of bio-based chemicals     | United States of America        | 100                           | 100         |
| PTTGC International (Netherlands) B.V. | Holding and operating international business        | Netherlands                     | 100                           | 100         |
| PTTGC International (USA) Inc.         | Holding and operating international business        | United States of America        | 100                           | 100         |
| Vencorex Holding                       | Manufacturing and distributing chemical specialties | France                          | 90.82                         | 90.82       |

## 2.6 Thai Financial Reporting Standards affecting the presentation and disclosure in the current period financial statements

During the year, the Group has adopted the revised and new financial reporting standards and guidelines on accounting issued by the Federation of Accounting Professions which become effective for fiscal years beginning on or after January 1, 2019. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards, with most of the changes directed towards revision of wording and terminology, and provision of interpretations and accounting guidance to users of standards. The adoption of these financial reporting standards does not have any significant impact on the Group's financial statements.

## 2.7 Thai Financial Reporting Standards announced in the Royal Gazette but not yet effective

The Federation of Accounting Professions has issued the Notification regarding the new and revised Thai Financial Reporting Standards that will be effective for the financial statements for the periods beginning on or after January 1, 2020 onwards. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards, with most of the changes directed towards revision of wording and terminology, and provision of interpretations and accounting guidance to users of standards without material change in key concept except for the Thai Accounting Standards (TAS), Thai Financial Reporting Standards (TFRS) and Thai Financial Reporting Standard Interpretations (TFRIC):

The following TASs and TFRSs have revision or additional paragraph and accounting guidance:

### **Thai Accounting Standards (“TAS”)**

|        |  |
|--------|--|
| TAS 12 | Income Taxes                                 |
| TAS 19 | Employee Benefits                            |
| TAS 23 | Borrowing Costs                              |
| TAS 28 | Investments in Associates and Joint Ventures |

### **Thai Financial Reporting Standards (“TFRS”)**

|         |                       |
|---------|-----------------------|
| TFRS 3  | Business Combinations |
| TFRS 11 | Joint Arrangements    |

The Group's management will adopt the relevant TFRS in the preparation of Group's financial statements when they become effective. The Group's management has assessed the impact of the TFRS and considered that the adoption of the TFRS does not have any significant impact on the financial statements of the Group in the period of initial application.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

The following new TFRSs have material change in key concept:

## Group of Financial Instruments Standards

### **Thai Accounting Standards (“TAS”)**

TAS 32 Financial Instruments: Presentation

### **Thai Financial Reporting Standards (“TFRS”)**

TFRS 7 Financial Instruments: Disclosures

TFRS 9 Financial Instruments

### **Thai Financial Reporting Standard Interpretations (“TFRIC”)**

TFRIC 16 Hedges of a Net Investment in a Foreign Operation

TFRIC 19 Extinguishing Financial Liabilities with Equity Instruments

These group of Standards make stipulations relating to the classification of financial instruments and their measurement at fair value or amortised cost; taking into account the type of instrument, the characteristics of the contractual cash flows and the Company’s business model, the calculation of impairment using the expected credit loss method, and the concept of hedge accounting. These include stipulations regarding the presentation and disclosure of financial instruments. These Standards will supersede the Standards and Interpretations relating to the financial instruments upon their effective date.

The Group’s management will adopt such TFRS in the preparation of the Group’s financial statements when they become effective. The Group’s management is in the process to assess the impact of the TFRS on the financial statements of the Group in the period of initial application. The Group’s management expected to apply the TFRS as an adjustment to the opening balance of retained earnings or other equity component as at January 1, 2020.

## Thai Financial Reporting Standards No. 16 “Leases” (“TFRS 16”)

This TFRS provides a comprehensive model for the identification of lease arrangements and their treatment in the financial statements of both lessees and lessors.

This TFRS will supersede the following lease Standards and Interpretations upon its effective date, which are Thai Accounting Standard No. 17 “Leases” (“TAS 17”), Thai Accounting Standard Interpretation No. 15 “Operating Lease - Incentives”, Thai Accounting Standard Interpretation No. 27 “Evaluating the Substance of Transactions involving the Legal Form of a Lease” and Thai Financial Reporting Standard Interpretation No. 4 “Determining whether on Arrangement contains a Lease”.

For lessee accounting, there are significant changes to lease accounting in this TFRS by removing the distinction between operating and finance leases under TAS 17 and requiring a lessee to recognise a right-of-use asset and a lease liability at commencement for all leases, except for short-term leases and leases of low value assets. However, the lessor accounting treatment continues to require a lessor to classify a lease either as an operating lease or a finance lease, using the same concept as TAS 17.

The Group’s management will adopt such TFRS in the preparation of the Group’s financial statements when it becomes effective. The Group’s management is in the process to assess the impact of the TFRS on the financial statements of the Group in the period of initial application. The Group’s management expected to apply the TFRS using the cumulative effect recognised at the date of initial application as at January 1, 2020.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## 3. SIGNIFICANT ACCOUNTING POLICIES

The accounting policies set out below have been applied consistently to all periods presented in these financial statements.

### 3.1 Basis of consolidation

The consolidated financial statements relate to the Company and its subsidiaries and the Group's interests in joint ventures and associates.

#### *Business combinations*

The Group applies the acquisition method for all business combinations when control is transferred to the Group, as describe in subsidiaries section, other than those with entities under common control.

The Group recognises goodwill at the acquisition date measured as the excess of (1) over (2) as:

(1) The aggregate of:

- the fair value of the consideration transferred;
- the recognised amount of any non-controlling interests in the acquiree; and
- if the business combination is achieved in stages, the fair value of the existing equity interest in the acquiree.

(2) The net fair value of the identifiable assets acquired and liabilities assumed.

If value of (1) is less than (2), difference is contributed to gain on bargain purchase and recognised immediately in profit or loss.

The consideration transferred is recognised at fair value at the acquisition date.

Transaction costs that the Group incurs in connection with a business combination, such as legal fees, and other professional and consulting fees are expensed as incurred.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period, or additional assets or liabilities are recognised, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognised at that date.

#### *Acquisitions from entities under common control*

Business combinations under common control are accounted for using a method similar to the pooling of interest method. Under that method the acquirer recognises assets and liabilities of the acquired businesses at their carrying amounts in the consolidated financial statements of the ultimate parent company at the moment of the transaction. The difference between the carrying amounts of the acquired net assets and the consideration transferred is recognised as surplus or discount from business combinations under common control in shareholder's equity. The surplus or discount will be transferred to retained earnings upon divestment of the businesses acquired.

The results from operations of the acquired businesses will be included in the consolidated financial statements of the acquirer from the beginning of the comparative period or the moment the businesses came under common control, whichever date is later, until control ceases.

#### *Subsidiaries*

Subsidiaries are entities controlled by the Group. The Group controls an entity when it has rights to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date on which control commences until the date on which control ceases.

#### *Non-controlling interests*

At the acquisition date, the Group measures any non-controlling interest at its proportionate interest in the identifiable net assets of the acquiree.

Changes in the Group's interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## *Loss of control*

When the Group loses control over a subsidiary, it derecognises the assets and liabilities of the subsidiary, and any related non-controlling interests and other components of equity. Any resulting gain or loss is recognised in profit or loss. Any interest retained in the former subsidiary is measured at fair value when control is lost.

## *Interests in equity-accounted investees*

The Group's interests in equity-accounted investees comprise interests in joint ventures and associates.

A joint venture is an arrangement in which the Group has joint control, whereby the Group has rights to the net assets of the arrangement, rather than the rights to its assets and obligations for its liabilities. Associates are those entities in which the Group has significant influence, but not control or joint control, over the financial and operating policies.

Interests in joint ventures and associates are accounted for using the equity method. They are recognised initially at cost. Subsequent to initial recognition, the consolidated financial statements include the Group's share of the profit or loss and other comprehensive income of equity-accounted investees, until the date on which joint control or significant influence ceases.

## *Transactions eliminated on consolidation*

Intra-group balances and transactions and any unrealised income or expenses arising from intra-group transactions are eliminated in the preparing of the consolidated financial statements. Unrealised gains and losses arising from transactions with joint ventures and associates are eliminated against the investment to the extent of the Group's interest in the investee.

## 3.2 Foreign currencies

### *Foreign currency transactions*

Transactions in foreign currencies are translated to the respective functional currency of Group entities at exchange rate at the dates of the transactions.

Monetary assets and liabilities denominated in foreign currencies at the reporting date are translated to the functional currency at the exchange rate at the reporting date.

Non-monetary assets and liabilities measured at cost in foreign currencies are translated to the functional currency at the exchange rate at the dates of the transactions.

Foreign currency differences arising on retranslation are generally recognised in profit or loss. However, foreign currency differences arising from the translation of qualifying cash flow hedges to the extent that the hedges are effective are recognised in other comprehensive income.

### *Foreign operations*

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising on acquisition of foreign operations, are translated to Thai Baht at the exchange rates at the reporting date.

The revenues and expenses of foreign operations are translated to Thai Baht at the average rates during the year.

Foreign exchange differences are recognised in other comprehensive income and presented in the foreign currency translation reserve in equity until disposal of the investment, except to extent that the translation difference is allocated to non-controlling interest.

## 3.3 Derivatives

Derivatives are used to manage exposure to foreign exchange, interest rate arising from operating, financing and investing activities. Derivatives are not used for trading purposes. However, derivatives that do not qualify for hedging instruments are accounted for as trading instruments.

Derivatives are recognised initially at fair value; attributable transaction costs are recognised in profit or loss when incurred. Subsequent to initial recognition, they are remeasured at fair value. The gain or loss on remeasurement is recognised immediately in profit or loss.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

The fair value of interest rate swaps is based on broker quotes at the reporting date. Those quotes are tested for reasonableness by discounting estimated future cash flows based on the terms and maturity of each contract and using market interest rates for a similar instrument at the reporting date.

The fair value of forward exchange contracts is based on their listed market price as the reporting date, if available. If the listed market price is not available, then fair value is estimated by forward contract with the same nature and maturity date at the reporting date.

## 3.4 Hedge accounting

### *Cash flow hedges accounting of the non-financial assets or non-financial liabilities*

When a derivative is designated as the hedging instrument in a hedge of the variability in cash flows of a non-financial asset or non-financial liability, the effective portion of gain or loss from subsequent measurement of fair value of the derivative is recognised in other comprehensive income and presented in the hedging reserve in equity. Any ineffective portion is recognised immediately in profit or loss.

When a hedge of a non-financial asset or non-financial liability occurs, the gain or loss recognised in other comprehensive income is included in the cost of the non-financial asset or non-financial liability.

### *Discontinuing hedge accounting*

When the hedging instrument expires or is sold, terminated, or no longer qualifies for hedge accounting, the hedge accounting is discontinued prospectively. Any cumulative gain or loss on the hedging instrument existing in equity is retained in equity. When the hedge of the non-financial assets or non-financial liabilities item ultimately occurs, the gain or loss is adjusted according to cash flow hedges accounting.

When the non-financial assets or non-financial liabilities item is no longer expected to occur, the cumulative gain or loss that was reported in equity is recognised in profit or loss immediately.

## 3.5 Cash and cash equivalents

Cash and cash equivalents comprise cash balances, deposits and highly liquid current investments.

## 3.6 Trade and other receivables

Trade and other receivables are stated at their invoice value less allowance for doubtful accounts.

The allowance for doubtful accounts is assessed primarily on analysis of overdue aging and future expectations of customer payments. Bad debts are written off when incurred.

## 3.7 Inventories

Inventories are stated at the lower of cost or net realisable value.

Cost is calculated using the weighted average cost principle, and comprises all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition. In the case of manufactured inventories and work-in-progress, cost includes an appropriate share of production overheads based on normal operating capacity.

Net realisable value is the estimated selling price in the ordinary course of business less the estimated costs to complete and to make the sale.

Provision is made for obsolete and slow-moving of finished goods, factory supplies and spare parts based on the items that are obsoleted and expected to be unsalable.

## 3.8 Investments

### *Investments in subsidiaries, joint ventures and associates*

Investments in subsidiaries, joint ventures and associates in the separate financial statements of the Company are accounted for using the cost method. Investments in joint ventures and associates in the consolidated financial statements are accounted for using the equity method.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## *Investments in other debt securities and equity securities*

Debt securities that the Group has the positive intent and ability to hold to maturity are classified as held-to-maturity investments. Held-to-maturity investments are stated at amortised cost, less any impairment losses. The difference between the acquisition cost and redemption value of such debt securities is amortised using the effective interest rate method over the period to maturity.

Debt securities and marketable equity securities, other than those securities held for trading or intended to be held to maturity, are classified as available-for-sale investments. Available-for-sale investments are, subsequent to initial recognition, stated at fair value, and changes therein, other than impairment losses and foreign currency differences on available-for-sale monetary items, are recognised directly in equity. Impairment losses and foreign exchange differences are recognised in profit or loss. When these investments are derecognised, the cumulative gain or loss previously recognised directly in equity is recognised in profit or loss. Where these investments are interest-bearing, interest calculated using the effective interest method is recognised in profit or loss.

Equity securities which are not marketable are stated at cost less any impairment losses.

The fair value of financial instruments classified as available-for-sale is determined as the quoted bid price at the reporting date.

## *Disposal of investments*

On disposal of an investment, the difference between net disposal proceeds and the carrying amount together with the associated cumulative gain or loss that was reported in equity is recognised in profit or loss.

If the Group disposes of part of its holding of a particular investment, the deemed cost of the part sold is determined using the weighted average method applied to the carrying value of the total holding of the investment.

### 3.9 Investment properties

Property that is held for long-term rental yields or for capital appreciation or both, and that is not occupied by the companies in the consolidated Group, is classified as investment properties.

Investment properties of the Group are land and buildings held for long-term rental yields or for capital appreciation.

Investment properties are measured initially at its cost, including related transaction costs and borrowing costs. Borrowing costs incurred for the purpose of acquiring, constructing or producing a qualifying investment properties are capitalised as part of its cost.

After initial recognition, investment properties are carried at cost less accumulated depreciation and accumulated impairment losses.

Land is not depreciated. Depreciation on other investment properties which are buildings is calculated using the straight line method to allocate their cost to their residual values over their estimated useful live for 20 years.

Subsequent expenditure is capitalised to the asset's carrying amount only when it is probable that future economic benefits associated with the expenditure will flow to the Group and the cost of the item can be measured reliably. All other repairs and maintenance costs is expensed when incurred. When part of an investment property is replaced, the carrying amount of the replaced part is derecognised.

### 3.10 Property, plant and equipment

#### *Recognition and measurement*

##### *Owned assets*

Land are stated at cost less allowance for impairment.

Plant and equipment are measured at cost less accumulated depreciation and accumulated impairment losses.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of self-constructed assets includes the cost of materials and direct labour, any other costs directly attributable to bringing the assets to a working condition for their intended use, the costs of dismantling and removing the items and restoring the site on which they are located, and capitalised borrowing costs. Cost also may include transfers from other comprehensive income of any gain or loss on qualifying cash flow hedges of foreign currency purchases of property, plant and equipment. Purchased software that is integral to the functionality of the related equipment is capitalised as part of that equipment.

When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Any gains and losses on disposal of an item of property, plant and equipment are determined by comparing the proceeds from disposal with the carrying amount of property, plant and equipment, and are recognised in profit or loss.

## *Leased assets*

Leases in terms of which the Group substantially assumes all the risk and rewards of ownership are classified as finance leases. Property, plant and equipment acquired by way of finance leases are capitalised at the lower of their fair value and the present value of the minimum lease payments at the inception of the lease, less accumulated depreciation and impairment losses. Lease payments are apportioned between the finance charges and reduction of the lease liability so as to achieve a constant rate of interest on the remaining balance of the liability. Finance charges are charged directly to the profit or loss.

## *Subsequent costs*

The cost of replacing a part of an item of property, plant and equipment is recognised in the carrying amount of the item if it is probable that the future economic benefits embodied within the part will flow to the Group, and its cost can be measured reliably. The carrying amount of the replaced part is derecognised. The costs of the day-to-day servicing of property, plant and equipment are recognised in profit or loss as incurred.

## *Depreciation*

Depreciation on other assets is calculated based on the depreciable amount, which is the cost of an asset, or other amount substituted for cost, less its residual value.

Depreciation is charged to profit or loss on a straight-line basis over the estimated useful lives of each component of an item of assets. The estimated useful lives are as follows:

|   |      |       |
|---|------|-------|
| Land improvement                              | 5-30 | years |
| Plant, machinery, equipment and factory tools | 5-40 | years |
| Buildings and buildings improvement           | 5-30 | years |
| Furniture, fixtures and office equipment      | 3-10 | years |
| Vehicles                                      | 5-25 | years |

No depreciation is provided on assets under construction.

Depreciation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

## 3.11 Intangible assets

### *Goodwill*

Goodwill that arises upon the acquisition of businesses is included in intangible assets. Subsequent to initial recognition, goodwill is measured at cost less accumulated impairment losses.

Goodwill in investment in joint ventures and associates is included in the carrying amount of the investment in joint ventures and associates, impairment loss on such an investment is deducted directly in investment in joint ventures and associates.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## *Other intangible assets*

Other intangible assets that are acquired by the Group and have finite useful lives are measured at cost less accumulated amortisation and accumulated impairment losses.

## *Subsequent expenditure*

Subsequent expenditure is capitalised only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditure, including expenditure on internally generated goodwill and brands, are recognised in profit or loss as incurred.

## *Amortisation*

Amortisation is based on the cost of the asset less its residual value.

Amortisation is recognised in profit or loss on a straight-line basis over the estimated useful lives of intangible assets, other than goodwill and trademark, from the date that they are available for use, since this most closely reflects the expected pattern of consumption of the future economic benefits embodied in the asset. The estimated useful lives are as follows:

|   |       |       |
|---|-------|-------|
| Production licence fees                                   | 10-30 | years |
| Computer software   | 3-10  | years |
| Customer contracts and the related customer relationships | 5     | years |
| Right to use - pipe rack                                  | 6-15  | years |
| Right to use - others                                     | 3-16  | years |

Amortisation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

## 3.12 Impairment

The carrying amounts of the Group's assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, the assets' recoverable amounts are estimated. For goodwill and intangible assets that have indefinite useful lives or are not yet available for use, the recoverable amount is estimated each year at the same time.

An impairment loss is recognised if the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. The impairment loss is recognised in profit or loss.

When a decline in the fair value of an available-for-sale financial asset has been recognised directly in equity and there is objective evidence that the value of the asset is impaired, the cumulative loss that had been recognised directly in equity is recognised in profit or loss even though the financial asset has not been derecognised. The amount of the cumulative loss that is recognised in profit or loss is the difference between the acquisition cost and current fair value, less any impairment loss on that financial asset previously recognised in profit or loss.

## *Calculation of recoverable amount*

The recoverable amount of held-to-maturity securities carried at amortised cost is calculated as the present value of the estimated future cash flows discounted at the original effective interest rate.

The recoverable amount of available-for-sale financial assets is calculated by reference to the fair value.

The recoverable amount of a non-financial asset is the greater of the asset's value in use and fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For an asset that does not generate cash inflows largely independent of those from other assets, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## *Reversals of impairment*

An impairment loss in respect of a financial asset is reversed if the subsequent increase in recoverable amount can be related objectively to an event occurring after the impairment loss was recognised in profit or loss.

An impairment loss in respect of goodwill is not reversed.

Impairment losses recognised in prior periods in respect of other non-financial assets are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

## 3.13 Interest-bearing liabilities

Interest-bearing liabilities are recognised initially at fair value less attributable transaction charges. Subsequent to initial recognition, interest-bearing liabilities are stated at amortised cost with any difference between cost and redemption value being recognised in profit or loss over the period of the borrowings on an effective interest basis.

## 3.14 Trade and other payables

Trade and other payables are stated at cost.

## 3.15 Employee benefits

### *Defined contribution plans*

Obligations for contributions to defined contribution plans are expensed as the related service is provided.

### *Defined benefit plans*

The Group's net obligation in respect of defined benefit plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in the current and prior periods, discounting that amount.

The calculation of defined benefit obligations is performed every 3 years by a qualified actuary using the projected unit credit method.

Remeasurements of the defined benefit liability, actuarial gain or loss are recognised immediately in Other comprehensive income. The Group determines the interest expense on the defined benefit liability for the period by applying the discount rate used to measure the defined benefit obligation at the beginning of the annual period. Interest expense and other expenses related to defined benefit plans are recognised in profit or loss.

When the benefits of a plan are changed or when a plan is curtailed, the resulting change in benefit that relates to past service or the gain or loss on curtailment is recognised immediately in profit or loss. The Group recognises gains and losses on the settlement of a defined benefit plan when the settlement occurs.

### *Other long-term employee benefits*

The Group's net obligation in respect of long-term employee benefits is the amount of future benefit that employees have earned in return for their service in the current and prior periods. That benefit is discounted to determine its present value. Remeasurements are recognised in profit or loss in the period in which they arise.

### *Termination benefits*

Termination benefits are expensed at the earlier of when the Group can no longer withdraw the offer of those benefits and when the Group recognises costs for a restructuring. If benefits are not expected to be settled wholly within 12 months of the end of the reporting period, then they are discounted.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## *Short-term employee benefits*

Short-term employee benefits are expensed as the related service is provided. A liability is recognised for the amount expected to be paid if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

### 3.16 Provisions

A provision is recognised if, as a result of a past event, the Group has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The unwinding of the discount on provisions is recognised as finance cost.

### 3.17 Repurchase of share capital (treasury stock)

When share capital recognised as equity is repurchased, the amount of consideration paid, including directly attributable costs, is classified as treasury stock and recognised as a deduction from equity. An equal amount is appropriated from retained earnings and taken to a reserve for treasury stock within equity. When treasury stock are sold, the amount received is recognised as an increase in equity by crediting the cost of the treasury stock sold, calculated using the weighted average method, to the treasury stock account and transferring the equivalent amount back from treasury stock reserve to retained earnings. Surpluses on the sale of treasury stock are taken directly to a separate category within equity, 'Premium on treasury stock'. Net deficits on sale or cancellation of treasury stock are debited to retained earnings after setting off against any remaining balance of premium on treasury stock.

### 3.18 Revenue

Revenue excludes value added taxes and is arrived at after deduction of trade discounts.

#### *Revenues from sale of goods and rendering of services*

Revenues from sale of goods is recognised when control of the goods has transferred to the customer, being at the point the goods are delivered to the customer. Revenues from rendering of services is recognised as a performance obligation satisfied at a point in time when services underlying the particular performance obligation is transferred to the customer or is recognised over time based on the stage of completion of the contract.

#### *Investment income*

Investment income consists of dividend income and interest income from investments and bank deposits. Dividend income is recognised in profit or loss on the date the Group's right to receive payments is established. Interest income is recognised on a time basis, based on the principle outstanding and the applicable interest rate.

#### *Other income*

Other income is recognised on an accrual basis.

### 3.19 Finance costs

Finance costs is recognised using the effective interest method and comprise interest expense on borrowings, unwinding of the discount on provisions and contingent consideration.

Borrowing costs that are not directly attributable to the acquisition, construction or production of a qualifying asset are recognised in profit or loss using the effective interest method.

### 3.20 Operating leases

Payments made under operating leases are recognised in profit or loss on a straight line basis over the term of the lease.

Contingent lease payments which the lease adjustment is confirmed are accounted for by revising the minimum lease payments over the remaining term of the lease.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## 3.21 Income tax

Income tax expense for the year comprises current and deferred tax. Current and deferred tax are recognised in profit or loss except to the extent that they relate to the items recognised in equity are recognised in other comprehensive income.

Current tax is the expected tax payable or receivable on the taxable income for the year, using tax rates enacted at the end of the reporting period, and any adjustment to tax payable or receivable in respect of previous years.

Deferred tax is recognised in respect of temporary differences between the carrying amounts and taxable value of assets and liabilities, using tax rates enacted or substantively enacted to the temporary differences when they reverse.

Deferred tax is not recognised for the following temporary differences:

- the initial recognition of goodwill and related transactions
- the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit or loss
- differences relating to investments in subsidiaries to the extent that it is probable that they will not reverse in the foreseeable future.

The measurement of deferred tax reflects the tax consequences that would follow the manner in which the Group expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

In determining the amount of current and deferred tax, the Group takes into account the impact of uncertain tax positions and whether additional taxes and interest may be due. The Group believes that its accruals for tax liabilities are adequate for all open tax years based on its assessment of many factors, including interpretations of tax law and prior experience. This assessment relies on estimates and assumptions and may involve a series of judgements about future events. New information may become available that causes the Group to change its judgement regarding the adequacy of existing tax liabilities; such changes to tax liabilities will impact tax expense in the period that such a determination is made.

Deferred tax assets and liabilities on different tax entities are offset if there is a legally enforceable right to offset current tax assets and liabilities, and they relate to income taxes levied by the same tax authority.

A deferred tax asset is recognised to the extent that it is probable that deferred tax assets can be utilised as future tax benefit. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is no longer probable that the related tax benefit will be realised.

## 3.22 Basic earnings (loss) per share

Basic earnings (loss) per share ("EPS") is calculated by dividing net profit (loss) for the year attributable to owners of the parent by the weighted average number of ordinary shares outstanding during the year, adjusted for treasury shares.

## 3.23 Financial information by segment

Segment results that are reported to the Group's Management Committee (the chief operating decision maker) include items directly attributable to a segment as well as those that can be allocated on a reasonable basis.

## 3.24 Measurement of fair values

A number of the Group's accounting policies and disclosures require the measurement of fair values, for both financial assets and liabilities.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

When measuring the fair value of an asset or a liability, the Group uses observable market data as far as possible. Fair values are categorised into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2: inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

If the inputs used to measure the fair value of an asset or liability might be categorised in different levels of the fair value hierarchy, then the fair value measurement is categorised in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement.

Further information about the assumptions made in measuring fair values is included in note 14: Investment properties and note 38: Financial instruments.

## 3.25 Use of management's judgments

The preparation of financial statements in conformity with TFRS requires the Company's management to exercise judgments in order to determine the accounting policies, estimates and various assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Although these estimates are based on management's reasonable consideration of current events, actual results may differ from these estimates.

## 4. EXPENSES FROM RAW MATERIALS DEROGATION

As the raw materials used in the production process are the volatile commodity materials, Global Green Chemical Public Company Limited which is a subsidiary of the Group, has policy to manage inventory to be at an appropriate level in order to mitigate the impacts from raw material price volatility. During second quarter of 2018, the subsidiary found that the quantity of raw materials recorded in the system was higher than actual quantity stored at the suppliers' facilities. In addition, this also includes the case that the subsidiary delivered the raw materials to the supplier for refining, however, the supplier neither returned back the refining products according to the contract nor the raw materials to the subsidiary.

The subsidiary conducted an in-depth investigation and found the misconduct among certain suppliers and some employees in the relevant functions of the subsidiary, in which certain suppliers are related. The subsidiary had already taken legal actions against involved parties (both external and internal) as well as the disciplinary actions against every involved employees.

In consequence, the Group recognised expenses from raw materials derogation in the consolidated statements of income for the year ended December 31, 2018 amounting to Baht 2,004 million (owners of the parent net of tax amounting to Baht 1,261 million). However, the subsidiary is legally entitled to claim from those involved.

The subsidiary was informed by the third party who received the transfer of claim from the supplier of the subsidiary for the payment of raw materials, which the supplier of the subsidiary borrowed from the third party to purchase raw materials to sell to the subsidiary and the subsidiary had to pay for the raw materials to that third party under the transfer of right for the payment of raw materials. After reviewing the provided documents, the subsidiary informed to the third party that these documents were not in the system, nor there was no evidence regarding the delivery of raw materials as prescribed in the documents. Subsequently, on August 20, 2018, the third party filed a civil lawsuit against the supplier of the subsidiary and the subsidiary as joint defendants for violation of loan agreement and transfer of claim, with damage claimed amounting to Baht 308.75 million with interest rate at 15% per annum amounting to Baht 15.90 million, totalling Baht 324.65 million. The subsidiary appointed a lawyer and filed a statement of defense. Currently, this case is in the process of the plaintiffs and defendants witness hearing. However, the legal advisor of the subsidiary provided an opinion that the subsidiary is not liable for any damages as per the plaint as there was no evidence regarding the delivering of raw materials to the subsidiary. As a result, there is no obligation.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

On January 31, 2019, the subsidiary has entered into the settlement agreements with some suppliers in order to get compensate from those suppliers for the raw materials derogation which requires suppliers to deliver the pending quantity of raw materials under the period specified in the agreements. Consequently, the suppliers gradually delivered the pending raw materials to the subsidiary during the year 2019 amounting to Baht 16 million. In addition, such suppliers registered a mortgage on land to the subsidiary with fair value of Baht 217 million. Consequently, the subsidiary reviewed the provision for expenses from raw materials derogation and reversed such provision amounting to Baht 233 million in the consolidated and separate statements of profit or loss for the year ended December 31, 2019.

Besides, on February 27, 2019, a financial institution filed a civil lawsuit against the supplier of the subsidiary, director of supplier of the subsidiary and the subsidiary as joint defendants for violation of credit limit agreement, sale of promissory notes, transfer of money, guarantee and forced mortgage, with damage claimed amounting to Baht 55.95 million and interest amounting to Baht 3.49 million, totalling Baht 59.44 million. Therefore, the subsidiary filed a statement of defense. On October 28, 2019, the plaintiff submitted the motion for permission to withdraw the pliant against the subsidiary and the Court granted such permission and struck the case out of the case-list of the Court.

## 5. ACQUISITION OF BUSINESSES

On August 8, 2018, the Group entered into the Shares Purchase Agreement to acquire 74% share of Siam Mitsui PTA Company Limited, Purified Terephthalic Acid producer, and 74% share of Thai PET Resin Company Limited, Polyethylene Terephthalate resin producer, directly and indirectly, from SCG Chemicals Co., Ltd. and Mitsui Chemicals, Inc. Subsequently on December 27, 2018, the Group completed the share acquisition of subsidiaries for a preliminary cash consideration of approximately Baht 4,123 million. The final purchase price was settled with the seller for an additional payment of approximately Baht 1,249 million, which already paid in March 2019.

Management believes that the acquisition is harmonised with the business strategy of the Company that intends to expand the downstream investment and increase market potential in polymer business to satisfy customer's need.

The purchase under this condition is in accordance with TFRS 3 Business Combinations, requires the recognition of assets, liabilities and contingent liabilities acquired at the acquisition date at fair value. The Group is in process of hiring an independent appraiser to determine the fair value of assets and liabilities acquired during the measurement period, which must not exceed one year from the acquisition date to reflect new information obtained about facts and circumstances that existed as of the acquisition date. Accordingly, the fair value of assets acquired and liabilities assumed have been provisionally determined at the acquisition date (the value of property, plant and equipment determined by independent assets appraiser).

However, the fair value of assets acquired and liabilities have been already completed. Therefore, the fair value of assets acquired and liabilities have been adjusted and a gain on bargain purchase of Baht 31 million has been recognised in the consolidated income statement for the year ended December 31, 2019.

The following summarises the major classes of consideration transferred, and the recognised amounts of assets acquired and liabilities assumed at the acquisition date:

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Identifiable assets acquired and liabilities assumed as at December 31, 2018:

|   | <i>Notes</i> | <b>Fair values<br/>(in million Baht)</b> |
|---|--------------|--|
| Cash and cash equivalents                                       |              | 1,589                                    |
| Trade receivables   |              | 2,481                                    |
| Inventories   |              | 2,201                                    |
| Property, plant and equipment                                   | 15           | 9,549                                    |
| Intangible assets   | 18           | 8  |
| Trade payables  |              | (2,777)                                  |
| Other payables  |              | (183)                                    |
| Long-term borrowings from financial institutions                |              | (750)                                    |
| Deferred tax  | 19           | (584)                                    |
| Other assets/(liabilities), net                                 |              | (2,444)                                  |
| <b>Net identifiable assets acquired and liabilities assumed</b> |              | <b>9,090</b>                             |
| Non-controlling interest acquired                               |              | (2,363)                                  |
| <b>Net assets acquired and liabilities assumed</b>              |              | <b>6,727</b>                             |
| Gain on bargain purchase  |              | (1,355)                                  |
| <b>Total consideration</b>                                      |              | <b>5,372</b>                             |
| Cash acquired   |              | (1,589)                                  |
| <b>Net consideration</b>  |              | <b>3,783</b>                             |

### *Acquisition-related costs*

The Group incurred acquisition-related costs of Baht 110 million related to external legal fees and due diligence costs. The legal fees and due diligence costs have been included in administrative expenses in the Group's consolidated statement of income in the period which transaction occurred.

## 6. CASH AND CASH EQUIVALENTS

6.1 Cash and cash equivalents as at December 31, 2019 and 2018 consist of:

|  | Unit : Million Baht         |                             |                             |                             |
|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
|  | <u>Consolidated</u>         |                             | <u>Separate</u>             |                             |
|  | <u>financial statements</u> | <u>financial statements</u> | <u>financial statements</u> | <u>financial statements</u> |
|  | <u>2019</u>                 | <u>2018</u>                 | <u>2019</u>                 | <u>2018</u>                 |
| Cash on hand   | 2                           | 76                          | 2                           | 2                           |
| Cash and highly liquid current investments (Private funds) | 62                          | 533                         | 62                          | 533                         |
| Cash at banks - current accounts                           | 822                         | 1,679                       | 5                           | 4                           |
| Cash at banks - savings accounts                           | 13,091                      | 16,037                      | 9,283                       | 10,978                      |
| Cash at banks - foreign accounts                           | 2,321                       | 1,624                       | 1,546                       | 322                         |
| Highly liquid current investments                          | 2,542                       | 16,795                      | 1,499                       | 15,303                      |
| <b>Total</b>   | <b>18,840</b>               | <b>36,744</b>               | <b>12,397</b>               | <b>27,142</b>               |

As at December 31, 2019 and 2018, bank accounts of two subsidiaries totalling Baht 60 million and Baht 192 million, respectively, are pledged as collateral to secure credit facilities obtained from financial institutions. However, the pledged bank accounts can be withdrawn in accordance with the objective and conditions stipulated in the loan agreements for use as working capital required in the normal course of business (see Note 20).

6.2 Non-cash transactions:

Reconciliation of liabilities arising from financing activities

The table below details changes in the liabilities arising from financing activities, including both cash and non-cash changes.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

As at December 31, 2019

Unit : Million Baht

|   | Consolidated financial statements |                          |                  |  |   |                                       |  |                       |              |                                 |
|---|-----------------------------------|--------------------------|------------------|--|---|---------------------------------------|--|-----------------------|--------------|---------------------------------|
|   | Balance as at January 1, 2019     | Net financing cash flows | Interest expense | Interest expense capitalised as part of fixed assets | Amortisation of deferred financing fees | Increase in finance lease liabilities | Amortisation of deferred interest from finance lease | Gain on exchange rate | Others       | Balance as at December 31, 2019 |
| Accrued interest expense                          | 706                               | (2,918)                  | 3,637            | (658)  | 93                                      | -                                     | -  | (14)                  | -            | 846                             |
| Finance lease liabilities                         | 320                               | (176)                    | -                | -  | -                                       | 250                                   | 7  | -                     | -            | 401                             |
| Short-term borrowings from financial institutions | 3,343                             | (1,281)                  | -                | -  | -                                       | -                                     | -  | (41)                  | -            | 2,021                           |
| Long-term borrowings from financial institutions  | 37,962                            | (2,847)                  | -                | -  | 39                                      | -                                     | -  | (552)                 | 24           | 34,626                          |
| Long-term borrowings from other parties           | 1,252                             | (27)                     | -                | -  | 3                                       | -                                     | -  | (71)                  | (847)        | 310                             |
| Debentures  | 54,350                            | 18,058                   | -                | -  | 47                                      | -                                     | -  | (2,324)               | -            | 70,131                          |
| <b>Total</b>                                      | <b>97,933</b>                     | <b>10,809</b>            | <b>3,637</b>     | <b>(658)</b>   | <b>182</b>                              | <b>250</b>                            | <b>7</b>   | <b>(3,002)</b>        | <b>(823)</b> | <b>108,335</b>                  |

As at December 31, 2018

Unit : Million Baht

|   | Consolidated financial statements |                          |                  |  |   |                                       |  |   |                       |                                 |
|---|-----------------------------------|--------------------------|------------------|--|---|---------------------------------------|--|---|-----------------------|---------------------------------|
|   | Balance as at January 1, 2018     | Net financing cash flows | Interest expense | Interest expense capitalised as part of fixed assets | Amortisation of deferred financing fees | Increase in finance lease liabilities | Amortisation of deferred interest from finance lease | Effect from acquisition of subsidiaries | Gain on exchange rate | Balance as at December 31, 2018 |
| Accrued interest expense                          | 726                               | (3,403)                  | 3,582            | (295)  | 97                                      | -                                     | -  | 2                                       | (3)                   | 706                             |
| Finance lease liabilities                         | 313                               | (153)                    | -                | -  | -                                       | 153                                   | 7  | -                                       | -                     | 320                             |
| Short-term borrowings from financial institutions | 263                               | 135                      | -                | -  | -                                       | -                                     | -  | 2,955                                   | (10)                  | 3,343                           |
| Long-term borrowings from financial institutions  | 41,113                            | (3,630)                  | -                | -  | 67                                      | -                                     | -  | 750                                     | (338)                 | 37,962                          |
| Long-term borrowings from other parties           | 1,810                             | (619)                    | -                | -  | 89                                      | -                                     | -  | -                                       | (28)                  | 1,252                           |
| Debentures  | 54,645                            | (82)                     | -                | -  | (129)                                   | -                                     | -  | -                                       | (84)                  | 54,350                          |
| <b>Total</b>                                      | <b>98,870</b>                     | <b>(7,752)</b>           | <b>3,582</b>     | <b>(295)</b>   | <b>124</b>                              | <b>153</b>                            | <b>7</b>   | <b>3,707</b>                            | <b>(463)</b>          | <b>97,933</b>                   |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

As at December 31, 2019

Unit : Million Baht

|  | Separate financial statements |                          |                  |  |   |                                       |  |                       | Balance as at December 31, 2019 |
|--|-------------------------------|--------------------------|------------------|--|---|---------------------------------------|--|-----------------------|---------------------------------|
|  | Balance as at January 1, 2019 | Net financing cash flows | Interest expense | Interest expense capitalised as part of fixed assets | Non-cash changes                        |                                       |  | Gain on exchange rate |                                 |
|  |                               |                          |                  |  | Amortisation of deferred financing fees | Increase in finance lease liabilities | Amortisation of deferred interest from finance lease |                       |                                 |
| Accrued interest expense                         | 715                           | (2,449)                  | 2,851            | (280)  | 26                                      | -                                     | -  | -                     | 863                             |
| Finance lease liabilities                        | 226                           | (122)                    | -                | -  | -                                       | 180                                   | 5  | -                     | 289                             |
| Short-term borrowings from related parties       | 1,931                         | 1,110                    | -                | -  | -                                       | -                                     | -  | -                     | 3,041                           |
| Long-term borrowings from financial institutions | 14,419                        | (4,280)                  | -                | -  | 5                                       | -                                     | -  | (71)                  | 10,073                          |
| Long-term borrowing from a related party         | 16,105                        | -                        | -                | -  | 18                                      | -                                     | -  | (1,132)               | 14,991                          |
| Debentures                                       | 38,321                        | 18,058                   | -                | -  | (7)                                     | -                                     | -  | (1,151)               | 55,221                          |
| <b>Total</b>                                     | <b>71,717</b>                 | <b>12,317</b>            | <b>2,851</b>     | <b>(280)</b>   | <b>42</b>                               | <b>180</b>                            | <b>5</b>   | <b>(2,354)</b>        | <b>84,478</b>                   |

As at December 31, 2018

Unit : Million Baht

|  | Separate financial statements |                          |                  |  |   |                                       |  |                              | Balance as at December 31, 2018 |
|--|-------------------------------|--------------------------|------------------|--|---|---------------------------------------|--|------------------------------|---------------------------------|
|  | Balance as at January 1, 2018 | Net financing cash flows | Interest expense | Interest expense capitalised as part of fixed assets | Non-cash changes                        |                                       |  | (Gain)/loss on exchange rate |                                 |
|  |                               |                          |                  |  | Amortisation of deferred financing fees | Increase in finance lease liabilities | Amortisation of deferred interest from finance lease |                              |                                 |
| Accrued interest expense                         | 698                           | (2,887)                  | 3,018            | (192)  | 78                                      | -                                     | -  | -                            | 715                             |
| Finance lease liabilities                        | 221                           | (122)                    | -                | -  | -                                       | 123                                   | 4  | -                            | 226                             |
| Short-term borrowings from related parties       | 2,558                         | (627)                    | -                | -  | -                                       | -                                     | -  | -                            | 1,931                           |
| Long-term borrowings from financial institutions | 21,259                        | (6,793)                  | -                | -  | 5                                       | -                                     | -  | (52)                         | 14,419                          |
| Long-term borrowing from a related party         | -                             | 16,473                   | -                | -  | (68)                                    | -                                     | -  | (300)                        | 16,105                          |
| Debentures                                       | 54,645                        | (16,453)                 | -                | -  | 83                                      | -                                     | -  | 46                           | 38,321                          |
| <b>Total</b>                                     | <b>79,381</b>                 | <b>(10,409)</b>          | <b>3,018</b>     | <b>(192)</b>   | <b>98</b>                               | <b>123</b>                            | <b>4</b>   | <b>(306)</b>                 | <b>71,717</b>                   |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

### 7. TRADE RECEIVABLES

Trade receivables as at December 31, 2019 and 2018 consist of:

|   | <i>Note</i> | <u>Consolidated</u>         |               | <u>Unit : Million Baht</u> |               |
|---|-------------|-----------------------------|---------------|----------------------------|---------------|
|   |             | <u>financial statements</u> |               | <u>Separate</u>            |               |
|   |             | <u>2019</u>                 | <u>2018</u>   | <u>2019</u>                | <u>2018</u>   |
| Related parties                             | 27          | 16,721                      | 17,601        | 22,433                     | 25,708        |
| Other parties                               |             | 17,485                      | 24,433        | 5,705                      | 9,144         |
| <b>Total</b>                                |             | <b>34,206</b>               | <b>42,034</b> | <b>28,138</b>              | <b>34,852</b> |
| <u>Less</u> Allowance for doubtful accounts |             | <u>(49)</u>                 | <u>(43)</u>   | <u>(19)</u>                | <u>(19)</u>   |
| <b>Total trade receivables</b>              |             | <b>34,157</b>               | <b>41,991</b> | <b>28,119</b>              | <b>34,833</b> |

Trade receivables as at December 31, 2019 and 2018 are classified by aging as follows:

|   | <u>Consolidated</u>         |               | <u>Unit : Million Baht</u> |               |
|---|-----------------------------|---------------|----------------------------|---------------|
|   | <u>financial statements</u> |               | <u>Separate</u>            |               |
|   | <u>2019</u>                 | <u>2018</u>   | <u>2019</u>                | <u>2018</u>   |
| <b>Related parties</b>                          |                             |               |                            |               |
| Within credit terms                             | 16,705                      | 17,579        | 22,428                     | 25,271        |
| Overdue   |                             |               |                            |               |
| - less than 3 months                            | 16                          | 21            | 5                          | 437           |
| - over 3 months but less than 6 months          | -                           | 1             | -                          | -             |
| - over 6 months but less than 12 months         | -                           | -             | -                          | -             |
| - over than 12 months                           | -                           | -             | -                          | -             |
| <b>Total trade receivables, related parties</b> | <b>16,721</b>               | <b>17,601</b> | <b>22,433</b>              | <b>25,708</b> |
| <b>Other parties</b>                            |                             |               |                            |               |
| Within credit terms                             | 16,980                      | 23,798        | 5,684                      | 9,125         |
| Overdue   |                             |               |                            |               |
| - less than 3 months                            | 453                         | 589           | 2                          | -             |
| - over 3 months but less than 6 months          | 8                           | 2             | -                          | -             |
| - over 6 months but less than 12 months         | 6                           | 7             | -                          | -             |
| - over than 12 months                           | 38                          | 37            | 19                         | 19            |
|   | 17,485                      | 24,433        | 5,705                      | 9,144         |
| <u>Less</u> Allowance for doubtful accounts     | <u>(49)</u>                 | <u>(43)</u>   | <u>(19)</u>                | <u>(19)</u>   |
| <b>Total trade receivables, other parties</b>   | <b>17,436</b>               | <b>24,390</b> | <b>5,686</b>               | <b>9,125</b>  |
| <b>Total trade receivables</b>                  | <b>34,157</b>               | <b>41,991</b> | <b>28,119</b>              | <b>34,833</b> |

The normal credit term granted by the Group ranges from 14 days to 90 days.

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

### 8. OTHER RECEIVABLES

Other receivables as at December 31, 2019 and 2018 consist of:

|  | <u>Consolidated</u>         |                     | <u>Unit : Million Baht</u> |                     |
|--|-----------------------------|---------------------|----------------------------|---------------------|
|  | <u>financial statements</u> |                     | <u>Separate</u>            |                     |
|  | <u>2019</u>                 | <u>2018</u>         | <u>2019</u>                | <u>2018</u>         |
| Prepaid expenses                       | 1,358                       | 1,503               | 747                        | 947                 |
| Receivable from oil hedging contracts  | 417                         | 436                 | 417                        | 436                 |
| Accrued income                         | 216                         | 488                 | 305                        | 560                 |
| Other receivables                      | 579                         | 693                 | 578                        | 697                 |
| Receivable from The Revenue Department | 367                         | 117                 | 222                        | -                   |
| Others                                 | 212                         | 388                 | 46                         | 137                 |
| <b>Total</b>                           | <b><u>3,149</u></b>         | <b><u>3,625</u></b> | <b><u>2,315</u></b>        | <b><u>2,777</u></b> |

### 9. INVENTORIES

Inventories as at December 31, 2019 and 2018 consist of:

|   | <u>Consolidated</u>         |                       | <u>Unit : Million Baht</u> |                       |
|---|-----------------------------|-----------------------|----------------------------|-----------------------|
|   | <u>financial statements</u> |                       | <u>Separate</u>            |                       |
|   | <u>2019</u>                 | <u>2018</u>           | <u>2019</u>                | <u>2018</u>           |
| Finished goods  | 14,078                      | 15,551                | 9,405                      | 10,574                |
| Work in progress  | 1,618                       | 1,823                 | 992                        | 1,266                 |
| Raw materials   | 9,387                       | 8,870                 | 8,095                      | 7,147                 |
| Factory supplies and spare parts                                  | 10,406                      | 9,992                 | 8,113                      | 7,834                 |
| Goods in transit  | 1,221                       | 4,750                 | 49                         | 3,701                 |
| <b>Total</b>  | <b><u>36,710</u></b>        | <b><u>40,986</u></b>  | <b><u>26,654</u></b>       | <b><u>30,522</u></b>  |
| <u>Less</u> Allowance for decline in value                        | (303)                       | (1,366)               | (240)                      | (1,330)               |
| Allowance for obsolescence  | (155)                       | (254)                 | (33)                       | (87)                  |
| <b>Net</b>  | <b><u>36,252</u></b>        | <b><u>39,366</u></b>  | <b><u>26,381</u></b>       | <b><u>29,105</u></b>  |
| Inventories recognised as an expense in 'cost of sales of goods': |                             |                       |                            |                       |
| - Cost  | 389,752                     | 462,756               | 339,857                    | 416,495               |
| - (Reversal of) write-down to net realisable value                | (1,061)                     | 1,347                 | (1,090)                    | 1,330                 |
| <b>Net</b>  | <b><u>388,691</u></b>       | <b><u>464,103</u></b> | <b><u>338,767</u></b>      | <b><u>417,825</u></b> |

As at December 31, 2019 and 2018, the Company's inventories included petroleum legal reserve of 302 million liters with approximated value of Baht 4,072 million and 341 million liters with approximated value of Baht 4,752 million, respectively.

### 10. INVESTMENTS IN SUBSIDIARIES

Movements of investments in subsidiaries for the years ended December 31, were as follows:

| <i>Subsidiaries</i>       | <u>Unit : Million Baht</u> |                      |
|---------------------------|----------------------------|----------------------|
|                           | <u>Separate</u>            |                      |
|                           | <u>2019</u>                | <u>2018</u>          |
| As at January 1,          | 67,783                     | 56,859               |
| Acquisition               | 4,833                      | 11,694               |
| Capital distribution      | (2)                        | (41)                 |
| Allowance for impairment  | (63)                       | (729)                |
| <b>As at December 31,</b> | <b><u>72,551</u></b>       | <b><u>67,783</u></b> |

# NOTES TO THE FINANCIAL STATEMENTS

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Investments in subsidiaries as at December 31, 2019 and 2018, and dividend income for the years ended December 31, 2019 and 2018 were as follows:

| Subsidiaries  | Ownership Interest (%)        |      | Paid-up capital |               | Cost          |               | Impairment      |                 | At cost-net   |               | Fair value of listed securities |              | Dividend income |              |
|---|-------------------------------|------|-----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|---------------------------------|--------------|-----------------|--------------|
|   | 2019                          | 2018 | 2019            | 2018          | 2019          | 2018          | 2019            | 2018            | 2019          | 2018          | 2019                            | 2018         | 2019            | 2018         |
|   | Separate financial statements |      |                 |               |               |               |                 |                 |               |               |                                 |              |                 |              |
| Global Green Chemicals Plc.   | 72                            | 72   | 10,237          | 10,237        | 7,400         | 7,400         | -               | -               | 7,400         | 7,400         | 9,324                           | 7,289        | 111             | 148          |
| GC Glycol Co., Ltd.   | 100                           | 100  | 5,395           | 5,395         | 5,395         | 5,395         | -               | -               | 5,395         | 5,395         | -                               | -            | 432             | 1,079        |
| GC Polyols Co., Ltd.  | 82                            | 82   | 2,692           | 1,281         | 2,210         | 1,052         | -               | -               | 2,210         | 1,052         | -                               | -            | -               | -            |
| GC Marketing Solutions Co., Ltd.  | 99                            | 99   | 40              | 40            | 451           | 451           | -               | -               | 451           | 451           | -                               | -            | 40              | 21           |
| GC Maintenance and Engineering Co., Ltd.                                    | 100                           | 100  | 137             | 137           | 155           | 155           | -               | -               | 155           | 155           | -                               | -            | 128             | -            |
| GC Logistics Solutions Co., Ltd.  | 99                            | 99   | 1,200           | 1,200         | 1,607         | 1,607         | -               | -               | 1,607         | 1,607         | -                               | -            | 30              | -            |
| GC Ventures Co., Ltd.   | 100                           | 100  | 465             | 144           | 465           | 144           | -               | -               | 465           | 144           | -                               | -            | -               | -            |
| GC Treasury Center Co., Ltd.  | 100                           | 100  | 10              | 10            | 10            | 10            | -               | -               | 10            | 10            | -                               | -            | -               | -            |
| GC Styrenics Co., Ltd.  | 100                           | 100  | 190             | 190           | 190           | 190           | -               | -               | 190           | 190           | -                               | -            | -               | -            |
| GC Oxirane Co., Ltd.  | 100                           | 100  | 5,267           | 2,392         | 5,267         | 2,392         | -               | -               | 5,267         | 2,392         | -                               | -            | -               | -            |
| GC-M PTA Company Limited (Formerly Siam Mtiisui PTA Co., Ltd.)              | 49                            | 49   | 4,800           | 4,800         | 2,903         | 2,903         | -               | -               | 2,903         | 2,903         | -                               | -            | -               | -            |
| GC Estate Co., Ltd.   | 100                           | 100  | 7,200           | 7,200         | 7,200         | 7,200         | -               | -               | 7,200         | 7,200         | -                               | -            | -               | -            |
| Solution Creation Co., Ltd.   | 100                           | 100  | 524             | 183           | 524           | 183           | -               | -               | 524           | 183           | -                               | -            | -               | -            |
| Thai Tank Terminal Limited  | 51                            | 51   | 900             | 900           | 459           | 459           | -               | -               | 459           | 459           | -                               | -            | 535             | 542          |
| Bio Spectrum Co., Ltd. (Liquidation process finalized in January 2019)      | -                             | 100  | -               | 146           | -             | 96            | -               | -               | -             | 1             | -                               | -            | -               | -            |
| PTT Phenol Co., Ltd.  | 100                           | 100  | 11,851          | 11,851        | 13,155        | 13,155        | -               | (95)            | 13,155        | 13,155        | -                               | -            | 1,390           | 1,122        |
| Auria Bio Chemicals Co., Ltd. (Liquidation process finalized in April 2019) | -                             | 54   | -               | 90            | -             | 8             | -               | (7)             | -             | 1             | -                               | -            | -               | -            |
| NPC Safety and Environmental Service Co., Ltd.                              | 100                           | 100  | 165             | 165           | 165           | 165           | -               | -               | 165           | 165           | -                               | -            | -               | -            |
| PTTGC America Corporation   | 100                           | 100  | -               | -             | 4,407         | 4,361         | -               | -               | 4,407         | 4,361         | -                               | -            | -               | -            |
| PTTGC International Private Limited   | 100                           | 100  | 30,877          | 30,785        | 30,877        | 30,785        | (10,289)        | (10,226)        | 20,588        | 20,559        | -                               | -            | -               | -            |
| <b>Total investments in subsidiaries</b>                                    |                               |      | <b>82,840</b>   | <b>78,111</b> | <b>82,840</b> | <b>78,111</b> | <b>(10,289)</b> | <b>(10,328)</b> | <b>72,551</b> | <b>67,783</b> | <b>9,324</b>                    | <b>7,289</b> | <b>2,666</b>    | <b>2,192</b> |

Unit : Million Baht

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## *Change in investments in subsidiaries*

On March 14, 2019, Solution Creation Co., Ltd. has called for paid-up capital from the capital increase from the Company following the Extraordinary General Meeting of shareholders of the subsidiary held on January 11, 2019 to invest in Revolve Group Limited at Baht 340.90 million, of which received in March 2019.

On May 8, 2019, PTTGC International Private Limited has called for paid-up capital from the capital increase by the Board of Directors' Meeting of the Company held on April 29, 2019 for the purpose of corporate and its subsidiary operation at SGD 3.92 million or equivalent to Baht 91.89 million, of which fully received in May 2019.

On August 28, 2019, PTTGC America Corporation has called for paid-up capital from the capital increase by the Board of Directors' Meeting of the Company held on July 15, 2016 for the purpose of US Petrochemical Complex Project investment at USD 1.50 million or equivalent to Baht 46.24 million, of which fully received in September 2019.

During the year ended December 31, 2019, GC Ventures Co., Ltd. has called for paid-up capital from the capital increase by the Annual General Meeting of shareholders of the subsidiary held on March 25, 2019, for investment in Corporate Venture Capital (CVC) at Baht 320.76 million, of which fully received during the year ended December 31, 2019.

During the year ended December 31, 2019, GC Polyols Co., Ltd. has called for paid-up capital from the capital increase by the Board of Directors' Meeting of the Company held on November 14, 2018 for conducting a Polyols & PU System Project at Baht 1,158.12 million, of which fully received during the year ended December 31, 2019.

During the year ended December 31, 2019, GC Oxirane Co., Ltd. has called for paid-up capital from the capital increase by the Board of Directors' Meeting of the Company held on October 5, 2017 for conducting a Propylene Oxide Project at Baht 2,875.60 million, of which fully received during the year ended December 31, 2019.

On January 7, 2019, Bio Spectrum Co., Ltd. distributed capital to the Company amounting to Baht 1.40 million. On March 31, 2016, such subsidiary registered the dissolution with Department of Business Development, Ministry of Commerce and finalized the liquidation process on January 18, 2019.

On March 26, 2019, Auria BioChemicals Co., Ltd. distributed capital to the Company amounting to Baht 0.52 million. On April 25, 2018, such subsidiary registered the dissolution with Department of Business Development, Ministry of Commerce and finalized the liquidation process on April 4, 2019.

On January 11, 2018, Solution Creation Co., Ltd. has called for paid capital from the capital increase by the Extraordinary General Meeting of shareholders of the subsidiary held on September 4, 2017 to invest in TPBI & Myanmar Star Co., Ltd. at Baht 16.75 million, of which fully received in January 2018.

At the Board of Directors' Meeting of the Company held on December 18, 2017, the Board approved to establish GC Estate Co., Ltd. which is 100% shareholding by the Company, for developing estate for rent to invest in petrochemical and related industries. Subsequently on January 23, 2018, GC Estate Co., Ltd. registered the initial authorised share capital of Baht 1.01 million and called for paid-up capital of 10,100 shares at Baht 100 per share, totalling Baht 1.01 million, of which fully received in January 2018. Subsequently, at the Annual General Meeting of shareholders of the subsidiary held on March 21, 2018, the shareholders approved to increase the registered capital to Baht 1,300 million and called for paid-up capital of 12.99 million shares at Baht 100 per share, totalling Baht 1,298.99 million, of which fully received in March 2018. Subsequently, at the Extraordinary General Meeting of shareholders of the subsidiary held on June 20, 2018, the shareholders approved to increase the registered capital to Baht 7,200 million and called for paid-up capital of 59 million shares at Baht 100 per share, totalling Baht 5,900 million, of which fully received in June 2018.

On March 22, 2018, GC Treasury Center Co., Ltd. has called for paid capital from the capital increase by the Annual General Meeting of shareholders of the subsidiary held on March 21, 2018 at 75,000 shares, Baht 100 per share, totalling Baht 7.50 million, of which fully received in January 2018.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

At the Board of Directors' Meeting of the Company held on May 21, 2018, the Board approved to establish GC Ventures Co., Ltd. ("GCV") for investment in Corporate Venture Capital (CVC) which is 100% owned by the Company. On May 22, 2018, GCV registered the initial authorised share capital of Baht 5 million and called for paid-up capital of 0.05 million shares at Baht 100 per share, totalling Baht 5 million, of which fully received in May 2018. Subsequently, at the Annual General Meeting of shareholders of the subsidiary held on June 8, 2018, the shareholders approved to increase the registered capital to Baht 144 million and called for paid-up capital of 1.39 million shares at Baht 100 per share, totalling Baht 139 million, of which fully received in June 2018.

On August 31, 2018, PTTGC International Private Limited has called for paid capital from the capital increase by the Board of Directors' Meeting held on November 20, 2009 for the purpose of corporate and its subsidiary operation at SGD 1.12 million or equivalent to Baht 27.15 million, of which fully received in August 2018.

On November 8, 2018, GC Oxirane Co., Ltd. has called for paid capital from the capital increase by the Board of Directors' Meeting held on May 22, 2017 for conducting a Propylene Oxide Project at Baht 179.73 million, of which fully received in December 2018.

On August 8, 2018, the Company and a subsidiary entered into the Shares Purchase Agreement to acquire 74% share (49% direct interest and 25% indirect interest) of Siam Mitsui PTA Company Limited, Purified Terephthalic Acid producer, and 74% share (74% indirect interest) of Thai PET Resin Company Limited, Polyethylene Terephthalate resin producer, from SCG Chemicals Co., Ltd. and Mitsui Chemicals, Inc. Subsequently on December 27, 2018, the Group completed the share acquisition of subsidiaries for a preliminary cash consideration of approximately Baht 4,123 million. The final purchase price was settled with the seller for an additional payment of approximately Baht 1,249 million, which was paid in March 2019.

During the year ended December 31, 2018, PTTGC International Private Limited has called for paid-up capital from the capital increase by the Board of Directors' Meeting held on December 18, 2017 to invest in PTTGC Innovation America Corp. at USD 25 million or equivalent to Baht 790.71 million, to finance the loan prepayment in order to reduce the Group's finance cost and for subsidiary operation, of which fully received during the year ended December 31, 2018.

During the year ended December 31, 2018, GC Polyols Co., Ltd. has called for paid-up capital from the capital increase by the Board of Directors' Meeting of the Company held on May 22, 2017 for conducting a Polyols & PU System Project at Baht 425.69 million, of which fully received during the year ended December 31, 2018.

On April 25, 2018, Auria BioChemicals Co., Ltd. which is a subsidiary of the Company registered the dissolution with Department of Business Development, Ministry of Commerce. Subsequently on December 19, 2018, Auria BioChemicals Co., Ltd. distributed capital to the Company amounting to Baht 40.77 million. As at December 31, 2018, the aforementioned subsidiary is in the liquidation process.

## *Impairment loss on investment in a subsidiary*

During the year ended December 31, 2019, the Company recognised impairment loss on the investment in PTTGC International Private Limited totalling Baht 63.05 million in the separate financial statements as the recoverable amount of investment in PTTGC Innovation America Corp. was less than its carrying amount.

During the year ended December 31, 2018, the Company recognised impairment loss on the investment in PTTGC International Private Limited totalling Baht 729.56 million in the separate financial statements. Impairment loss Baht 727.65 million as the recoverable amount of investment in PTTGC Innovation America Corp. was less than its carrying amount. Impairment loss on investment resulted from the capital increase to finance the loan prepayment in order to reduce the Group's finance cost and impairment loss Baht 1.91 million as the recoverable amount of investment in PTT Chemical International (Asia Pacific ROH) Limited ("AP ROH") was less than its carrying amount due to the dissolution of AP ROH. On November 30, 2016, AP ROH registered the dissolution with Department of Business Development, Ministry of Commerce. AP ROH has finalized the liquidation process on November 30, 2018.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## 11. INVESTMENTS IN JOINT VENTURES

Movements of investments in joint ventures for the years ended December 31, were as follows:

|   | <u>Consolidated</u>         |                      | <u>Unit : Million Baht</u> |                      |
|---|-----------------------------|----------------------|----------------------------|----------------------|
|   | <u>financial statements</u> |                      | <u>Separate</u>            |                      |
|   | <u>2019</u>                 | <u>2018</u>          | <u>2019</u>                | <u>2018</u>          |
| <b>Joint ventures</b>                                     |                             |                      |                            |                      |
| As at January 1,  | 30,758                      | 27,577               | 15,373                     | 15,373               |
| Acquisitions  | 794                         | -                    | -                          | -                    |
| Share of profit of investments in joint ventures          | 2,626                       | 5,209                | -                          | -                    |
| Share of other comprehensive loss of joint ventures       | (532)                       | (374)                | -                          | -                    |
| Effect from translation differences on foreign investment | 165                         | -                    | -                          | -                    |
| Dividend income   | (1,367)                     | (1,654)              | -                          | -                    |
| <b>As at December 31,</b>                                 | <b><u>32,444</u></b>        | <b><u>30,758</u></b> | <b><u>15,373</u></b>       | <b><u>15,373</u></b> |

# NOTES TO THE FINANCIAL STATEMENTS

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Investments in joint ventures as at December 31, 2019 and 2018, and dividend income for the years ended December 31, 2019 and 2018 were as follows:

|  | Consolidated financial statements |      |                 |               |               |               |               |               |            |          | Unit : Million Baht |                     |              |                 |      |
|--|-----------------------------------|------|-----------------|---------------|---------------|---------------|---------------|---------------|------------|----------|---------------------|---------------------|--------------|-----------------|------|
|  | Ownership Interest (%)            |      | Paid-up capital |               | Cost          |               | Equity method |               | Impairment |          |                     | Equity method - net |              | Dividend income |      |
|  | 2019                              | 2018 | 2019            | 2018          | 2019          | 2018          | 2019          | 2018          | 2019       | 2018     |                     | 2019                | 2018         | 2019            | 2018 |
| <b>Direct joint ventures</b>               |                                   |      |                 |               |               |               |               |               |            |          |                     |                     |              |                 |      |
| PTT Asahi Chemical Co., Ltd.               | 50                                | 50   | 13,819          | 13,819        | 996           | 996           | 10,878        | 9,569         | -          | -        | 10,878              | 9,569               | -            | -               |      |
| PTT MCC Biochem Co., Ltd.                  | 50                                | 50   | 1,860           | 1,860         | 160           | 160           | 168           | 206           | -          | -        | 168                 | 206                 | -            | -               |      |
| HMC Polymers Co., Ltd.                     | 41                                | 41   | 3,790           | 3,790         | 14,217        | 14,217        | 12,337        | 12,885        | -          | -        | 12,337              | 12,885              | 828          | 1,242           |      |
|  |                                   |      | <b>15,373</b>   | <b>15,373</b> | <b>15,373</b> | <b>15,373</b> | <b>23,383</b> | <b>22,660</b> | <b>-</b>   | <b>-</b> | <b>23,383</b>       | <b>22,660</b>       | <b>828</b>   | <b>1,242</b>    |      |
| <b>Indirect joint ventures</b>             |                                   |      |                 |               |               |               |               |               |            |          |                     |                     |              |                 |      |
| Thai Ethoxylate Co., Ltd.                  | 50                                | 50   | 420             | 420           | 210           | 210           | 585           | 736           | -          | -        | 585                 | 736                 | 223          | 91              |      |
| Emery Oleochemicals (M) Sdn. Bhd.          | 50                                | 50   | 4,530           | 4,530         | 4,966         | 4,966         | 4,495         | 4,519         | -          | -        | 4,495               | 4,519               | -            | -               |      |
| Emery Specialty Chemicals Sdn. Bhd.        | 50                                | 50   | 818             | 818           | 407           | 407           | -             | -             | -          | -        | -                   | -                   | -            | -               |      |
| Nature Works LLC                           | 50                                | 50   | 43,167          | 43,167        | 4,793         | 4,793         | 3,274         | 2,843         | -          | -        | 3,274               | 2,843               | 316          | 321             |      |
| GGC KTIS Broindustrial Company Limited     | 50                                | -    | -               | -             | 524           | -             | 512           | -             | -          | -        | 512                 | -                   | -            | -               |      |
| Revolve Group Limited                      | 49                                | -    | -               | -             | 270           | -             | 195           | -             | -          | -        | 195                 | -                   | -            | -               |      |
|  |                                   |      | <b>11,170</b>   | <b>10,376</b> | <b>10,376</b> | <b>10,376</b> | <b>9,061</b>  | <b>8,098</b>  | <b>-</b>   | <b>-</b> | <b>9,061</b>        | <b>8,098</b>        | <b>539</b>   | <b>412</b>      |      |
| <b>Total investments in joint ventures</b> |                                   |      | <b>26,543</b>   | <b>25,749</b> | <b>25,749</b> | <b>30,758</b> | <b>32,444</b> | <b>30,758</b> | <b>-</b>   | <b>-</b> | <b>32,444</b>       | <b>30,758</b>       | <b>1,367</b> | <b>1,654</b>    |      |

## NOTES TO THE FINANCIAL STATEMENTS

### PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Unit : Million Baht

|  | <u>Separate financial statements</u> |             |                        |             |               |               |                   |             |                      |               |                        |              |
|--|--------------------------------------|-------------|------------------------|-------------|---------------|---------------|-------------------|-------------|----------------------|---------------|------------------------|--------------|
|  | <u>Ownership Interest (%)</u>        |             | <u>Paid-up capital</u> |             | <u>Cost</u>   |               | <u>Impairment</u> |             | <u>At cost - net</u> |               | <u>Dividend income</u> |              |
|  | <u>2019</u>                          | <u>2018</u> | <u>2019</u>            | <u>2018</u> | <u>2019</u>   | <u>2018</u>   | <u>2019</u>       | <u>2018</u> | <u>2019</u>          | <u>2018</u>   | <u>2019</u>            | <u>2018</u>  |
| <i>Joint ventures</i>                      |                                      |             |                        |             |               |               |                   |             |                      |               |                        |              |
| PTT Asahi Chemical Co., Ltd.               | 50                                   | 50          | 13,819                 | 13,819      | 996           | 996           | -                 | -           | 996                  | 996           | -                      | -            |
| PTT MCC Biochem Co., Ltd.                  | 50                                   | 50          | 1,860                  | 1,860       | 160           | 160           | -                 | -           | 160                  | 160           | -                      | -            |
| HMC Polymers Co., Ltd.                     | 41                                   | 41          | 3,790                  | 3,790       | 14,217        | 14,217        | -                 | -           | 14,217               | 14,217        | 828                    | 1,242        |
| <b>Total investments in joint ventures</b> |                                      |             |                        |             | <b>15,373</b> | <b>15,373</b> | <b>-</b>          | <b>-</b>    | <b>15,373</b>        | <b>15,373</b> | <b>828</b>             | <b>1,242</b> |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

### Joint ventures

The following table summarises the financial information of the joint ventures as included in their own financial statements, adjusted for fair value adjustments at acquisition and differences in accounting policies. The table also reconciles the summarised financial information to the carrying amount of the Group's interest in these companies.

|   | <u>PTT Asahi</u><br><u>Chemical Co., Ltd.</u> | <u>Unit : Million Baht</u><br><u>HMC Polymers</u><br><u>Co., Ltd.</u> |
|---|---|---|
| <b>For the year ended December 31, 2019</b>                           |   |   |
| <b>Statement of profit or loss</b>                                    |   |   |
| Revenue   | 13,141  | 27,033  |
| Depreciation and amortisation   | (866)   | (1,579)   |
| Loss for the year   | 2,617   | 1,627   |
| Other comprehensive loss  | -   | (951)   |
| <b>Total comprehensive income for the year</b>                        | <b><u>2,617</u></b>                           | <b><u>676</u></b>   |
| <b>As at December 31, 2019</b>  |   |   |
| <b>Statement of financial position</b>                                |   |   |
| Current assets  | 5,158   | 7,510   |
| Non-current assets  | 21,186  | 25,481  |
| Current liabilities   | (1,428)                                       | (5,365)   |
| Non-current liabilities   | (3,160)                                       | (5,186)   |
| <b>Net assets</b>   | <b><u>21,756</u></b>                          | <b><u>22,440</u></b>  |
| Proportion of the Group's ownership interest<br>in joint ventures (%) | <u>50.00</u>                                  | <u>41.44</u>  |
|   | 10,878  | 9,299   |
| Investment amount over net asset at acquisition date                  | -   | 3,038   |
| <b>Carrying amount of interest in investee</b>                        | <b><u>10,878</u></b>                          | <b><u>12,337</u></b>  |
| <i>Remark:</i>  |   |   |
| Cash and cash equivalents   | 854   | 1,344   |

The reconciliation of the summarised financial information to the carrying amount of the Group's interest in these companies.

|  | <u>PTT Asahi</u><br><u>Chemical Co., Ltd.</u> | <u>Unit : Million Baht</u><br><u>HMC Polymers</u><br><u>Co., Ltd.</u> |
|--|---|---|
| Group's interest in net assets of investee<br>as at January 1, 2019        | 9,569   | 12,885  |
| Total comprehensive income attributable to the Group                       | 1,309   | 280   |
| Dividends received during the year   | -   | (828)   |
| <b>Carrying amount of interest in investee<br/>as at December 31, 2019</b> | <b><u>10,878</u></b>                          | <b><u>12,337</u></b>  |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## Immaterial joint ventures

The summarised financial information for the Group's interest in immaterial joint ventures based on the amounts reported in the Group's consolidated financial statements:

|   | <b>Unit : Million Baht</b>   |
|---|------------------------------|
|   | <b><u>Immaterial</u></b>     |
|   | <b><u>joint ventures</u></b> |
| <b>For the year ended December 31, 2019</b>               |                              |
| Carrying amount of interests in immaterial joint ventures | 9,229                        |
| Group's share of:   |                              |
| - Profit for the year                                     | 643                          |
| - Other comprehensive income                              | 28                           |
| - Total comprehensive income for the year                 | 671                          |

## Change in investments in joint ventures

On March 26, 2019, Solution Creation Co., Ltd., a subsidiary, acquired 49% of shares of Revolve Group Limited ("RGL") from previous shareholder and by subscription of newly issued shares of RGL. The subsidiary paid for the share purchase totalling pound sterling 6.4 million or equivalent to Baht 269.54 million according to Share Sale and Subscription Agreement. The investment is harmonised with the Company's business strategy that intends to expand the investment toward downstream and enhance the value chain of performance chemicals products.

On December 19, 2018, the Board of Directors' Meeting of the GGC Biochemicals Co., Ltd. ("GGC Bio"), an indirect subsidiary, approved to establish GGC KTIS Bioindustrial Company Limited ("GKBI") as a joint venture company in which share capital were held by GGC Bio as 50% and KTIS Bioethanol Company Limited as 50%. The purpose of the joint venture company is to invest in Nakhonsawan Biocomplex Project ("NBC"). On January 11, 2019, GKBI registered the establishment with registered capital of 10,000 shares at Baht 100 per share amounting to Baht 1 million and called for paid-up capital of 5,000 shares at Baht 100 per share, totalling Baht 0.50 million from GGC Bio. During the year ended December 31, 2019, GKBI registered for capital increase totalling 25,990,000 shares at Baht 100 per share amounting to Baht 2,599 million and called for paid-up capital of 2,645,000 shares at Baht 100 per share amounting to Baht 264.50 million with 10,350,000 shares at Baht 25 per share amounting to Baht 258.75 million from GGC Bio. GKBI had fully received such share subscription.

## 12. INVESTMENTS IN ASSOCIATES

Movements of investments in associates for the years ended December 31, were as follows:

|   | <b>Unit : Million Baht</b>         |                      |                                    |                     |
|---|------------------------------------|----------------------|------------------------------------|---------------------|
|   | <b><u>Consolidated</u></b>         |                      | <b><u>Separate</u></b>             |                     |
|   | <b><u>financial statements</u></b> |                      | <b><u>financial statements</u></b> |                     |
|   | <b><u>2019</u></b>                 | <b><u>2018</u></b>   | <b><u>2019</u></b>                 | <b><u>2018</u></b>  |
| <b>Associates</b>   |                                    |                      |                                    |                     |
| As at January 1,  | 15,450                             | 14,002               | 9,793                              | 9,323               |
| Acquisition   | 17,020                             | 489                  | 17,020                             | 470                 |
| Disposal  | (212)                              | -                    | -                                  | -                   |
| Share of profit of investments in associates  | 1,933                              | 1,686                | -                                  | -                   |
| Share of other comprehensive income (loss)<br>of investments in associates                      | (385)                              | 5                    | -                                  | -                   |
| Effect from translation differences on foreign<br>investment                                    | (13)                               | -                    | -                                  | -                   |
| Dividend income   | (875)                              | (732)                | -                                  | -                   |
| Difference arising from the change in the<br>ownership interest in an investment <sup>(1)</sup> | (3,408)                            | -                    | -                                  | -                   |
| Interests in equity of associate  | 319                                | -                    | -                                  | -                   |
| <b>As at December 31,</b>   | <b><u>29,829</u></b>               | <b><u>15,450</u></b> | <b><u>26,813</u></b>               | <b><u>9,793</u></b> |

# NOTES TO THE FINANCIAL STATEMENTS

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Investments in associates as at December 31, 2019 and 2018, and dividend income for the years ended December 31, 2019 and 2018 were as follows:

|   | Consolidated financial statements |      |                 |               |               |               |               |               |            |      | Unit : Million Baht |                     |            |                 |      |
|---|-----------------------------------|------|-----------------|---------------|---------------|---------------|---------------|---------------|------------|------|---------------------|---------------------|------------|-----------------|------|
|   | Ownership Interest (%)            |      | Paid-up capital |               | Cost          |               | Equity method |               | Impairment |      |                     | Equity method - net |            | Dividend income |      |
|   | 2019                              | 2018 | 2019            | 2018          | 2019          | 2018          | 2019          | 2018          | 2019       | 2018 |                     | 2019                | 2018       | 2019            | 2018 |
| <b>Direct associates</b>                |                                   |      |                 |               |               |               |               |               |            |      |                     |                     |            |                 |      |
| Global Power Synergy Plc.               | 23                                | 23   | 28,197          | 14,983        | 22,753        | 5,934         | 22,599        | 8,756         | -          | -    | 22,599              | 8,756               | 443        | 426             |      |
| Kuraray GC Advanced Materials Co., Ltd. | 33                                | 33   | 2,008           | 1,408         | 671           | 470           | 629           | 470           | -          | -    | 629                 | 470                 | -          | -               |      |
| PTT Energy Solutions Co., Ltd.          | 20                                | 20   | 150             | 150           | 30            | 30            | 42            | 48            | -          | -    | 42                  | 48                  | -          | -               |      |
| PTT Digital Solutions Co., Ltd.         | 40                                | 40   | 150             | 150           | 60            | 60            | 824           | 703           | -          | -    | 824                 | 703                 | 35         | 33              |      |
| Vinythai Plc.                           | 25                                | 25   | 7,111           | 7,111         | 3,297         | 3,297         | 5,642         | 5,130         | -          | -    | 5,642               | 5,130               | 385        | 266             |      |
| Eastern Fluid Transport Co., Ltd.       | 23                                | 23   | 10              | 10            | 2             | 2             | 16            | 20            | -          | -    | 16                  | 20                  | 12         | 7               |      |
|   |                                   |      | <b>26,813</b>   |               | <b>29,752</b> | <b>9,793</b>  | <b>29,752</b> | <b>15,127</b> |            |      | <b>29,752</b>       | <b>15,127</b>       | <b>875</b> | <b>732</b>      |      |
| <b>Indirect associates</b>              |                                   |      |                 |               |               |               |               |               |            |      |                     |                     |            |                 |      |
| PT. Indo Thai Trading                   | -                                 | 49   | -               | 255           | -             | 124           | -             | 220           | -          | -    | -                   | 220                 | -          | -               |      |
| Thai Eastern Top Seeds Oil Co., Ltd.    | 30                                | 30   | 222             | 222           | 67            | 67            | 28            | 57            | -          | -    | 28                  | 57                  | -          | -               |      |
| S.P. Petpaek Inter Group Co., Ltd.      | 25                                | 25   | 200             | 200           | 50            | 50            | 49            | 46            | -          | -    | 49                  | 46                  | -          | -               |      |
|   |                                   |      | <b>117</b>      |               | <b>241</b>    |               | <b>77</b>     | <b>323</b>    |            |      | <b>77</b>           | <b>323</b>          |            |                 |      |
| <b>Total investments in associates</b>  |                                   |      | <b>26,930</b>   | <b>15,450</b> | <b>10,034</b> | <b>29,829</b> | <b>15,450</b> | <b>29,829</b> |            |      | <b>29,829</b>       | <b>15,450</b>       | <b>875</b> | <b>732</b>      |      |

# NOTES TO THE FINANCIAL STATEMENTS

## PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Unit : Million Baht

|   | Separate financial statements |      |                 |               |               |              |            |          |               |              |                                 |               |                 |            |
|---|-------------------------------|------|-----------------|---------------|---------------|--------------|------------|----------|---------------|--------------|---------------------------------|---------------|-----------------|------------|
|   | Ownership Interest (%)        |      | Paid-up capital |               | Cost          |              | Impairment |          | At cost - net |              | Fair value of listed securities |               | Dividend income |            |
|   | 2019                          | 2018 | 2019            | 2018          | 2019          | 2018         | 2019       | 2018     | 2019          | 2018         | 2019                            | 2018          | 2019            | 2018       |
| <i>Associates</i>                       |                               |      |                 |               |               |              |            |          |               |              |                                 |               |                 |            |
| Global Power Synergy Plc.               | 23                            | 23   | 28,197          | 14,983        | 22,753        | 5,934        | -          | -        | 22,753        | 5,934        | 54,959                          | 19,923        | 443             | 426        |
| Kuraray GC Advanced Materials Co., Ltd. | 33                            | 33   | 2,008           | 1,408         | 671           | 470          | -          | -        | 671           | 470          | -                               | -             | -               | -          |
| PTT Energy Solutions Co., Ltd.          | 20                            | 20   | 150             | 150           | 30            | 30           | -          | -        | 30            | 30           | -                               | -             | -               | -          |
| PTT Digital Solutions Co., Ltd.         | 40                            | 40   | 150             | 150           | 60            | 60           | -          | -        | 60            | 60           | -                               | -             | 35              | 33         |
| Vinythai Plc.                           | 25                            | 25   | 7,111           | 7,111         | 3,297         | 3,297        | -          | -        | 3,297         | 3,297        | 7,475                           | 5,921         | 385             | 266        |
| Eastern Fluid Transport Co., Ltd.       | 15                            | 15   | 10              | 10            | 2             | 2            | -          | -        | 2             | 2            | -                               | -             | 8               | 5          |
| <b>Total investments in associates</b>  |                               |      | <b>26,813</b>   | <b>26,813</b> | <b>26,813</b> | <b>9,793</b> | <b>-</b>   | <b>-</b> | <b>26,813</b> | <b>9,793</b> | <b>62,434</b>                   | <b>25,844</b> | <b>871</b>      | <b>730</b> |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## Associates

The following table summarises the financial information of the associate as included in its own financial statements, adjusted for fair value adjustments at acquisition and differences in accounting policies. The table also reconciles the summarised financial information to the carrying amount of the Group's interest in the associate.

|   | <b>Unit : Million Baht</b> |
|---|----------------------------|
|   | <b><u>Global Power</u></b> |
|   | <b><u>Synergy Plc.</u></b> |
| <b>For the year ended December 31, 2019</b>                   |                            |
| <b>Statement of income</b>                                    |                            |
| Revenue   | 65,789                     |
| Profit for the year   | 3,893                      |
| Other comprehensive loss                                      | (1,452)                    |
| <b>Total comprehensive income for the year</b>                | <b><u>2,411</u></b>        |
| <b>As at December 31, 2019</b>                                |                            |
| <b>Statement of financial position</b>                        |                            |
| Current assets  | 38,760                     |
| Non-current assets  | 212,952                    |
| Current liabilities   | (39,055)                   |
| Non-current liabilities                                       | (103,949)                  |
| <b>Net assets</b>   | <b><u>108,708</u></b>      |
| Non-controlling interests                                     | (9,283)                    |
| <b>Total attributions to owners of the parent</b>             | <b><u>99,425</u></b>       |
| Proportion of the Group's ownership interest in associate (%) | <u>22.73</u>               |
| <b>Carrying amount of interest in investee</b>                | <b><u>22,599</u></b>       |
| <i>Remark:</i>  |                            |
| Cash and cash equivalents                                     | 18,839                     |

The reconciliation of the summarised financial information to the carrying amount of the Group's interest in this associate.

|  | <b>Unit : Million Baht</b> |
|--|----------------------------|
|  | <b><u>Global Power</u></b> |
|  | <b><u>Synergy Plc.</u></b> |
| Group's interest in net assets of investee as at January 1, 2019                             | 8,756                      |
| Total comprehensive income attributable to the Group   | 556                        |
| Dividends received during the year   | (443)                      |
| Acquisition  | 16,819                     |
| Difference arising from the change in the ownership interest in an investment <sup>(1)</sup> | (3,408)                    |
| Invests in equity of associate   | 319                        |
| <b>Carrying amount of interest in investee as at December 31, 2019</b>                       | <b><u>22,599</u></b>       |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## *Immaterial associates*

The summarised financial information for the Group's interest in immaterial associates based on the amounts reported in the Group's consolidated financial statements:

|   | <b>Unit : Million Baht</b> |
|---|----------------------------|
|   | <b><u>Immaterial</u></b>   |
|   | <b><u>associates</u></b>   |
| <b>For the year ended December 31, 2019</b>           |                            |
| Carrying amount of interests in immaterial associates | 7,230                      |
| Group's share of:                                     |                            |
| - Profit for the year                                 | 1,049                      |
| - Other comprehensive loss                            | (69)                       |
| - Total comprehensive income for the year             | 980                        |

## *Change in investment in associates*

On August 28, 2019, the Extraordinary General Meeting No.1/2019 of Global Power Synergy Plc. ("GPSC") passed a resolution approving the registered capital increase of GPSC by issuing 1,321,428,571 ordinary shares, with a par value of Baht 10 per share amounting to Baht 13,214,285,710. From the original registered capital amounting to Baht 14,983,008,000 to a new registered capital amounting to Baht 28,197,293,710, and GPSC had received such share subscription amounting to Baht 13,214,285,670. On October 9, 2019, GPSC has already registered the change of registered capital and, on September 26, 2019, GPSC called for paid-up capital from the capital increase in the number proportionate to its shareholding GPSC of 300,344,470 shares at Baht 56 per share, totalling Baht 16,819.29 million, of which fully received in October 2019.

On November 18, 2019, Kuraray GC Advanced Materials Co., Ltd. ("KGC"), a direct associate of the Group, has called for paid-up capital from the capital increase of 2,004,000 shares at Baht 100 per share, totalling Baht 200.40 million, of which fully received in December 2019.

On August 14, 2018, Thai Eastern Top Seeds Oil Co., Ltd, an indirect associate of the Group, called for paid-up capital from the capital increase of 665,999 shares at Baht 29.89 per share, totalling Baht 19.91 million, of which fully received in September 2018.

At the Board of Directors' Meeting of the Company held on June 18, 2018, the Board approved to establish KGC as a joint venture company. The purpose of the joint venture company is planned to invest in production of specialty chemicals. The Company will hold 33.4% share while Kuraray Co., Ltd (KRR) and Sumitomo Corporation (SC) will hold indirect share via KRR and SC Affiliate Company by 53.3% and 13.3%, respectively. Subsequently on June 19, 2018, KGC registered the initial authorised share capital of Baht 10 million and called for paid-up capital of 33,400 shares at Baht 100 per share, totalling Baht 3.34 million. Subsequently, on August 28, 2018, KGC had called for paid - up capital from the capital increase of 4,667,650 shares at Baht 100 per share, totalling Baht 466.77 million, of which fully received in December 2018.

According to the Board of Directors' Meeting of the Company held on March 19, 2018, the Board of Directors approved the PTTGC International Private Limited ("GC Inter") as a subsidiary to sell shares of PT Indo Thai Trading Ltd. ("ITT") holding 49% of ITT's shares. On June 26, 2019, GC Inter entered into the Sale and Purchase Agreement with a company to sell shares of ITT. Subsequently, on July 31, 2019, GC Inter transferred the shares amounting to USD 7.02 million or equivalent to Baht 215.56 million (using the average exchange rates as of the transaction date).

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

<sup>(1)</sup> *Difference arising from the change in the ownership interest in an investment*

GPSC had completed Tender Offer for shares of Glow Energy Public Company Limited (“GLOW”) on May 22, 2019 and December 2, 2019. In 2019, GPSC has made payment for shares to minority shareholders of totalling Baht 40,806.27 million. GPSC therefore directly and indirectly held 99.83%, increased from 69.11%, of the total authorised and paid-up shares. GPSC recognised the negative movement from change in ownership interest of Baht 14,991.99 million in its shareholders’ equity as at December 31, 2019. The Company therefore recognised this transaction as the difference arising from the change in the ownership interest in an investment, according to its shareholding interest in GPSC of 22.73%, amounting to Baht 3,407.68 million in shareholders’ equity.

### 13. OTHER INVESTMENTS

Other investments as at December 31, 2019 and 2018 consisted of:

|  | <b>Consolidated</b>         |               | <b>Unit : Million Baht</b> |               |
|--|-----------------------------|---------------|----------------------------|---------------|
|  | <b>financial statements</b> |               | <b>Separate</b>            |               |
|  | <b>2019</b>                 | <b>2018</b>   | <b>2019</b>                | <b>2018</b>   |
| <b>Temporary investments</b>                       |                             |               |                            |               |
| Held-to-maturities debt securities                 | 6,175                       | 10,503        | 3,500                      | 3,696         |
| Available-for-sale debt securities                 | -                           | 1,108         | -                          | 1,108         |
| Available-for-sale debt securities (Private funds) | 545                         | 5,207         | 545                        | 5,207         |
| <b>Total temporary investments</b>                 | <b>6,720</b>                | <b>16,818</b> | <b>4,045</b>               | <b>10,011</b> |
| <b>Other long-term investments</b>                 |                             |               |                            |               |
| Held-to-maturities debt securities                 | 480                         | 484           | 450                        | 484           |
| Available-for-sale debt securities                 | -                           | 1,369         | -                          | 1,369         |
| Available-for-sale debt securities (Private funds) | 1,503                       | 4,588         | 1,503                      | 4,588         |
| Available-for-sale equity securities               | 384                         | 362           | 384                        | 362           |
| Other non-marketable equity securities:            |                             |               |                            |               |
| - Exeltium SAS (4% shareholding by the Group)      | 238                         | 283           | -                          | -             |
| - Others   | 306                         | 60            | 4                          | 3             |
| <b>Total other long-term investments</b>           | <b>2,911</b>                | <b>7,146</b>  | <b>2,341</b>               | <b>6,806</b>  |

During the third quarter of 2016, the Company established private funds and engaged local independent assets management companies for the purpose of cash balance management of the Company. Those private funds have invested in deposits at bank and debt securities which had high liquidity and credit quality. As at December 31, 2019 and 2018, the value of private funds outstanding totalled Baht 2,127 million and Baht 10,388 million, respectively.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## 14. INVESTMENT PROPERTIES

Investment properties as at December 31, 2019 and 2018 consisted of:

|  | <i>Note</i> | <u>Consolidated<br/>financial statements</u> |                  |              | <u>Unit : Million Baht<br/>Separate<br/>financial statements</u> |
|--|-------------|--|------------------|--------------|--|
|  |             | <u>Land</u>                                  | <u>Buildings</u> | <u>Total</u> | <u>Land</u>  |
| <i>Cost</i>  |             |  |                  |              |  |
| As at January 1, 2018                                  |             | 5,482  | 41               | 5,523        | -  |
| Reclassification                                       | 41          | 977  | -                | 977          | 1,741  |
| <b>As at December 31, 2018 and<br/>January 1, 2019</b> |             | <b>6,459</b>                                 | <b>41</b>        | <b>6,500</b> | <b>1,741</b>   |
| <b>As at December 31, 2019</b>                         |             | <b>6,459</b>                                 | <b>41</b>        | <b>6,500</b> | <b>1,741</b>   |
| <i>Accumulated depreciation</i>                        |             |  |                  |              |  |
| As at January 1, 2018                                  |             | -  | -                | -            | -  |
| Depreciation charge for the year                       |             | -  | (1)              | (1)          | -  |
| <b>As at December 31, 2018 and<br/>January 1, 2019</b> |             | <b>-</b>                                     | <b>(1)</b>       | <b>(1)</b>   | <b>-</b>   |
| Depreciation charge for the year                       |             | -  | (1)              | (1)          | -  |
| <b>As at December 31, 2019</b>                         |             | <b>-</b>                                     | <b>(2)</b>       | <b>(2)</b>   | <b>-</b>   |
| <i>Net book value</i>                                  |             |  |                  |              |  |
| As at January 1, 2018                                  |             | 5,482  | 41               | 5,523        | -  |
| <b>As at December 31, 2018 and<br/>January 1, 2019</b> |             | <b>6,459</b>                                 | <b>40</b>        | <b>6,499</b> | <b>1,741</b>   |
| <b>As at December 31, 2019</b>                         |             | <b>6,459</b>                                 | <b>39</b>        | <b>6,498</b> | <b>1,741</b>   |

The fair value of investment properties of the Group as at December 31, 2019 of Baht 8,435 million (2018: Baht 7,728 million) was determined at open market values on an existing use basis and income approach. The fair value measurement for investment properties has been categorised as Levels 2 and 3 fair value, respectively.

The fair value of investment properties of the Company as at December 31, 2019 of Baht 3,700 million (2018: Baht 3,700 million) was determined at open market values on an existing use basis. The fair value measurement for investment properties has been categorised as a Level 2 fair value.

### Measurement of fair value

#### Fair value hierarchy

The fair value of investment properties was determined by independent external property valuers, having appropriate recognised professional qualifications and recent experience in the property being valued. The independent valuers provide the fair value of the Group's investment properties portfolio on an annual basis.

#### Valuation technique and significant unobservable inputs

The fair value of investment properties for land was determined by independent property valuers at open market values by scoring and weighted other different factors.

The fair value of investment properties for buildings was determined by the Group at income approach. The significant unobservable inputs comprise yield rate and finance costs.

Amounts recognised in the statements of profit or loss that are related to investment properties for the years ended December 31, are as follows:

|               | <u>Consolidated<br/>financial statements</u> |             | <u>Unit : Million Baht<br/>Separate<br/>financial statements</u> |             |
|---------------|--|-------------|--|-------------|
|               | <u>2019</u>                                  | <u>2018</u> | <u>2019</u>  | <u>2018</u> |
| Rental income | 122  | 13          | 162  | -           |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES  
FOR THE YEAR ENDED DECEMBER 31, 2019

### 15. PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment as at December 31, 2019 and 2018 consist of:

|  | <u>Notes</u> | <u>Consolidated financial statements</u> |  |  |   |                 | <u>Total</u>  |                                  |
|--|--------------|--|--|--|---|-----------------|---------------|----------------------------------|
|  |              | <u>Land and land improvement</u>         | <u>Plant, machinery, equipment and factory tools</u> | <u>Buildings and buildings improvement</u> | <u>Furniture, fixtures and office equipment</u> | <u>Vehicles</u> |               | <u>Assets under construction</u> |
| <b>Cost</b>  |              |  |  |  |   |                 |               |                                  |
| As at January 1, 2018                              |              | 9,074                                    | 339,710  | 16,834                                     | 2,579   | 842             | 21,949        | 390,988                          |
| Additions  |              | 1,864                                    | 521  | 123  | 252   | 54              | 30,227        | 33,041                           |
| Acquired through business acquisitions             | 5            | 1,959                                    | 7,309  | 205  | 6   | -               | 70            | 9,549                            |
| Transfers  |              | 358                                      | 10,468   | 518  | 140   | -               | (11,160)      | 324                              |
| Reclassifications                                  | 41           | (977)                                    | 9,062  | -  | -   | -               | -             | 8,085                            |
| Disposals  |              | -  | (2,062)  | (2)  | (177)   | (15)            | (69)          | (2,325)                          |
| Effect of change in foreign exchange rates         |              | (15)                                     | (481)  | (64)                                       | (2)   | -               | (51)          | (613)                            |
| <b>As at December 31, 2018 and January 1, 2019</b> |              | <b>12,263</b>                            | <b>364,527</b>                                       | <b>17,614</b>                              | <b>2,798</b>                                    | <b>881</b>      | <b>40,966</b> | <b>439,049</b>                   |
| Additions  |              | 76                                       | 2,073  | 37   | 300   | 251             | 30,837        | 33,574                           |
| Transfers  |              | 41                                       | 10,458   | 406  | 91  | 1               | (11,057)      | (60)                             |
| Disposals  |              | -  | (3,918)  | (8)  | (204)   | (168)           | (18)          | (4,316)                          |
| Effect of change in exchange rates                 |              | (111)                                    | (980)  | (130)                                      | (11)  | -               | (458)         | (1,690)                          |
| <b>As at December 31, 2019</b>                     |              | <b>12,269</b>                            | <b>372,160</b>                                       | <b>17,919</b>                              | <b>2,974</b>                                    | <b>965</b>      | <b>60,270</b> | <b>466,557</b>                   |

Unit : Million Baht

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

|  | <u>Consolidated financial statements</u> |  |  |  |   |                 | Unit : Million Baht                  |                  |
|--|--|--|--|--|---|-----------------|--------------------------------------|------------------|
|  | <u>Note</u>                              | <u>Land and<br/>land<br/>improvement</u> | <u>Plant,<br/>machinery,<br/>equipment<br/>and factory<br/>tools</u> | <u>Buildings and<br/>buildings<br/>improvement</u> | <u>Furniture,<br/>fixtures and<br/>office<br/>equipment</u> | <u>Vehicles</u> | <u>Assets under<br/>construction</u> | <u>Total</u>     |
| <i>Accumulated depreciation and allowance for impairment</i> |  |  |  |  |   |                 |                                      |                  |
| As at January 1, 2018  |  | (1,288)                                  | (158,903)  | (7,070)  | (1,882)   | (592)           | (1,564)                              | (171,299)        |
| Depreciation charge for the year                             |  | (86)                                     | (15,925)   | (717)  | (296)   | (66)            | -                                    | (17,090)         |
| Transfers  |  | -  | (7)  | -  | -   | -               | -                                    | (7)              |
| Reclassification   | 41                                       | -  | (2,776)  | -  | -   | -               | -                                    | (2,776)          |
| Disposals  |  | -  | 1,287  | (13)   | 171   | 13              | -                                    | 1,458            |
| Reversal of impairment losses                                |  | -  | 739  | 14   | -   | -               | -                                    | 753              |
| Effect of change in foreign exchange rates                   |  | 4  | 206  | 22   | 1   | -               | 9                                    | 242              |
| <b>As at December 31, 2018 and<br/>January 1, 2019</b>       |  | <b>(1,370)</b>                           | <b>(175,379)</b>   | <b>(7,764)</b>                                     | <b>(2,006)</b>  | <b>(645)</b>    | <b>(1,555)</b>                       | <b>(188,719)</b> |
| Depreciation charge for the year                             |  | (99)                                     | (16,937)   | (727)  | (327)   | (98)            | -                                    | (18,188)         |
| Transfers  |  | -  | (25)   | -  | -   | (2)             | -                                    | (27)             |
| Disposals  |  | -  | 3,875  | 4  | 191   | 168             | -                                    | 4,238            |
| Reversal of impairment losses                                |  | 3  | -  | -  | -   | -               | -                                    | 3                |
| Effect of change in foreign exchange rates                   |  | 38                                       | 508  | 53   | 9   | -               | 91                                   | 699              |
| <b>As at December 31, 2019</b>                               |  | <b>(1,428)</b>                           | <b>(187,958)</b>   | <b>(8,434)</b>                                     | <b>(2,133)</b>  | <b>(577)</b>    | <b>(1,464)</b>                       | <b>(201,994)</b> |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Unit : Million Baht

## Consolidated financial statements

|  | <u>Land and<br/>land<br/>improvement</u> | <u>Plant,<br/>machinery,<br/>equipment<br/>and factory<br/>tools</u> | <u>Buildings and<br/>buildings<br/>improvement</u> | <u>Furniture,<br/>fixtures and<br/>office<br/>equipment</u> | <u>Vehicles</u> | <u>Assets under<br/>construction</u> | <u>Total</u>   |
|--|--|--|--|---|-----------------|--------------------------------------|----------------|
| <i>Net book value</i>                              |  |  |  |   |                 |                                      |                |
| <b>As at January 1, 2018</b>                       |  |  |  |   |                 |                                      |                |
| Owned assets                                       | 7,786                                    | 180,807  | 9,764  | 539   | 110             | 20,385                               | 219,391        |
| Assets under finance leases                        | -  | -  | -  | 158   | 140             | -                                    | 298            |
|  | <b>7,786</b>                             | <b>180,807</b>   | <b>9,764</b>                                       | <b>697</b>  | <b>250</b>      | <b>20,385</b>                        | <b>219,689</b> |
| <b>As at December 31, 2018 and January 1, 2019</b> |  |  |  |   |                 |                                      |                |
| Owned assets                                       | 10,893                                   | 189,148  | 9,850  | 618   | 109             | 39,411                               | 250,029        |
| Assets under finance leases                        | -  | -  | -  | 174   | 127             | -                                    | 301            |
|  | <b>10,893</b>                            | <b>189,148</b>   | <b>9,850</b>                                       | <b>792</b>  | <b>236</b>      | <b>39,411</b>                        | <b>250,330</b> |
| <b>As at December 31, 2019</b>                     |  |  |  |   |                 |                                      |                |
| Owned assets                                       | 10,841                                   | 184,202  | 9,485  | 587   | 266             | 58,806                               | 264,187        |
| Assets under finance leases                        | -  | -  | -  | 254   | 122             | -                                    | 376            |
|  | <b>10,841</b>                            | <b>184,202</b>   | <b>9,485</b>                                       | <b>841</b>  | <b>388</b>      | <b>58,806</b>                        | <b>264,563</b> |

The gross amount of the Group's fully depreciated buildings and equipment that was still in use as at December 31, 2019 amounted to Baht 20,213 million (2018: Baht 17,947 million).

### Security

As at December 31, 2019, the Group's assets with a net book value of Baht 15,837 million (2018: Baht 17,069 million) were registered to secure Bank loan (see note 20).

### Property, plant and equipment under construction

As at December 31, 2019, capitalised borrowing costs relating to the acquisition of the land and the construction of the new factory amounted to Baht 735 million (2018: Baht 504 million), with a capitalisation rate of 3.59% to 5.00% (2018: 3.38% to 5.00%).

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES  
FOR THE YEAR ENDED DECEMBER 31, 2019

|  | <i>Cost</i> | <u>Note</u> | <u>Land and land improvement</u> | <u>Plant, machinery, equipment and factory tools</u> | <u>Buildings and buildings improvement</u> | <u>Furniture, fixtures and office equipment</u> | <u>Vehicles</u> | <u>Assets under construction</u> | <u>Total</u>     | Unit : Million Baht |
|--|-------------|-------------|----------------------------------|--|--|---|-----------------|----------------------------------|------------------|---------------------|
|  |             |             |                                  |  |  |   |                 |                                  |                  |                     |
| As at January 1, 2018                              |             |             | 6,279                            | 265,675  | 9,309                                      | 1,637   | 539             | 12,649                           | 296,088          |                     |
| Additions  |             |             | 291                              | 523  | 28   | 168   | 21              | 17,420                           | 18,451           |                     |
| Transfers  |             |             | 69                               | 8,947  | 370  | 106   | -               | (9,502)                          | (10)             |                     |
| Reclassifications                                  |             | 41          | (1,741)                          | 6,896  | -  | -   | -               | -                                | 5,155            |                     |
| Disposals  |             |             | -                                | (929)  | (3)  | (169)   | (3)             | (64)                             | (1,168)          |                     |
| <b>As at December 31, 2018 and January 1, 2019</b> |             |             | <b>4,898</b>                     | <b>281,112</b>                                       | <b>9,704</b>                               | <b>1,742</b>                                    | <b>557</b>      | <b>20,503</b>                    | <b>318,516</b>   |                     |
| Additions  |             |             | 20                               | 1,703  | 33   | 225   | 227             | 17,907                           | 20,115           |                     |
| Transfers  |             |             | 34                               | 6,481  | 64   | 50  | -               | (6,659)                          | (30)             |                     |
| Disposals  |             |             | -                                | (2,696)  | (3)  | (124)   | (146)           | (15)                             | (2,984)          |                     |
| <b>As at December 31, 2019</b>                     |             |             | <b>4,952</b>                     | <b>286,600</b>                                       | <b>9,798</b>                               | <b>1,893</b>                                    | <b>638</b>      | <b>31,736</b>                    | <b>335,617</b>   |                     |
| <b>Accumulated depreciation</b>                    |             |             |                                  |  |  |   |                 |                                  |                  |                     |
| As at January 1, 2018                              |             |             | (537)                            | (123,780)  | (3,928)                                    | (1,196)   | (379)           | (270)                            | (130,090)        |                     |
| Depreciation charge for the year                   |             |             | (59)                             | (12,002)   | (398)                                      | (199)   | (38)            | -                                | (12,696)         |                     |
| Reclassification                                   |             | 41          | -                                | (2,316)  | -  | -   | -               | -                                | (2,316)          |                     |
| Disposals  |             |             | -                                | 907  | 3  | 163   | 3               | -                                | 1,076            |                     |
| <b>As at December 31, 2018 and January 1, 2019</b> |             |             | <b>(596)</b>                     | <b>(137,191)</b>                                     | <b>(4,323)</b>                             | <b>(1,232)</b>                                  | <b>(414)</b>    | <b>(270)</b>                     | <b>(144,026)</b> |                     |
| Depreciation charge for the year                   |             |             | (55)                             | (12,048)   | (406)                                      | (218)   | (68)            | -                                | (12,795)         |                     |
| Disposals  |             |             | -                                | 2,665  | 2  | 124   | 145             | -                                | 2,936            |                     |
| <b>As at December 31, 2019</b>                     |             |             | <b>(651)</b>                     | <b>(146,574)</b>                                     | <b>(4,727)</b>                             | <b>(1,326)</b>                                  | <b>(337)</b>    | <b>(270)</b>                     | <b>(153,885)</b> |                     |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Unit : Million Baht

## Separate financial statements

|  | <u>Land and land improvement</u> | <u>Plant, machinery, equipment and factory tools</u> | <u>Buildings and buildings improvement</u> | <u>Furniture, fixtures and office equipment</u> | <u>Vehicles</u> | <u>Assets under construction</u> | <u>Total</u>   |
|--|----------------------------------|--|--|---|-----------------|----------------------------------|----------------|
| <b>Net book value</b>                              |                                  |  |  |   |                 |                                  |                |
| <b>As at January 1, 2018</b>                       |                                  |  |  |   |                 |                                  |                |
| Owned assets                                       | 5,742                            | 141,895  | 5,381                                      | 318   | 67              | 12,379                           | 165,782        |
| Assets under finance leases                        | -                                | -  | -  | 123   | 93              | -                                | 216            |
|  | <u>5,742</u>                     | <u>141,895</u>                                       | <u>5,381</u>                               | <u>441</u>                                      | <u>160</u>      | <u>12,379</u>                    | <u>165,998</u> |
| <b>As at December 31, 2018 and January 1, 2019</b> |                                  |  |  |   |                 |                                  |                |
| Owned assets                                       | 4,302                            | 143,921  | 5,381                                      | 371   | 63              | 20,233                           | 174,271        |
| Assets under finance leases                        | -                                | -  | -  | 139   | 80              | -                                | 219            |
|  | <u>4,302</u>                     | <u>143,921</u>                                       | <u>5,381</u>                               | <u>510</u>                                      | <u>143</u>      | <u>20,233</u>                    | <u>174,490</u> |
| <b>As at December 31, 2019</b>                     |                                  |  |  |   |                 |                                  |                |
| Owned assets                                       | 4,301                            | 140,026  | 5,071                                      | 368   | 225             | 31,466                           | 181,457        |
| Assets under finance leases                        | -                                | -  | -  | 199   | 76              | -                                | 275            |
|  | <u>4,301</u>                     | <u>140,026</u>                                       | <u>5,071</u>                               | <u>567</u>                                      | <u>301</u>      | <u>31,466</u>                    | <u>181,732</u> |

The gross amount of the Company's fully depreciated buildings and equipment that was still in use as at December 31, 2019 amounted to Baht 12,612 million (2018: Baht 11,079 million).

*Property, plant and equipment under construction*

As at December 31, 2019, capitalised borrowing costs relating to the acquisition of the land and the construction of the new factory amounted to Baht 329 million (2018: Baht 192 million), with a capitalisation rate of 5.00% (2018: 5.00%).

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

### 16. LAND LEASEHOLD RIGHT

Land leasehold right as at December 31, 2019 and 2018 consist of:

|  | <u>Consolidated</u><br><u>financial statements</u> | Unit : Million Baht<br><u>Separate</u><br><u>financial statements</u> |
|--|--|---|
| <i>Cost</i>  |  |   |
| As at January 1, 2018                              | 1,131  | 1,130   |
| <b>As at December 31, 2018 and January 1, 2019</b> | <b>1,131</b>                                       | <b>1,130</b>  |
| Additions  | 7  | -   |
| <b>As at December 31, 2019</b>                     | <b>1,138</b>                                       | <b>1,130</b>  |
| <i>Accumulated amortisation</i>                    |  |   |
| As at January 1, 2018                              | (807)  | (806)   |
| Amortisation charge for the year                   | (90)   | (90)  |
| <b>As at December 31, 2018 and January 1, 2019</b> | <b>(897)</b>                                       | <b>(896)</b>  |
| Amortisation charge for the year                   | (50)   | (50)  |
| <b>As at December 31, 2019</b>                     | <b>(947)</b>                                       | <b>(946)</b>  |
| <i>Net book value</i>                              |  |   |
| As at January 1, 2018                              | 324  | 324   |
| <b>As at December 31, 2018 and January 1, 2019</b> | <b>234</b>   | <b>234</b>  |
| <b>As at December 31, 2019</b>                     | <b>191</b>   | <b>184</b>  |

### 17. GOODWILL

Goodwill as at December 31, 2019 and 2018 consist of:

|  | Unit : Million Baht<br><u>Consolidated</u><br><u>financial statements</u> |
|--|---|
| <i>Cost</i>  |   |
| As at January 1, 2018                              | 1,648   |
| <b>As at December 31, 2018 and January 1, 2019</b> | <b>1,648</b>  |
| <b>As at December 31, 2019</b>                     | <b>1,648</b>  |
| <i>Allowance for impairment</i>                    |   |
| As at January 1, 2018                              | (717)   |
| <b>As at December 31, 2018 and January 1, 2019</b> | <b>(717)</b>  |
| <b>As at December 31, 2019</b>                     | <b>(717)</b>  |
| <i>Net book value</i>                              |   |
| As at January 1, 2018                              | 931   |
| <b>As at December 31, 2018 and January 1, 2019</b> | <b>931</b>  |
| <b>As at December 31, 2019</b>                     | <b>931</b>  |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES  
FOR THE YEAR ENDED DECEMBER 31, 2019

### 18. INTANGIBLE ASSETS

Intangible assets as at December 31, 2019 and 2018 consist of:

| <i>Cost</i>  | <i>Note</i> | Consolidated financial statements |                   |   |                        |                     |                                     | Total         |
|--|-------------|-----------------------------------|-------------------|---|------------------------|---------------------|-------------------------------------|---------------|
|  |             | Production licence fees           | Computer software | Customer contracts and the related customer relationships | Right to use pipe rack | Right to use others | Intangible assets under development |               |
| As at January 1, 2018                              |             | 5,980                             | 4,210             | 149   | 508                    | 2,743               | 1,337                               | 14,927        |
| Additions  |             | 23                                | 58                | -   | 15                     | 6                   | 921                                 | 1,023         |
| Acquired through business acquisitions             | 5           | -                                 | 5                 | -   | -                      | 3                   | -                                   | 8             |
| Transfers  |             | 1,162                             | 348               | -   | 7                      | 5                   | (1,520)                             | 2             |
| Disposals  |             | -                                 | (7)               | -   | -                      | (191)               | -                                   | (198)         |
| Effect of change in foreign exchange rates         |             | -                                 | (5)               | (1)   | -                      | (63)                | (2)                                 | (71)          |
| <b>As at December 31, 2018 and January 1, 2019</b> |             | <b>7,165</b>                      | <b>4,609</b>      | <b>148</b>  | <b>530</b>             | <b>2,503</b>        | <b>736</b>                          | <b>15,691</b> |
| Additions  |             | 274                               | 19                | -   | -                      | 5                   | 733                                 | 1,031         |
| Transfers  |             | 268                               | 389               | -   | 17                     | 41                  | (703)                               | 12            |
| Disposals  |             | -                                 | (7)               | -   | -                      | -                   | (86)                                | (93)          |
| Effect of change in foreign exchange rates         |             | -                                 | (13)              | (11)  | -                      | (169)               | (3)                                 | (196)         |
| <b>As at December 31, 2019</b>                     |             | <b>7,707</b>                      | <b>4,997</b>      | <b>137</b>  | <b>547</b>             | <b>2,380</b>        | <b>677</b>                          | <b>16,445</b> |

Unit : Million Baht

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Unit : Million Baht

|  | <u>Consolidated financial statements</u> |                          |  |                               |                            | <u>Total</u>   |
|--|--|--------------------------|--|-------------------------------|----------------------------|----------------|
|  | <u>Production licence fees</u>           | <u>Computer Software</u> | <u>Customer contracts and the related customer relationships</u> | <u>Right to use pipe rack</u> | <u>Right to use others</u> |                |
| <i>Accumulated amortisation and allowance for impairment</i> |  |                          |  |                               |                            |                |
| As at January 1, 2018  | (2,355)                                  | (2,372)                  | (130)  | (358)                         | (1,922)                    | (7,159)        |
| Amortisation charge for the year                             | (243)                                    | (308)                    | (12)   | (29)                          | (127)                      | (719)          |
| Disposals  | -  | 7                        | -  | -                             | 105                        | 112            |
| Reversal of impairment losses                                | -  | -                        | -  | -                             | 86                         | 86             |
| Effect of change in foreign exchange rates                   | -  | 5                        | 2  | -                             | 37                         | 44             |
| <b>As at December 31, 2018</b>                               | <b>(2,598)</b>                           | <b>(2,668)</b>           | <b>(140)</b>   | <b>(387)</b>                  | <b>(1,821)</b>             | <b>(7,636)</b> |
| As at January 1, 2019  | (268)                                    | (342)                    | (7)  | (31)                          | (117)                      | (765)          |
| Amortisation charge for the year                             | -  | 4                        | -  | -                             | 22                         | 26             |
| Transfers  | -  | 5                        | -  | -                             | -                          | 5              |
| Disposal   | -  | 12                       | 10   | -                             | 124                        | 146            |
| Effect of change in foreign exchange rates                   | -  | -                        | -  | -                             | -                          | -              |
| <b>As at December 31, 2019</b>                               | <b>(2,866)</b>                           | <b>(2,989)</b>           | <b>(137)</b>   | <b>(418)</b>                  | <b>(1,792)</b>             | <b>(8,224)</b> |
| <i>Net book value</i>  |  |                          |  |                               |                            |                |
| As at January 1, 2018  | 3,625                                    | 1,838                    | 19   | 150                           | 821                        | 7,768          |
| As at December 31, 2018 and January 1, 2019                  | 4,567                                    | 1,941                    | 8  | 143                           | 682                        | 8,055          |
| As at December 31, 2019                                      | 4,841                                    | 2,008                    | -  | 129                           | 588                        | 8,221          |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Unit : Million Baht

|  | <u>Separate financial statements</u> |                          |                               |                            | <u>Intangible assets under development</u> | <u>Total</u>   |
|--|--------------------------------------|--------------------------|-------------------------------|----------------------------|--|----------------|
|  | <u>Production licence fees</u>       | <u>Computer software</u> | <u>Right to use pipe rack</u> | <u>Right to use others</u> |  |                |
| <b>Cost</b>  |                                      |                          |                               |                            |  |                |
| As at January 1, 2018                              | 4,120                                | 3,288                    | 415                           | -                          | 1,146                                      | 8,969          |
| Additions  | 10                                   | 22                       | 15                            | -                          | 730  | 777            |
| Transfers  | 1,162                                | 305                      | 4                             | -                          | (1,471)                                    | -              |
| Disposals  | -                                    | (6)                      | -                             | -                          | -  | (6)            |
| <b>As at December 31, 2018 and January 1, 2019</b> | <b>5,292</b>                         | <b>3,609</b>             | <b>434</b>                    | <b>-</b>                   | <b>405</b>                                 | <b>9,740</b>   |
| Additions  | 233                                  | 4                        | -                             | -                          | 545  | 782            |
| Transfers  | 267                                  | 219                      | 20                            | -                          | (506)                                      | -              |
| Disposals  | -                                    | -                        | -                             | -                          | (62)                                       | (62)           |
| <b>As at December 31, 2019</b>                     | <b>5,792</b>                         | <b>3,832</b>             | <b>454</b>                    | <b>-</b>                   | <b>382</b>                                 | <b>10,460</b>  |
| <b>Accumulated amortisation</b>                    |                                      |                          |                               |                            |  |                |
| As at January 1, 2018                              | (1,644)                              | (1,734)                  | (278)                         | -                          | (22)                                       | (3,678)        |
| Amortisation charge for the year                   | (189)                                | (248)                    | (27)                          | -                          | -  | (464)          |
| Disposals  | -                                    | 6                        | -                             | -                          | -  | 6              |
| <b>As at December 31, 2018 and January 1, 2019</b> | <b>(1,833)</b>                       | <b>(1,976)</b>           | <b>(305)</b>                  | <b>-</b>                   | <b>(22)</b>                                | <b>(4,136)</b> |
| Amortisation charge for the year                   | (214)                                | (273)                    | (28)                          | -                          | -  | (515)          |
| Disposals  | -                                    | -                        | -                             | -                          | -  | -              |
| <b>As at December 31, 2019</b>                     | <b>(2,047)</b>                       | <b>(2,249)</b>           | <b>(333)</b>                  | <b>-</b>                   | <b>(22)</b>                                | <b>(4,651)</b> |
| <b>Net book value</b>                              |                                      |                          |                               |                            |  |                |
| As at January 1, 2018                              | 2,476                                | 1,554                    | 137                           | -                          | 1,124                                      | 5,291          |
| As at December 31, 2018 and January 1, 2019        | 3,459                                | 1,633                    | 129                           | -                          | 383  | 5,604          |
| As at December 31, 2019                            | 3,745                                | 1,583                    | 121                           | -                          | 360  | 5,809          |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## 19. DEFERRED TAX

Movements in total deferred tax assets and liabilities during the years were as follows:

|                                 | <u>Consolidated financial statements</u>         |                                 |  |                                       |  | Unit : Million Baht                                |
|---------------------------------|--|---------------------------------|--|---------------------------------------|--|--|
|                                 | <u>(Charged) / credited to:</u>                  |                                 |  |                                       |  |  |
|                                 | <u>As at</u><br><u>January 1,</u><br><u>2019</u> | <u>Profit</u><br><u>or loss</u> | <u>Other</u><br><u>comprehensive</u><br><u>income (loss)</u> | <u>Exchange</u><br><u>differences</u> | <u>Acquisition</u><br><u>of businesses</u> | <u>As at</u><br><u>December 31,</u><br><u>2019</u> |
| <i>Deferred tax assets</i>      |  |                                 |  |                                       |  |  |
| Inventories                     | 12   | (8)                             | -  | -                                     | -  | 4  |
| Employee benefits expenses      | 725  | 262                             | 3  | -                                     | -  | 990  |
| Tax loss carry forward          | 848  | (143)                           | -  | -                                     | (1)  | 704  |
| Others                          | 647  | 77                              | 59   | -                                     | (3)  | 780  |
| <b>Total</b>                    | <b>2,232</b>                                     | <b>188</b>                      | <b>62</b>  | <b>-</b>                              | <b>(4)</b>                                 | <b>2,478</b>                                       |
| <i>Deferred tax liabilities</i> |  |                                 |  |                                       |  |  |
| Property, plant and equipment   | (3,469)  | (231)                           | -  | (11)                                  | 15   | (3,696)  |
| Finance lease assets            | (6)  | -                               | -  | -                                     | -  | (6)  |
| Others                          | (333)  | 172                             | (8)  | -                                     | 1  | (168)  |
| <b>Total</b>                    | <b>(3,808)</b>                                   | <b>(59)</b>                     | <b>(8)</b>   | <b>(11)</b>                           | <b>16</b>                                  | <b>(3,870)</b>                                     |
| <b>Net</b>                      | <b>(1,576)</b>                                   | <b>129</b>                      | <b>54</b>  | <b>(11)</b>                           | <b>12</b>                                  | <b>(1,392)</b>                                     |

|  | <u>Consolidated financial statements</u>         |                                 |  |                                       |  | Unit : Million Baht                                |
|--|--|---------------------------------|--|---------------------------------------|--|--|
|  | <u>(Charged) / credited to:</u>                  |                                 |  |                                       |  |  |
|  | <u>As at</u><br><u>January 1,</u><br><u>2018</u> | <u>Profit</u><br><u>or loss</u> | <u>Other</u><br><u>comprehensive</u><br><u>income (loss)</u> | <u>Exchange</u><br><u>differences</u> | <u>Acquisition</u><br><u>of businesses</u> | <u>As at</u><br><u>December 31,</u><br><u>2018</u> |
| <i>Deferred tax assets</i>             |  |                                 |  |                                       |  |  |
| Inventories                            | 10   | 1                               | -  | -                                     | 1  | 12   |
| Employee benefits expenses             | 688  | 18                              | -  | -                                     | 19   | 725  |
| Capital distribution from subsidiaries | 22   | (22)                            | -  | -                                     | -  | -  |
| Loss carry forward                     | 41   | 650                             | -  | (1)                                   | 158  | 848  |
| Others                                 | 610  | 18                              | -  | -                                     | 19   | 647  |
| <b>Total</b>                           | <b>1,371</b>                                     | <b>665</b>                      | <b>-</b>   | <b>(1)</b>                            | <b>197</b>                                 | <b>2,232</b>                                       |
| <i>Deferred tax liabilities</i>        |  |                                 |  |                                       |  |  |
| Property, plant and equipment          | (2,847)  | 146                             | -  | 9                                     | (777)                                      | (3,469)  |
| Finance lease assets                   | (7)  | 1                               | -  | -                                     | -  | (6)  |
| Others                                 | (48)   | (268)                           | (13)   | -                                     | (4)  | (333)  |
| <b>Total</b>                           | <b>(2,902)</b>                                   | <b>(121)</b>                    | <b>(13)</b>  | <b>9</b>                              | <b>(781)</b>                               | <b>(3,808)</b>                                     |
| <b>Net</b>                             | <b>(1,531)</b>                                   | <b>544</b>                      | <b>(13)</b>  | <b>8</b>                              | <b>(584)</b>                               | <b>(1,576)</b>                                     |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

|                                 | Unit : Million Baht                  |   |  |  |
|---------------------------------|--------------------------------------|---|--|--|
|                                 | <u>As at<br/>January 1,<br/>2019</u> | <u>Separate financial statements<br/>(Charged) / credited to:</u> |  | <u>As at<br/>December 31,<br/>2019</u> |
|                                 |                                      | <u>Profit<br/>or loss</u>   | <u>Other<br/>comprehensive<br/>income (loss)</u> |  |
| <b>Deferred tax assets</b>      |                                      |   |  |  |
| Inventories                     | 11                                   | (8)   | -  | 3                                      |
| Employee benefits expenses      | 584                                  | 207   | -  | 791                                    |
| Others                          | 356                                  | 64  | 15   | 435                                    |
| <b>Total</b>                    | <b>951</b>                           | <b>263</b>  | <b>15</b>  | <b>1,229</b>                           |
| <b>Deferred tax liabilities</b> |                                      |   |  |  |
| Inventories                     | (244)                                | 209   | -  | (35)                                   |
| Property, plant and equipment   | (2,432)                              | (287)   | -  | (2,719)                                |
| Finance lease assets            | (5)                                  | 1   | -  | (4)                                    |
| Others                          | (59)                                 | 4   | (8)  | (63)                                   |
| <b>Total</b>                    | <b>(2,740)</b>                       | <b>(73)</b>   | <b>(8)</b>                                       | <b>(2,821)</b>                         |
| <b>Net</b>                      | <b>(1,789)</b>                       | <b>190</b>  | <b>7</b>   | <b>(1,592)</b>                         |

|  | Unit : Million Baht                  |   |  |  |
|--|--------------------------------------|---|--|--|
|  | <u>As at<br/>January 1,<br/>2018</u> | <u>Separate financial statements<br/>(Charged) / credited to:</u> |  | <u>As at<br/>December 31,<br/>2018</u> |
|  |                                      | <u>Profit<br/>or loss</u>   | <u>Other<br/>comprehensive<br/>income (loss)</u> |  |
| <b>Deferred tax assets</b>             |                                      |   |  |  |
| Inventories                            | 10                                   | 1   | -  | 11                                     |
| Employee benefits expenses             | 573                                  | 11  | -  | 584                                    |
| Capital distribution from subsidiaries | 22                                   | (22)  | -  | -                                      |
| Others                                 | 352                                  | 4   | -  | 356                                    |
| <b>Total</b>                           | <b>957</b>                           | <b>(6)</b>  | <b>-</b>   | <b>951</b>                             |
| <b>Deferred tax liabilities</b>        |                                      |   |  |  |
| Inventories                            | (1)                                  | (243)   | -  | (244)                                  |
| Property, plant and equipment          | (2,530)                              | 98  | -  | (2,432)                                |
| Finance lease assets                   | (5)                                  | -   | -  | (5)                                    |
| Others                                 | (32)                                 | (14)  | (13)   | (59)                                   |
| <b>Total</b>                           | <b>(2,568)</b>                       | <b>(159)</b>  | <b>(13)</b>                                      | <b>(2,740)</b>                         |
| <b>Net</b>                             | <b>(1,611)</b>                       | <b>(165)</b>  | <b>(13)</b>                                      | <b>(1,789)</b>                         |

In the fourth quarter of 2019 and 2018, the Group recognised deferred tax assets of previously unrecognised tax losses because management considered it probable that future taxable profits would be available against which such losses can be used.

## 20. INTEREST-BEARING LIABILITIES

Interest bearing liabilities are defined as borrowings, debentures and finance lease liabilities. The balances as at December 31, 2019 and 2018 were as follows:

|   | <u>Note</u> | Unit : Million Baht                          |              |  |              |
|---|-------------|--|--------------|--|--------------|
|   |             | <u>Consolidated<br/>financial statements</u> |              | <u>Separate<br/>financial statements</u> |              |
|   |             | <u>2019</u>                                  | <u>2018</u>  | <u>2019</u>                              | <u>2018</u>  |
| <b>Current</b>                                    |             |  |              |  |              |
| Short-term borrowings from financial institutions |             |  |              |  |              |
| Secured   |             | 427  | 388          | -  | -            |
| Unsecured   |             | 1,594  | 2,955        | -  | -            |
| Short-term borrowings from related parties        |             |  |              |  |              |
| Unsecured   | 27          | -  | -            | 3,041                                    | 1,931        |
| <b>Short-term borrowings</b>                      |             | <b>2,021</b>                                 | <b>3,343</b> | <b>3,041</b>                             | <b>1,931</b> |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

|   | Note | <u>Consolidated</u>         |               | Unit : Million Baht |               |
|---|------|-----------------------------|---------------|---------------------|---------------|
|   |      | <u>financial statements</u> |               | <u>Separate</u>     |               |
|   |      | <u>2019</u>                 | <u>2018</u>   | <u>2019</u>         | <u>2018</u>   |
| <b>Current (Continue)</b>   |      |                             |               |                     |               |
| Current portion of long-term borrowings from financial institutions |      |                             |               |                     |               |
| Secured   |      | 265                         | 883           | -                   | -             |
| Unsecured   |      | 7,843                       | 6,164         | 7,078               | 4,306         |
| Current portion of long-term borrowings from other parties          |      |                             |               |                     |               |
| Secured   |      | -                           | 894           | -                   | -             |
| Unsecured   |      | 41                          | 34            | -                   | -             |
| Current portion of debentures                                       |      |                             |               |                     |               |
| Unsecured   |      | -                           | 1,942         | -                   | 1,942         |
| <b>Current portion of long-term borrowings and debentures</b>       |      | <b>8,149</b>                | <b>9,917</b>  | <b>7,078</b>        | <b>6,248</b>  |
| Current portion of finance lease liabilities                        | 22   | 187                         | 138           | 141                 | 93            |
| <b>Total current</b>  |      | <b>10,357</b>               | <b>13,398</b> | <b>10,260</b>       | <b>8,272</b>  |
| <b>Non-current</b>  |      |                             |               |                     |               |
| Long-term borrowings from financial institutions                    |      |                             |               |                     |               |
| Secured   |      | 16,908                      | 13,648        | -                   | -             |
| Unsecured   |      | 9,610                       | 17,267        | 2,995               | 10,113        |
| Long-term borrowing from a related party                            |      |                             |               |                     |               |
| Unsecured   | 27   | -                           | -             | 14,991              | 16,105        |
| Long-term borrowings from other parties                             |      |                             |               |                     |               |
| Secured   |      | -                           | -             | -                   | -             |
| Unsecured   |      | 269                         | 324           | -                   | -             |
| Debentures  |      |                             |               |                     |               |
| Unsecured   |      | 70,131                      | 52,408        | 55,221              | 36,379        |
| <b>Long-term borrowings and debentures</b>                          |      | <b>96,918</b>               | <b>83,647</b> | <b>73,207</b>       | <b>62,597</b> |
| Finance lease liabilities   |      | 215                         | 181           | 148                 | 133           |
| <b>Total non-current</b>  |      | <b>97,133</b>               | <b>83,828</b> | <b>73,355</b>       | <b>62,730</b> |
| <b>Total</b>  |      | <b>107,490</b>              | <b>97,226</b> | <b>83,615</b>       | <b>71,002</b> |

As at December 31, 2019, the Group had unutilised credit facilities totalling Baht 12,285 million (2018: Baht 19,072 million).

The periods to maturity of interest-bearing liabilities, excluding finance lease liabilities, as at December 31, 2019 and 2018 were as follows:

|                                      | <u>Consolidated</u>         |               | Unit : Million Baht |               |
|--------------------------------------|-----------------------------|---------------|---------------------|---------------|
|                                      | <u>financial statements</u> |               | <u>Separate</u>     |               |
|                                      | <u>2019</u>                 | <u>2018</u>   | <u>2019</u>         | <u>2018</u>   |
| Within one year                      | 10,170                      | 13,260        | 10,119              | 8,179         |
| After one year but within five years | 75,970                      | 74,624        | 64,717              | 62,597        |
| After five years                     | 20,948                      | 9,023         | 8,490               | -             |
| <b>Total</b>                         | <b>107,088</b>              | <b>96,907</b> | <b>83,326</b>       | <b>70,776</b> |

Long-term borrowings as at December 31, 2019 and 2018 were secured on the following assets:

|                               | <u>Consolidated</u>         |             | Unit : Million Baht |             |
|-------------------------------|-----------------------------|-------------|---------------------|-------------|
|                               | <u>financial statements</u> |             | <u>Separate</u>     |             |
|                               | <u>2019</u>                 | <u>2018</u> | <u>2019</u>         | <u>2018</u> |
| Cash and cash equivalents     | 60                          | 192         | -                   | -           |
| Property, plant and equipment | 15,837                      | 17,962      | -                   | -           |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Debentures and Borrowings from financial institutions of the Group were as follows:

## Debentures

On August 22, 2019, the Company issued a 5-year tenor, name-registered, unsubordinated and unsecured debentures with debentureholders' representative. Debenture issuer has rights to redeem the debentures prior to maturity after one year of issuance. The debentures have an issued 10 million units and the issue price per unit is Baht 1,000, totalling Baht 10,000 million. The use of proceeds are for debt settlement and/or for business expansion and/or for working capital. The coupon rate is 2.90% per annum with interest payable on semi-annual basis and maturity in August 2024.

On September 5, 2019, the Company issued name-registered, unsubordinated and unsecured debentures without a debentureholders' representative for institutional investors. The debentures have an issued 10 million units and the issue price per unit is Baht 1,000, totalling Baht 10,000 million separate into 3 tranches, A 5-year tenor, Baht 1,500 million, carrying a 2.20% coupon rate per annum with interest payable on semi-annual basis and maturity in September 2024; A 7-year tenor, Baht 7,000 million, carrying a 2.43% coupon rate per annum with interest payable on semi-annual basis and maturity in September 2026; A 10-year tenor, Baht 1,500 million, carrying a 2.75% coupon rate per annum with interest payable on semi-annual basis and maturity in September 2029. The use of proceeds is for business expansion.

As at December 31, 2019, the Group had unsubordinated and unsecured debentures in US dollar and Thai Baht in the amount of Baht 70,131 million (2018: Baht 54,350 million). These debentures have maturity periods between 4 years to 10 years, bear different interest rates and repayment schedules as specified in each agreement.

Details of the Group's debentures as at December 31, 2019 were as follows:

|   | Currency | Facilities<br>(in million) | Face value<br>per share | Years | Interest<br>rates<br>(% p.a.) | Repayment Terms  |
|---|----------|----------------------------|-------------------------|-------|-------------------------------|--|
| <b>The Company</b>  |          |                            |                         |       |                               |  |
| Unsubordinated debenture at 99.108% of the face value unsecured with a debentureholders' representative   | USD      | 504.11                     | 1,000                   | 10    | 4.25                          | Interest is payable on a semi-annual basis and maturity in September 2022. |
| Unsubordinated debenture unsecured with a debentureholders' representative  | Baht     | 10,000                     | 1,000                   | 7     | 4.50                          | Interest is payable on a semi-annual basis and maturity in August 2021.    |
| Unsubordinated debenture unsecured with a debentureholders' representative and debenture issuer has right to redeem the debentures prior to maturity after one year of issuance | Baht     | 10,000                     | 1,000                   | 4     | 3.05                          | Interest is payable on a semi-annual basis and maturity in August 2021.    |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

|   | Currency | Facilities<br>(in million) | Face value<br>per share | Years | Interest<br>rates<br>(% p.a.) | Repayment Terms  |
|---|----------|----------------------------|-------------------------|-------|-------------------------------|--|
| <b>The Company (Continue)</b>   |          |                            |                         |       |                               |  |
| Unsubordinated debenture unsecured with a debentureholders' representative and debenture issuer has right to redeem the debentures prior to maturity after one year of issuance | Baht     | 10,000                     | 1,000                   | 5     | 2.90                          | Interest is payable on a semi-annual basis and maturity in August 2024.    |
| Unsubordinated debenture unsecured without a debentureholders' representative   | Baht     | 1,500                      | 1,000                   | 5     | 2.20                          | Interest is payable on a semi-annual basis and maturity in September 2024. |
| Unsubordinated debenture unsecured without a debentureholders' representative   | Baht     | 7,000                      | 1,000                   | 7     | 2.43                          | Interest is payable on a semi-annual basis and maturity in September 2026. |
| Unsubordinated debenture unsecured without a debentureholders' representative   | Baht     | 1,500                      | 1,000                   | 10    | 2.75                          | Interest is payable on a semi-annual basis and maturity in September 2029. |
| <b>Subsidiaries</b>   |          |                            |                         |       |                               |  |
| Unsubordinated debenture at 100.00% of the face value unsecured with a debentureholders' representative   | USD      | 495.89                     | 1,000                   | 4.2   | 4.25                          | Interest is payable on a semi-annual basis and maturity in September 2022. |

### *Borrowings from financial institutions*

As at December 31, 2019, the Group and the Company had long-term and revolving long-term credit facility agreements with several financial institutions totalling Baht 34,626 million and Baht 10,073 million, respectively (2018: Baht 37,962 million and Baht 14,419 million, respectively) bear different interest rates as specified in each agreement. The Group is required to comply with certain covenants pertaining to maintain of certain financial ratios, percentage of share held by the major shareholder and other conditions as specified in each agreement.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Details of the Group's borrowings as at December 31, 2019 were as follows:

| Currency            | Facilities<br>(in million) | Interest Rates (% p.a.)  | Repayment Terms  |
|---------------------|----------------------------|--|--|
| <b>The Company</b>  |                            |  |  |
| Baht                | 3,000                      | Highest interest rate for 6 month-fixed deposit plus margin                    | Principal is repayable on a semi-annual basis, in 10 instalments commencing from July 2015.      |
| Baht                | 7,000                      | Highest interest rate for 6 month-fixed deposit plus margin                    | Principal is repayable on a semi-annual basis, in 15 instalments commencing from September 2013. |
| USD                 | 100                        | LIBOR 6M plus margin   | Principal is repayable on a semi-annual basis, in 10 instalments commencing from March 2016.     |
| Baht                | 3,000                      | Highest interest rate for 6 month-fixed deposit plus margin                    | Principal is repayable on a semi-annual basis, in 14 instalments commencing from March 2014.     |
| Baht                | 6,000                      | Highest interest rate for 6 month-fixed deposit plus margin                    | Principal is repayable on a semi-annual basis, in 10 instalments commencing from March 2016.     |
| Baht                | 5,000                      | THBFIX 6M plus margin  | Principal is repayable in 2 instalments in December 2020 and June 2023.                          |
| <b>Subsidiaries</b> |                            |  |  |
| EUR                 | 180                        | EURIBOR 3M plus margin   | Principal is repayable on an annual basis, in 6 instalments commencing from 2021.                |
| Baht                | 1,000                      | Fixed rate   | Principal is repayable on a quarterly basis, in 16 instalments commencing from September 2016.   |
| Baht                | 700                        | BIBOR 3M plus margin   | Principal is repayable on a quarterly basis, in 16 instalments, commencing from March 2016.      |
| Baht                | 900                        | Highest interest rate for 6 month-fixed deposit plus margin                    | Principal is repayable on a semi-annual basis, in 14 instalments commencing from April 2016.     |
| Baht                | 900                        | Highest interest rate for 6 month-fixed deposit plus margin                    | Principal is repayable on a semi-annual basis, in 14 instalments commencing from May 2016.       |
| Baht                | 900                        | Highest interest rate for 6 month-fixed deposit plus margin                    | Principal is repayable on a semi-annual basis, in 12 instalments commencing from May 2017.       |
| Baht                | 8,653.87                   | Highest interest rate for 6 month-fixed deposit (4 Banks averaged) plus margin | Principal is repayable on a semi-annual basis, in 17 instalments commencing from September 2018. |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

| Currency                       | Facilities<br>(in million) | Interest Rates (% p.a.) | Repayment Terms   |
|--------------------------------|----------------------------|-------------------------|---|
| <b>Subsidiaries (Continue)</b> |                            |                         |   |
| Baht                           | 500                        | Fixed rate              | Principal is repayable on a quarterly basis, in 13 instalments commencing from January 2021.    |
| Baht                           | 500                        | Fixed rate              | Principal is repayable on a quarterly basis, in 10 instalments commencing from June 2019.       |
| Baht                           | 575                        | BIBOR 3M plus margin    | Principal is repayable on a quarterly basis, in 13 instalments commencing from September 2019.  |
| Baht                           | 14,357                     | THBFIX 3M plus margin   | Principal is repayable on a semi-annual basis, in 24 instalments commencing from February 2021. |
| Baht                           | 6,004                      | THBFIX 3M plus margin   | Principal is repayable on a semi-annual basis, in 20 instalments commencing from February 2021. |

As at December 31, 2019, the subsidiaries' interest-bearing liabilities were guaranteed by the Company totalling Baht 19,777 million (2018: Baht 22,217 million) (See note 39).

### 21. TRADE PAYABLES

Trade payables as at December 31, 2019 and 2018 consisted of:

|                 | <i>Note</i> | <u>Consolidated</u>         |               | <u>Unit : Million Baht</u> |               |
|-----------------|-------------|-----------------------------|---------------|----------------------------|---------------|
|                 |             | <u>financial statements</u> |               | <u>Separate</u>            |               |
|                 |             | <u>2019</u>                 | <u>2018</u>   | <u>2019</u>                | <u>2018</u>   |
| Related parties | 27          | 20,727                      | 28,167        | 19,470                     | 26,147        |
| Other parties   |             | 4,752                       | 6,349         | 450                        | 1,313         |
| <b>Total</b>    |             | <b>25,479</b>               | <b>34,516</b> | <b>19,920</b>              | <b>27,460</b> |

### 22. OTHER PAYABLES

Other payables as at December 31, 2019 and 2018 consisted of:

|  | <u>Consolidated</u>         |               | <u>Unit : Million Baht</u> |               |
|--|-----------------------------|---------------|----------------------------|---------------|
|  | <u>financial statements</u> |               | <u>Separate</u>            |               |
|  | <u>2019</u>                 | <u>2018</u>   | <u>2019</u>                | <u>2018</u>   |
| Accrued operating expenses                   | 3,689                       | 3,303         | 1,708                      | 2,120         |
| Accrued interest expenses                    | 846                         | 706           | 863                        | 715           |
| Other payables                               | 5,265                       | 5,193         | 5,138                      | 4,331         |
| Deposits and advances received               | 3,313                       | 1,979         | 62                         | 198           |
| Retention payables                           | -                           | 49            | -                          | 24            |
| Current portion of finance lease liabilities | 187                         | 138           | 141                        | 93            |
| Withholding tax payable                      | 460                         | 451           | 327                        | 259           |
| Accrued other tax expenses                   | 271                         | 4,005         | 183                        | 3,967         |
| Others                                       | 62                          | 44            | 21                         | 6             |
| <b>Total</b>                                 | <b>14,093</b>               | <b>15,868</b> | <b>8,443</b>               | <b>11,713</b> |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

### 23. PROVISIONS FOR EMPLOYEE BENEFITS

Provisions for employee benefits as at December 31, 2019 and 2018 consisted of:

|                                   | <u>Consolidated</u>         |              | <u>Unit : Million Baht</u> |              |
|-----------------------------------|-----------------------------|--------------|----------------------------|--------------|
|                                   | <u>financial statements</u> |              | <u>Separate</u>            |              |
|                                   | <u>2019</u>                 | <u>2018</u>  | <u>2019</u>                | <u>2018</u>  |
| Post-employment benefits          | 4,860                       | 3,585        | 3,553                      | 2,545        |
| Other long-term employee benefits | 698                         | 698          | 461                        | 470          |
| <b>Total</b>                      | <b>5,558</b>                | <b>4,283</b> | <b>4,014</b>               | <b>3,015</b> |

Movement in the present value of the defined employee benefit obligations were as follows:

|  | <u>Consolidated</u>         |              | <u>Unit : Million Baht</u> |              |
|--|-----------------------------|--------------|----------------------------|--------------|
|  | <u>financial statements</u> |              | <u>Separate</u>            |              |
|  | <u>2019</u>                 | <u>2018</u>  | <u>2019</u>                | <u>2018</u>  |
| As at January 1,   | 4,283                       | 4,011        | 3,015                      | 2,832        |
| <b>Include in profit or loss:</b>                        |                             |              |                            |              |
| Current service costs                                    | 368                         | 294          | 235                        | 192          |
| Interest on obligation                                   | 130                         | 102          | 101                        | 80           |
| Past service costs                                       | 993                         | -            | 820                        | -            |
| Actuarial (gain) loss                                    | 11                          | (12)         | -                          | -            |
|  | <u>1,502</u>                | <u>384</u>   | <u>1,156</u>               | <u>272</u>   |
| <b>Included in other comprehensive income</b>            |                             |              |                            |              |
| Actuarial (gain) loss                                    | 57                          | (20)         | -                          | -            |
| Exchange differences on translating financial statement  | (54)                        | (32)         | -                          | -            |
|  | <u>3</u>                    | <u>(52)</u>  | <u>-</u>                   | <u>-</u>     |
| <b>Others</b>  |                             |              |                            |              |
| Benefits paid by the plan                                | (234)                       | (150)        | (157)                      | (89)         |
| Defined benefit obligations from acquisition of business | -                           | 90           | -                          | -            |
| Recorded as cost of assets under construction            | 4                           | -            | -                          | -            |
|  | <u>(230)</u>                | <u>(60)</u>  | <u>(157)</u>               | <u>(89)</u>  |
| <b>As at December 31,</b>                                | <b>5,558</b>                | <b>4,283</b> | <b>4,014</b>               | <b>3,015</b> |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Actuarial (gains) losses recognised in other comprehensive income arising from:

|                         | <u>Consolidated</u>         |             | Unit : Million Baht |             |
|-------------------------|-----------------------------|-------------|---------------------|-------------|
|                         | <u>financial statements</u> |             | <u>Separate</u>     |             |
|                         | <u>2019</u>                 | <u>2018</u> | <u>2019</u>         | <u>2018</u> |
| Demographic assumptions | -                           | -           | -                   | -           |
| Financial assumptions   | 58                          | (19)        | -                   | -           |
| Experience adjustment   | (1)                         | (1)         | -                   | -           |
| <b>Total</b>            | <b>57</b>                   | <b>(20)</b> | <b>-</b>            | <b>-</b>    |

|   | <u>Consolidated</u>         |             | Unit : Million Baht |             |
|---|-----------------------------|-------------|---------------------|-------------|
|   | <u>financial statements</u> |             | <u>Separate</u>     |             |
|   | <u>2019</u>                 | <u>2018</u> | <u>2019</u>         | <u>2018</u> |
| <b>For the years ended December 31,</b>             |                             |             |                     |             |
| <b>Recognised in profit or loss:</b>                |                             |             |                     |             |
| Post-employment benefits                            | 1,418                       | 326         | 1,111               | 226         |
| Other long-term employee benefits                   | 84                          | 58          | 45                  | 46          |
| <b>Total</b>  | <b>1,502</b>                | <b>384</b>  | <b>1,156</b>        | <b>272</b>  |
| <b>Recognised in other comprehensive income:</b>    |                             |             |                     |             |
| Actuarial (gains) losses recognised during the year | 57                          | (20)        | -                   | -           |
| Cumulative actuarial (gains) losses recognised      | (903)                       | 1,043       | -                   | 824         |

The expense is recognised in the following line items in the statement of profit or loss:

|  | <u>Consolidated</u>         |             | Unit : Million Baht |             |
|--|-----------------------------|-------------|---------------------|-------------|
|  | <u>financial statements</u> |             | <u>Separate</u>     |             |
|  | <u>2019</u>                 | <u>2018</u> | <u>2019</u>         | <u>2018</u> |
| Cost of sales  | 912                         | 244         | 732                 | 167         |
| Selling and distribution and administrative expenses | 590                         | 140         | 424                 | 105         |
| <b>Total</b>   | <b>1,502</b>                | <b>384</b>  | <b>1,156</b>        | <b>272</b>  |

### Actuarial assumptions

The following were the principal actuarial assumptions as at December 31, 2019 and 2018 (expressed as weighted-averages):

|                      | <u>Consolidated</u>         |             | Unit: %         |             |
|----------------------|-----------------------------|-------------|-----------------|-------------|
|                      | <u>financial statements</u> |             | <u>Separate</u> |             |
|                      | <u>2019</u>                 | <u>2018</u> | <u>2019</u>     | <u>2018</u> |
| Discount rate        | 1.0-4.0                     | 1.8-3.5     | 2.9             | 2.9         |
| Future salary growth | 3.0-7.0                     | 1.5-8.0     | 7.0             | 7.0         |
| Employee turnover    | 0-50                        | 0-50        | 0-3             | 0-3         |
| Retirement age       | 55-65 years                 | 55-65 years | 60 years        | 60 years    |

Assumptions regarding future mortality have been based on published statistics and mortality tables.

As at December 31, 2019, the weighted-average duration of the defined benefit obligation was 18 years (2018: 18 years).

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

### *Sensitivity analysis*

Reasonably possible changes at the reporting date to one of the relevant actuarial assumptions, holding other assumptions constant, would have affected the defined benefit obligation by the amounts shown below:

|                                    | Unit : Million Baht         |                 |                             |                 |
|------------------------------------|-----------------------------|-----------------|-----------------------------|-----------------|
|                                    | <u>Consolidated</u>         |                 | <u>Separate</u>             |                 |
|                                    | <u>financial statements</u> |                 | <u>financial statements</u> |                 |
|                                    | <u>Increase</u>             | <u>Decrease</u> | <u>Increase</u>             | <u>Decrease</u> |
| <b>As at December 31, 2019</b>     |                             |                 |                             |                 |
| Discount rate (1% movement)        | (577)                       | 667             | (422)                       | 498             |
| Future salary growth (1% movement) | 602                         | (498)           | 423                         | (367)           |
| <b>As at December 31, 2018</b>     |                             |                 |                             |                 |
| Discount rate (1% movement)        | (425)                       | 503             | (308)                       | 363             |
| Future salary growth (1% movement) | 433                         | (358)           | 299                         | (259)           |

Although the analysis does not take account of the full distribution of cash flows expected under the plan, it does provide an approximation of the sensitivity of the assumptions shown.

The Labor Protection Act (No. 7) B.E. 2562 has been announced in the Royal Gazette on April 5, 2019, which will be effective after 30 days from the date announced in Royal Gazette. This Labor Protection Act stipulates additional legal severance pay rates for employees who have worked for an uninterrupted period of twenty years or more. Such employees are entitled to receive compensation of not less than 400 days at the employees' latest wage rate. This change is considered an amendment to post-employment benefits plan. The Group has already reflected the effect of such change by recognising past service cost as an expense in the consolidated and separate statements of profit or loss for the year ended December 31, 2019.

## 24. SHARE CAPITAL

|   | <u>Par value</u><br><u>per share</u><br><u>(Baht)</u> | Unit : Million Shares / Million Baht |                 |                |                 |
|---|---|--------------------------------------|-----------------|----------------|-----------------|
|   |   | <u>2019</u>                          |                 | <u>2018</u>    |                 |
|   |   | <u>Number</u>                        | <u>Amount</u>   | <u>Number</u>  | <u>Amount</u>   |
| <b><i>Authorised</i></b>                      |   |                                      |                 |                |                 |
| As at January 1,<br>ordinary shares           | 10  | 4,508.8                              | 45,088.5        | 4,508.8        | 45,088.5        |
| <b>As at December 31,<br/>ordinary shares</b> | <b>10</b>   | <b>4,508.8</b>                       | <b>45,088.5</b> | <b>4,508.8</b> | <b>45,088.5</b> |
| <b><i>Issued and paid-up</i></b>              |   |                                      |                 |                |                 |
| As at January 1,<br>ordinary shares           | 10  | 4,508.8                              | 45,088.5        | 4,508.8        | 45,088.5        |
| <b>As at December 31,<br/>ordinary shares</b> | <b>10</b>   | <b>4,508.8</b>                       | <b>45,088.5</b> | <b>4,508.8</b> | <b>45,088.5</b> |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## 25. ADDITIONAL PAID-IN CAPITAL AND RESERVES

### *Share premium*

Section 51 of the Public Companies Act B.E. 2535 requires companies to set aside share subscription monies received in excess of the par value of the shares issued to a reserve account (“share premium”). Share premium is not available for dividend distribution.

### *Premium on treasury stock*

The premium on treasury stock represents the accumulated premium on sale of treasury stock, net of any deficits on sale or cancellation of treasury stock. The premium on treasury stock is not available for dividend distribution.

### *Difference arising from business combination under common control*

Difference on common control transactions arising within equity represents the difference of the book values of certain entities or businesses under common control under their cost as of the date of their acquisition. The reserve is non-distributable and will be retained until the respective businesses are sold or otherwise disposed of.

### *Legal reserve*

Section 116 of the Public Companies Act B.E. 2535 requires that a company shall allocate not less than 5% of its annual net profit, less any accumulated losses brought forward (if any), to a reserve account (“legal reserve”), until this account reaches an amount not less than 10% of the registered authorised capital. The legal reserve is not available for dividend distribution.

### *Treasury stock reserve*

The treasury stock reserve represents the amount appropriated from retained earnings equal to the cost of the Company’s own shares held by the Company. The treasury stock reserve is not available for dividend distribution.

### *Other components of equity*

#### *Exchange differences on translating financial statements*

The exchange differences on translating financial statements account within equity comprises all foreign currency differences arising from the translation of the financial statements of foreign operations, as well as from the translation of liabilities that hedge the Company’s net investment in a foreign operation.

#### *Remeasurement of investments held as available-for-sale*

Gain or loss on remeasurement of investments held as available-for-sale account within equity comprises the cumulative net change in the fair value of available-for-sale investments until the investments are derecognised or impaired.

#### *Cash flow hedges*

The cash flow hedges account within equity comprises the cumulative net change in the fair value of cash flow hedges related to hedged transactions that have not yet occurred for effective portion.

#### *Movements in reserves*

Movements in reserves are shown in the statements of changes in equity.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## 26. TREASURY STOCK

At the Board of Directors' Meeting held on May 27, 2019, the Board approved a share repurchase program for financial management purpose not exceeding 50 million shares, or approximately 1.1 percent of the total issued shares, with the maximum amount of Baht 3,000 million. The Company may purchase the shares through the Stock Exchange of Thailand within 6 months, during the period from June 11, 2019 to December 9, 2019. Treasury stock has to be resold after 6 months but no later than 3 years from the completion date of share repurchases.

On December 9, 2019, the Company has repurchased the shares under the program totalling 22.30 million shares, equivalent to 0.49% of issued share and paid-up capital, at a total cost of Baht 1,187.60 million with an equivalent amount had been appropriated from retained earnings to treasury stock reserve.

## 27. TRANSACTIONS WITH RELATED PARTIES

A related party is as follows:

- An individual or an entity which has the ability, directly or indirectly, to control or joint control or exercise significant influence over the Group in making financial and operating decisions or;
- An individual or an entity which is subject to common control or common significant influence with the Group or;
- The Group has the ability, directly or indirectly, to control or joint control or exercise significant influence over an individual or an entity in making financial and operating decisions.

Relationships with significant related parties were as follows:

| Name of entities                         | Country of incorporation/<br>nationality | Nature of relationships   |
|--|--|---|
| PTT Plc.                                 | Thailand                                 | Parent, some common directors and management and the Company's director as a management           |
| Global Green Chemicals Plc.              | Thailand                                 | Subsidiary, 72.29% shareholding, some common directors and the Company's management as a director |
| GC Glycol Co., Ltd.                      | Thailand                                 | Subsidiary, 100% shareholding and the Company's management as a director                          |
| GC Polyols Co., Ltd.                     | Thailand                                 | Subsidiary, 82.10% shareholding and the Company's management as a director                        |
| GC Maintenance and Engineering Co., Ltd. | Thailand                                 | Subsidiary, 100% shareholding and the Company's management as a director                          |
| GC Marketing Solutions Co., Ltd.         | Thailand                                 | Subsidiary, 100% shareholding by the Group, and the Company's management as a director            |
| GC Logistics Solutions Co., Ltd.         | Thailand                                 | Subsidiary, 100% shareholding by the Group  |
| GC Ventures Co., Ltd.                    | Thailand                                 | Subsidiary, 100% shareholding   |
| GC Treasury Center Co., Ltd.             | Thailand                                 | Subsidiary, 100% shareholding and the Company's management as a director                          |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

| Name of entities  | Country of incorporation/<br>nationality | Nature of relationships   |
|---|--|---|
| GC Styrenics Co., Ltd.  | Thailand                                 | Subsidiary, 100% shareholding   |
| GC Estate Co., Ltd.   | Thailand                                 | Subsidiary, 100% shareholding and the Company's management as a director  |
| GC Oxirane Co., Ltd.  | Thailand                                 | Subsidiary, 100% shareholding and the Company's management as a director  |
| Solution Creation Co., Ltd.   | Thailand                                 | Subsidiary, 100% shareholding and the Company's management as a director  |
| Thai Tank Terminal Limited  | Thailand                                 | Subsidiary, 51% shareholding, some common directors and the Company's management as a director                            |
| Bio Spectrum Co., Ltd.<br>(Liquidation process finalized in January 2019)     | Thailand                                 | Subsidiary, 100% shareholding   |
| PTT Phenol Co., Ltd.  | Thailand                                 | Subsidiary, 100% shareholding and the Company's management as a director  |
| GC-M PTA Company Limited<br>(Formerly Siam Mitsui PTA Co., Ltd.)              | Thailand                                 | Subsidiary, 49% shareholding by the Company and 25% shareholding by subsidiary and the Company's management as a director |
| NPC Safety and Environmental Service Co., Ltd.                                | Thailand                                 | Subsidiary, 100% shareholding and the Company's management as a director  |
| Auria BioChemicals Co., Ltd.<br>(Liquidation process finalized in April 2019) | Thailand                                 | Subsidiary, 100% shareholding by the Group  |
| PTTGC America Corporation   | United States of America                 | Subsidiary, 100% shareholding, some common directors and the Company's management as a director                           |
| PTTGC International Private Limited   | Singapore                                | Subsidiary, 100% shareholding, some common directors and the Company's management as a director                           |
| GGC Biochemicals Co., Ltd.  | Thailand                                 | Indirect subsidiary, 100% shareholding by subsidiary  |
| Thai PET Resin Co., Ltd.  | Thailand                                 | Indirect subsidiary, 84.40% shareholding by subsidiaries and the Company's management as a director                       |
| Thai Fatty Alcohols Co., Ltd.   | Thailand                                 | Indirect subsidiary, 100% shareholding by subsidiary  |
| PL Global Transport Co., Ltd.   | Thailand                                 | Indirect subsidiary, 100% shareholding by the Group   |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

| Name of entities   | Country of incorporation/<br>nationality | Nature of relationships   |
|--|--|---|
| NPC S&E Security Guard Co., Ltd.   | Thailand                                 | Indirect subsidiary, 100% shareholding by the Group   |
| Vencorex (Thailand) Co., Ltd.  | Thailand                                 | Indirect subsidiary, 100% shareholding by indirect subsidiary   |
| GCM Polymer Trading DMCC<br>(Formerly Polymer Marketing DMCC)                              | United Arab Emirates                     | Indirect subsidiary, 100% shareholding by the Group   |
| GC Logistics Solutions (Vietnam) Co., Ltd.   | Vietnam                                  | Indirect subsidiary, 100% shareholding by the Group   |
| GC Marketing Solutions Myanmar Co., Ltd.<br>(Formerly Polymer Marketing Myanmar Co., Ltd.) | Myanmar                                  | Indirect subsidiary, 100% shareholding by the Group   |
| GC Marketing Solutions Vietnam Co., Ltd.<br>(Formerly Polymer Marketing Vietnam Co., Ltd.) | Vietnam                                  | Indirect subsidiary, 100% shareholding by the Group   |
| GC Ventures America Corporation  | United States of America                 | Indirect subsidiary, 100% shareholding by the Group   |
| PTTGC America LLC  | United States of America                 | Indirect subsidiary, 100% shareholding by the Group, some common directors and the Company's management as a director |
| PTTGC Innovation America Corporation   | United States of America                 | Indirect subsidiary, 100% shareholding by the Group   |
| PTTGC International (Netherlands) B.V.   | Netherlands                              | Indirect subsidiary, 100% shareholding by the Group   |
| PTTGC International (USA) Inc.   | United States of America                 | Indirect subsidiary, 100% shareholding by the Group, some common directors and the Company's management as a director |
| PT GCM Marketing Solutions Indonesia   | Indonesia                                | Indirect subsidiary, 67% shareholding by the Group  |
| Vencorex France S.A.S.   | France                                   | Indirect subsidiary, 100% shareholding by indirect subsidiary   |
| Vencorex Holding   | France                                   | Indirect subsidiary, 90.82% shareholding by subsidiary  |
| PTT Asahi Chemical Co., Ltd.   | Thailand                                 | Joint venture, 50% shareholding and the Company's management as a director  |
| PTT MCC Biochem Co., Ltd.  | Thailand                                 | Joint venture, 50% shareholding   |
| HMC Polymers Co., Ltd.   | Thailand                                 | Joint venture, 41.44% shareholding and the Company's management as a director   |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

| Name of entities                              | Country of incorporation/<br>nationality | Nature of relationships  |
|---|--|--|
| GGC KTIS Bioindustrial Company Limited        | Thailand                                 | Indirect joint venture, 50% shareholding by subsidiary   |
| Thai Ethoxylate Co., Ltd.                     | Thailand                                 | Indirect joint venture, 50% shareholding by subsidiary   |
| NatureWorks Asia Pacific Co., Ltd.            | Thailand                                 | Indirect joint venture, 50% shareholding by the Group  |
| Emery Oleochemicals (M) Sdn. Bhd.             | Malaysia                                 | Indirect joint venture, 50% shareholding by the Group and the Company's management as a director                                 |
| Emery Oleochemicals Marketing (M) Sdn. Bhd.   | Malaysia                                 | Indirect joint venture, 50% shareholding by the Group  |
| Emery Specialty Chemicals Sdn. Bhd.           | Malaysia                                 | Indirect joint venture, 50% shareholding by the Group and the Company's management as a director                                 |
| Emeryleo Specialties (M) Sdn. Bhd.            | Malaysia                                 | Indirect joint venture, 50% shareholding by the Group  |
| NatureWorks LLC                               | United States of America                 | Indirect joint venture, 50% shareholding by the Group  |
| Matrix Polymers Australia Pty Ltd.            | Australia                                | Indirect joint venture, 49% shareholding by the Group  |
| Matrix Polymers Ltd.                          | England                                  | Indirect joint venture, 49% shareholding by the Group  |
| Matrix Polymers New Zealand Pty Ltd.          | New Zealand                              | Indirect joint venture, 49% shareholding by the Group  |
| Revolve Group Limited                         | England                                  | Indirect joint venture, 49% shareholding by the Group  |
| Revolve Matrix Polymers Malaysia Sdn. Bhd.    | Malaysia                                 | Indirect joint venture, 49% shareholding by the Group  |
| Global Power Synergy Plc.                     | Thailand                                 | Associate, 22.73% shareholding, shareholding by parent company, some common directors and the Company's management as a director |
| Kuraray GC Advanced Materials Company Limited | Thailand                                 | Associate, 33.40% shareholding and the Company's management as a director  |
| PTT Energy Solutions Co., Ltd.                | Thailand                                 | Associate, 20% shareholding, shareholding by parent company, some common directors   |
| PTT Digital Solutions Co., Ltd.               | Thailand                                 | Associate, 40% shareholding and shareholding by parent company   |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

| Name of entities                            | Country of incorporation/<br>nationality | Nature of relationships   |
|---|--|---|
| Vinythai Plc.                               | Thailand                                 | Associate, 24.98% shareholding and the Company's management as a director     |
| Eastern Fluid Transport Co., Ltd.           | Thailand                                 | Associate, 15% shareholding by the Company and 15% shareholding by subsidiary |
| GHECO-One Company Limited                   | Thailand                                 | Indirect associate, 22.73% shareholding by the Group                          |
| Glow Energy Public Company Limited          | Thailand                                 | Indirect associate, 22.73% shareholding by the Group                          |
| Glow SPP 2 Company Limited                  | Thailand                                 | Indirect associate, 22.73% shareholding by the Group                          |
| Glow SPP 3 Company Limited                  | Thailand                                 | Indirect associate, 22.73% shareholding by the Group                          |
| Glow SPP 11 Company Limited                 | Thailand                                 | Indirect associate, 22.73% shareholding by the Group                          |
| Glow IPP Company Limited                    | Thailand                                 | Indirect associate, 22.73% shareholding by the Group                          |
| Thai Eastern Topseeds Oil Co., Ltd.         | Thailand                                 | Indirect associate, 30% shareholding by subsidiary                            |
| Combined Heat and Power Producing Co., Ltd. | Thailand                                 | Indirect associate, 22.73% shareholding by the Group                          |
| Advanced Biochemical (Thailand) Co., Ltd.   | Thailand                                 | Indirect associate, 24.98% shareholding by the Group                          |
| S.P. Petpack Inter Group Co., Ltd.          | Thailand                                 | Indirect associate, 25% shareholding by the Group                             |
| PT Indo Thai Trading                        | Indonesia                                | Indirect associate, 49% shareholding by the Group until July 2019             |
| Thai Petroleum Pipeline Co., Ltd.           | Thailand                                 | Related party, indirect shareholding by parent company                        |
| Dhipaya Insurance Plc.                      | Thailand                                 | Related party, shareholding by parent company                                 |
| Thai Paraxylene Co., Ltd.                   | Thailand                                 | Related party, indirect shareholding by parent company                        |
| Thai Oil Plc.                               | Thailand                                 | Related party, shareholding by parent company                                 |
| TOP Solvent Co., Ltd.                       | Thailand                                 | Related party, indirect shareholding by parent company                        |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

| Name of entities                              | Country of incorporation/<br>nationality | Nature of relationships  |
|---|--|--|
| TOP Solvent (Vietnam) LLC.                    | Vietnam                                  | Related party, indirect shareholding by parent company   |
| Business Services Alliance Co., Ltd.          | Thailand                                 | Related party, shareholding by parent company, the Company and two Company's associates, each of 25% shareholding of preferred stock |
| PTT Natural Gas Distribution Co., Ltd.        | Thailand                                 | Related party, shareholding by parent company  |
| PTT Retail Services Co., Ltd.                 | Thailand                                 | Related party, indirect shareholding by parent company   |
| PTT Retail Management Co., Ltd.               | Thailand                                 | Related party, indirect shareholding by parent company   |
| PTT Oil and Retail Business Plc.              | Thailand                                 | Related party, shareholding by parent company  |
| PTTEP Siam Limited                            | Thailand                                 | Related party, indirect shareholding by parent company   |
| PTTEP International Limited                   | Thailand                                 | Related party, indirect shareholding by parent company   |
| PTT Exploration and Production Plc.           | Thailand                                 | Related party, shareholding by parent company  |
| PTT Tank Terminal Limited                     | Thailand                                 | Related party, shareholding by parent company  |
| PTT Energy Resources Co., Ltd.                | Thailand                                 | Related party, shareholding by parent company  |
| PTT LNG Co., Ltd.                             | Thailand                                 | Related party, shareholding by parent company  |
| Rak Phasak Co., Ltd.                          | Thailand                                 | Related party, indirect shareholding by parent company   |
| LABIX Co., Ltd.                               | Thailand                                 | Related party, indirect shareholding by parent company   |
| Sak Chaisidhi Co., Ltd.                       | Thailand                                 | Related party, indirect shareholding by parent company   |
| Sport Services Alliance Co., Ltd.             | Thailand                                 | Related party, indirect shareholding by parent company   |
| Community Partnership Association             | Thailand                                 | The Company's management as a director   |
| Sarn Palung Social Enterprise Company Limited | Thailand                                 | Related party, 15% shareholding and shareholding by parent company   |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

| Name of entities                            | Country of incorporation/<br>nationality | Nature of relationships   |
|---|--|---|
| Amata Natural Gas Distribution Co., Ltd.    | Thailand                                 | Related party, indirect shareholding by parent company                  |
| Energy Complex Co., Ltd.                    | Thailand                                 | Related party, shareholding by parent company                           |
| UBE Chemicals (Asia) Plc.                   | Thailand                                 | Related party, indirect shareholding by parent company                  |
| IRPC Plc.                                   | Thailand                                 | Related party, shareholding by parent company                           |
| IRPC Polyol Co., Ltd.                       | Thailand                                 | Related party, indirect shareholding by parent company                  |
| Carigali-PTTEPI Operating Company Sdn. Bhd. | Malaysia                                 | Related party, indirect shareholding by parent company                  |
| PTTEP South Asia Limited                    | Cayman Islands                           | Related party, indirect shareholding by parent company                  |
| PTT International Trading DMCC              | United Arab Emirates                     | Related party, indirect shareholding by parent company                  |
| PTT International Trading London Ltd.       | England                                  | Related party, shareholding by parent company and some common directors |
| PTT International Trading Pte. Ltd.         | Singapore                                | Related party, shareholding by parent company                           |
| TPBI & Myanmar Star Co., Ltd.               | Myanmar                                  | Related party, shareholding by subsidiary                               |

The pricing policies for particular types of transactions are explained further below:

| Transactions  | Pricing policies   |
|---|--|
| Sale of goods   | Contract price / Regional market price / World market price  |
| Rendering of services   | Contract price   |
| Purchase of goods / raw materials / services                        | Contract price / Market price                                |
| Interest on loan  | Average cost of fund / Contractually agreed rate             |
| Key management personnel compensation (Meeting allowance and bonus) | The rate approved by the Board of Directors and shareholders |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Significant transactions for the years ended December 31, 2019 and 2018 with related parties were as follows:

|   | <u>Consolidated</u>         |             | Unit : Million Baht |             |
|---|-----------------------------|-------------|---------------------|-------------|
|   | <u>financial statements</u> |             | <u>Separate</u>     |             |
|   | <u>2019</u>                 | <u>2018</u> | <u>2019</u>         | <u>2018</u> |
| <b>Parent</b>   |                             |             |                     |             |
| Sales of goods or rendering of services                           | 29,047                      | 124,542     | 28,886              | 121,869     |
| Purchases of goods or receiving of services                       | 237,553                     | 310,191     | 236,347             | 307,987     |
| Other income  | 26                          | 76          | 5                   | 26          |
| Other expense   | 193                         | 115         | 129                 | 85          |
| Purchase of assets  | -                           | 6,944       | -                   | -           |
| <b>Subsidiaries</b>   |                             |             |                     |             |
| Sales of goods or rendering of services                           | -                           | -           | 99,395              | 107,775     |
| Purchases of goods or receiving of services                       | -                           | -           | 3,661               | 3,364       |
| Interest income   | -                           | -           | 15                  | 16          |
| Dividend income   | -                           | -           | 2,666               | 2,912       |
| Other income  | -                           | -           | 1,144               | 1,263       |
| Interest expense  | -                           | -           | 762                 | 427         |
| Other expense   | -                           | -           | 1,971               | 2,146       |
| Expense capitalised to fixed assets                               | -                           | -           | 3,164               | 1,015       |
| <b>Joint ventures</b>   |                             |             |                     |             |
| Sales of goods or rendering of services                           | 7,874                       | 9,199       | 4,469               | 4,839       |
| Purchases of goods or receiving of services                       | 3,745                       | 4,042       | 204                 | 297         |
| Interest income   | 145                         | 242         | 143                 | 240         |
| Dividend income   | -                           | -           | 828                 | 1,242       |
| Other income  | 96                          | 70          | 80                  | 63          |
| Other expense   | 1                           | 2           | 1                   | 2           |
| <b>Associates</b>   |                             |             |                     |             |
| Sales of goods or rendering of services                           | 5,831                       | 9,684       | 4,531               | 5,720       |
| Purchases of goods or receiving of services                       | 12,916                      | 9,635       | 7,220               | 4,783       |
| Interest income   | 163                         | -           | 163                 | -           |
| Dividend income   | 4                           | 2           | 871                 | 730         |
| Other income  | 242                         | 69          | 150                 | 68          |
| Other expense   | 459                         | 462         | 353                 | 342         |
| Expense capitalised to fixed assets                               | 304                         | 122         | 224                 | 50          |
| <b>Other related parties</b>                                      |                             |             |                     |             |
| Sales of goods or rendering of services                           | 156,928                     | 127,249     | 150,458             | 122,271     |
| Purchases of goods or receiving of services                       | 16,577                      | 22,608      | 15,312              | 21,074      |
| Other income  | 59                          | 182         | 22                  | 175         |
| Other expense   | 435                         | 431         | 335                 | 320         |
| Expense capitalised to fixed assets                               | 40                          | 75          | 24                  | 67          |
| <b>Key management personnel</b>                                   |                             |             |                     |             |
| Key management personnel compensation                             |                             |             |                     |             |
| Short-term benefits   | 374                         | 369         | 193                 | 192         |
| Post-employment benefits and<br>other long-term employee benefits | 14                          | 5           | 12                  | 4           |
| <b>Total key management personnel<br/>compensation</b>            | <b>388</b>                  | <b>374</b>  | <b>205</b>          | <b>196</b>  |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Balances as at December 31, 2019 and 2018 with related parties were as follows:

|  | <u>Consolidated</u>         |               | Unit : Million Baht |               |
|--|-----------------------------|---------------|---------------------|---------------|
|  | <u>financial statements</u> |               | <u>Separate</u>     |               |
|  | <u>2019</u>                 | <u>2018</u>   | <u>2019</u>         | <u>2018</u>   |
| <i>Trade receivables - related parties</i> |                             |               |                     |               |
| Parent                                     | 2,265                       | 3,576         | 2,251               | 3,554         |
| Subsidiaries                               | -                           | -             | 6,942               | 9,520         |
| Joint ventures                             | 838                         | 1,192         | 374                 | 556           |
| Associates                                 | 378                         | 716           | 318                 | 404           |
| Other related parties                      | 13,240                      | 12,117        | 12,548              | 11,674        |
| <b>Total</b>                               | <b>16,721</b>               | <b>17,601</b> | <b>22,433</b>       | <b>25,708</b> |

|  | <u>Consolidated</u>         |              | Unit : Million Baht |              |
|--|-----------------------------|--------------|---------------------|--------------|
|  | <u>financial statements</u> |              | <u>Separate</u>     |              |
|  | <u>2019</u>                 | <u>2018</u>  | <u>2019</u>         | <u>2018</u>  |
| <i>Other receivables - related parties</i> |                             |              |                     |              |
| Parent                                     | 38                          | 49           | 36                  | 42           |
| Subsidiaries                               | -                           | -            | 425                 | 441          |
| Joint ventures                             | 56                          | 52           | 33                  | 43           |
| Associates                                 | 211                         | 284          | 35                  | 125          |
| Other related parties                      | 655                         | 920          | 550                 | 780          |
| <b>Total</b>                               | <b>960</b>                  | <b>1,305</b> | <b>1,079</b>        | <b>1,431</b> |

### Loans to related parties

|                         | <u>Interest rate</u> |                      | <u>Consolidated</u>         |             | Unit : Million Baht |             |
|-------------------------|----------------------|----------------------|-----------------------------|-------------|---------------------|-------------|
|                         | <u>(% per annum)</u> |                      | <u>financial statements</u> |             | <u>Separate</u>     |             |
|                         | <u>2019</u>          | <u>2018</u>          | <u>2019</u>                 | <u>2018</u> | <u>2019</u>         | <u>2018</u> |
| <i>Short-term loans</i> |                      |                      |                             |             |                     |             |
| Subsidiaries            | 1.80 - 3.93          | 1.89 - 3.52          | -                           | -           | 429                 | 607         |
| Joint venture           | LIBOR<br>plus margin | LIBOR<br>plus margin | -                           | 242         | -                   | 242         |
| Associate               | Fixed rate           | -                    | 1,123                       | -           | 1,123               | -           |
| <b>Total</b>            |                      |                      | <b>1,123</b>                | <b>242</b>  | <b>1,552</b>        | <b>849</b>  |

### Long-term loans

|                |                      |                      |              |              |              |              |
|----------------|----------------------|----------------------|--------------|--------------|--------------|--------------|
| Joint ventures | LIBOR<br>plus margin | LIBOR<br>plus margin | 2,275        | 3,551        | 2,275        | 3,551        |
| <b>Total</b>   |                      |                      | <b>2,275</b> | <b>3,551</b> | <b>2,275</b> | <b>3,551</b> |

### Summary of loans to related parties

|                  |              |              |              |              |
|------------------|--------------|--------------|--------------|--------------|
| Short-term loans | 1,123        | 242          | 1,552        | 849          |
| Long-term loans  | 2,275        | 3,551        | 2,275        | 3,551        |
| <b>Total</b>     | <b>3,398</b> | <b>3,793</b> | <b>3,827</b> | <b>4,400</b> |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Movements during the years ended December 31, 2019 and 2018 of loans to related parties were as follows:

## Loans to related parties

|  | <u>Consolidated</u>         |              | Unit : Million Baht |              |
|--|-----------------------------|--------------|---------------------|--------------|
|  | <u>financial statements</u> |              | <u>Separate</u>     |              |
|  | <u>2019</u>                 | <u>2018</u>  | <u>2019</u>         | <u>2018</u>  |
| <b>Short-term loans</b>                        |                             |              |                     |              |
| <b>Subsidiaries</b>                            |                             |              |                     |              |
| As at January 1,                               | -                           | -            | 607                 | 476          |
| Increase                                       | -                           | -            | -                   | 251          |
| Decrease                                       | -                           | -            | (178)               | (120)        |
| <b>As at December 31,</b>                      | <b>-</b>                    | <b>-</b>     | <b>429</b>          | <b>607</b>   |
| <b>Joint venture</b>                           |                             |              |                     |              |
| As at January 1,                               | 242                         | -            | 242                 | -            |
| Increase                                       | -                           | 235          | -                   | 235          |
| Decrease                                       | (225)                       | -            | (225)               | -            |
| Effect of change in exchange rates             | (17)                        | 7            | (17)                | 7            |
| <b>As at December 31,</b>                      | <b>-</b>                    | <b>242</b>   | <b>-</b>            | <b>242</b>   |
| <b>Associate</b>                               |                             |              |                     |              |
| As at January 1,                               | -                           | -            | -                   | -            |
| Increase                                       | 8,000                       | -            | 8,000               | -            |
| Decrease                                       | (6,877)                     | -            | (6,877)             | -            |
| <b>As at December 31,</b>                      | <b>1,123</b>                | <b>-</b>     | <b>1,123</b>        | <b>-</b>     |
| <b>Total</b>                                   |                             |              |                     |              |
| As at January 1,                               | 242                         | -            | 849                 | 476          |
| Increase                                       | 8,000                       | 235          | 8,000               | 486          |
| Decrease                                       | (7,102)                     | -            | (7,280)             | (120)        |
| Effect of change in exchange rates             | (17)                        | 7            | (17)                | 7            |
| <b>As at December 31,</b>                      | <b>1,123</b>                | <b>242</b>   | <b>1,552</b>        | <b>849</b>   |
| <b>Long-term loans</b>                         |                             |              |                     |              |
| <b>Joint ventures</b>                          |                             |              |                     |              |
| As at January 1,                               | 3,551                       | 6,665        | 3,551               | 6,665        |
| Increase                                       | 767                         | -            | 767                 | -            |
| Decrease                                       | (1,827)                     | (3,212)      | (1,827)             | (3,212)      |
| Effect of change in exchange rates             | (216)                       | 98           | (216)               | 98           |
| <b>As at December 31,</b>                      | <b>2,275</b>                | <b>3,551</b> | <b>2,275</b>        | <b>3,551</b> |
| <b>Investments in subsidiaries (Note 10)</b>   |                             |              |                     |              |
|  | -                           | -            | 72,551              | 67,783       |
| <b>Investments in joint ventures (Note 11)</b> |                             |              |                     |              |
|  | 32,444                      | 30,758       | 15,373              | 15,373       |
| <b>Investments in associates (Note 12)</b>     |                             |              |                     |              |
|  | 29,829                      | 15,450       | 26,813              | 9,793        |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

|   | Unit : Million Baht         |                      |                             |                      |
|---|-----------------------------|----------------------|-----------------------------|----------------------|
|   | <u>Consolidated</u>         |                      | <u>Separate</u>             |                      |
|   | <u>financial statements</u> |                      | <u>financial statements</u> |                      |
|   | <u>2019</u>                 | <u>2018</u>          | <u>2019</u>                 | <u>2018</u>          |
| <i>Trade payables - related parties</i> |                             |                      |                             |                      |
| Parent                                  | 17,400                      | 23,678               | 17,362                      | 23,604               |
| Subsidiaries                            | -                           | -                    | 112                         | 36                   |
| Joint ventures                          | 386                         | 562                  | 11                          | 60                   |
| Associates                              | 1,386                       | 1,817                | 691                         | 792                  |
| Other related parties                   | 1,555                       | 2,110                | 1,294                       | 1,655                |
| <b>Total</b>                            | <b><u>20,727</u></b>        | <b><u>28,167</u></b> | <b><u>19,470</u></b>        | <b><u>26,147</u></b> |

|   |                   |                   |                     |                     |
|---|-------------------|-------------------|---------------------|---------------------|
| <i>Other payables - related parties</i> |                   |                   |                     |                     |
| Parent                                  | 90                | 43                | 69                  | 20                  |
| Subsidiaries                            | -                 | -                 | 1,230               | 1,121               |
| Joint ventures                          | 16                | 7                 | 3                   | 3                   |
| Associates                              | 112               | 150               | 77                  | 109                 |
| Other related parties                   | 215               | 143               | 196                 | 124                 |
| <b>Total</b>                            | <b><u>433</u></b> | <b><u>343</u></b> | <b><u>1,575</u></b> | <b><u>1,377</u></b> |

|  |                   |                   |                     |                   |
|--|-------------------|-------------------|---------------------|-------------------|
| <i>Payables to contractors - related parties</i> |                   |                   |                     |                   |
| Subsidiaries                                     | -                 | -                 | 1,550               | 569               |
| Associates                                       | 101               | 81                | 94                  | 51                |
| Other related parties                            | 3                 | 24                | 3                   | 3                 |
| <b>Total</b>                                     | <b><u>104</u></b> | <b><u>105</u></b> | <b><u>1,647</u></b> | <b><u>623</u></b> |

|   | Unit : Million Baht  |             |                             |                 |                             |                      |
|---|----------------------|-------------|-----------------------------|-----------------|-----------------------------|----------------------|
|   | <u>Interest rate</u> |             | <u>Consolidated</u>         |                 | <u>Separate</u>             |                      |
|   | <u>(% per annum)</u> |             | <u>financial statements</u> |                 | <u>financial statements</u> |                      |
|   | <u>2019</u>          | <u>2018</u> | <u>2019</u>                 | <u>2018</u>     | <u>2019</u>                 | <u>2018</u>          |
| <i>Short-term borrowings</i>                      |                      |             |                             |                 |                             |                      |
| Subsidiaries                                      | 1.10                 | 1.10        | -                           | -               | 3,041                       | 1,931                |
| <b>Total</b>                                      |                      |             | <b><u>-</u></b>             | <b><u>-</u></b> | <b><u>3,041</u></b>         | <b><u>1,931</u></b>  |
| <i>Long-term borrowing</i>                        |                      |             |                             |                 |                             |                      |
| Subsidiary  | 4.68                 | 4.68        | -                           | -               | 14,991                      | 16,105               |
| <b>Total</b>                                      |                      |             | <b><u>-</u></b>             | <b><u>-</u></b> | <b><u>14,991</u></b>        | <b><u>16,105</u></b> |
| <i>Summary of borrowings from related parties</i> |                      |             |                             |                 |                             |                      |
| Short-term borrowings                             |                      |             | -                           | -               | 3,041                       | 1,931                |
| Long-term borrowing                               |                      |             | -                           | -               | 14,991                      | 16,105               |
| <b>Total</b>                                      |                      |             | <b><u>-</u></b>             | <b><u>-</u></b> | <b><u>18,032</u></b>        | <b><u>18,036</u></b> |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Movements during the years ended December 31, 2019 and 2018 of borrowings from related parties were as follows:

|   | Unit : Million Baht         |             |                             |               |
|---|-----------------------------|-------------|-----------------------------|---------------|
|   | <u>Consolidated</u>         |             | <u>Separate</u>             |               |
|   | <u>financial statements</u> |             | <u>financial statements</u> |               |
|   | <u>2019</u>                 | <u>2018</u> | <u>2019</u>                 | <u>2018</u>   |
| <b>Short-term borrowings</b>            |                             |             |                             |               |
| <b>Subsidiaries</b>                     |                             |             |                             |               |
| As at January 1,                        | -                           | -           | 1,931                       | 2,558         |
| Increase                                | -                           | -           | 1,580                       | 105           |
| Decrease                                | -                           | -           | (470)                       | (732)         |
| <b>As at December 31,</b>               | <b>-</b>                    | <b>-</b>    | <b>3,041</b>                | <b>1,931</b>  |
| <b>Long-term borrowing</b>              |                             |             |                             |               |
| <b>Subsidiary</b>                       |                             |             |                             |               |
| As at January 1,                        | -                           | -           | 16,105                      | -             |
| Increase                                | -                           | -           | -                           | 16,473        |
| Effect of change in exchange rate       | -                           | -           | (1,132)                     | (300)         |
|   | -                           | -           | <b>14,973</b>               | <b>16,173</b> |
| Amortise (less) deferred financing cost | -                           | -           | 18                          | (68)          |
| <b>As at December 31,</b>               | <b>-</b>                    | <b>-</b>    | <b>14,991</b>               | <b>16,105</b> |

### *Significant agreements with related parties*

The Group has significant agreements with related parties as at December 31, 2019 as follows:

#### ***Olefins Sales and Purchase Agreements***

The Company has 4 Ethylene sales and purchase agreements with a parent company and 2 related parties. Selling prices are determined based on Ethylene price in the world market. These agreements are for the periods from 7 years to 21 years, commencing from the effective date specified in each agreement. One agreement that is expired in July 2020 is automatically renewed except for advance cancellation not less than 1 year through written notice by each party. Other three agreements will expire in December 2021, May 2022 and December 2027.

The Company has 3 Propylene sales and purchase agreements with 3 related parties. Selling prices are determined based on Polypropylene plastic pellets and Propylene prices in the world market. Two agreements are for the periods from 5 years to 11 years, commencing from the effective date specified in each agreement and expiring in December 2021 and December 2026 and another agreement is for the period 15 years, start from the plant commercial operation date.

#### ***By-Product Sales and Purchase Agreements***

The Company has a Hydrogen sales and purchase agreement with 2 related parties. Selling price in the agreement is determined based on Natural Gas price for the industry. The agreement is for the period of 15 years, commencing from the date as specified in the agreement and expiring in March 2024 and another agreement is for the period of 15 years, start from the plant commercial operation date or one hundred and eighty (180) days from the first date of counter party's plant start receiving product from the company, whichever occurs earlier.

The Company has a Tail Gas sales and purchase agreement with a related party. Selling price in the agreement is determined based on Natural Gas price for the industry. The agreement is for the period of 15 years, commencing from the date as specified in the agreement and expiring in August 2021.

The Company has a Butene sales and purchase agreement with a related party. Selling price in the agreement is determined based on Butene Price in the world market. The agreement is for the period of 1 year, commencing from the date as specified in the agreement and expiring in December 2019.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## *Utilities and Other Services Agreements*

The Company has 3 Power Supply agreements with 3 related parties. Selling prices in these agreements are determined based on reference price from the Provincial Electricity Authority. These agreements are for the periods of 6 years 8 months and 15 years, commencing from the date as specified in each agreement and expiring in September 2022, June 2027 and September 2028.

The Company has 6 Utilities agreements covering electricity, steam and demineralised water with a related party. These agreements are for the periods from 12 years to 19 years 9 months, commencing from the date as specified in each agreement and expiring in December 2028.

The Company and certain related parties have many Utilities agreements for the industries covering electricity, steam, and water for industrial use with a related party. These agreements are for the periods from 15 years to 20 years, commencing from the date as specified in each agreement and expiring from December 2021 to June 2033 and two agreements are for the period 15 years, start from the plant commercial operation date. All agreements can be renewed for the period of 5 years with the terms and conditions agreed by both parties.

The Company has Tank Farm Storage and Service Agreement with a related party covering tank storage, utilities for product warehouse and transportation of Methanol. This agreement is for the period of 15 years, commencing from the effective date as specified in each agreement and expiring in March 2034, with the service charge as stipulated in the agreement.

## *Feedstock and Fuel Gas Sales and Purchase Agreements*

The Company has 3 LPG sales and purchase agreements with a parent company. The selling price is determined based on the Polypropylene plastic pellets price. These agreements are for the periods from 8 years 7 months to 15 years, commencing from the date as specified in the agreement. Two agreements will expire in December 2020 and one agreement will expire in May 2021.

The Company has a Natural Gas sales and purchase agreement with a parent company. The selling price is determined based on gas price as specified in the agreement. The agreement is for the period of 20 years, commencing from the date as specified in the agreement. Subsequently, the agreement is renewed for the period of 2 years 3 months and expiring in March 2021.

The Company has 2 Natural Gas sales and purchase agreements with a parent company. Selling prices are determined based on gas price as specified in the agreement and Thailand Producer Price Index as classification of products by activity (CPA). These agreements are for the periods of 10 years, commencing from the date as specified in each agreement and expiring in May 2023 and December 2029.

The Company and 2 related parties have various Natural Gas sales and purchase agreements with a parent company. Selling price in an agreement is determined based on fuel oil prices and Thailand Producer Price Index (PPI). These agreements are for the periods from 10 years to 15 years, commencing from the date as specified in each agreement and expiring from June 2020 to December 2029.

The Company has a Natural Gas Liquid sales and purchase agreement with a parent company. The selling price is determined based on the standard price of Naphtha in the region. The agreement is for the period of 15 years, commencing from the date as specified in the agreement and expiring in May 2021. The agreement is renewable for the period of 5 years with the agreement of both parties.

The Company has 2 Ethane, Propane and LPG sales and purchase agreements with a parent company. Selling price in an agreement is determined based on the high density Polyethylene plastic pellets and Polypropylene plastic pellets price and selling price in another agreement is determined based on the high density Polyethylene plastic pellets price. These agreements have been extended and consequently will expire in December 2020.

The Company has 2 Ethane sales and purchase agreement with a parent company. The selling price is determined based on prices prevailing in the high density Polyethylene price in the world market. These agreements are for the periods from 1 year 11 months to 15 years, commencing from the date as specified in the agreements and expiring in December 2020 and January 2025.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

The Company has an Ethane Rich Gas sales and purchase agreement with a related party. The selling price is determined based on prevailing prices of Polyethylene and Polypropylene in the region. This agreement is for the period of 10 years and will expire in January 2021.

From August 1, 2012, the Company has entered into the adjustment of the pricing formula in the sales and purchase agreements of petrochemical natural gas feedstock with a parent company.

## ***Petroleum Product Offtake Agreement***

The Company has a Petroleum Product sales and purchase agreement with a parent company and a related party. For domestic sales, the product price reflects prices prevailing in Thailand for products of a similar quality that are sold in or imported to Thailand. For export sales, the product price reflects the prevailing international spot price for that product. This agreement is for the period of 18 years, commencing from the date as specified in the agreement and expiring in February 2024. The agreement is automatically renewed except for advance cancellation through written notice by each party.

## ***Expansion Phase Product Offtake Agreement***

The Company has an expansion phase product offtake agreement with a parent company and a related party, which a parent company and a related party agree to purchase 100% of the volume of refined petroleum products produce by reforming and upgrading complexes. As specified in the Product Offtake Agreement, at least 50% of such volume will be sold at a competitive domestic market price and the remaining sold at a competitive export market price or other mutually agreed price. The agreement is for the period of 18 years, commencing from the date as specified in the agreement and expiring in February 2024. The agreement is automatically renewed except for advance cancellation through written notice by each party.

## ***Long-term Crude Oil and Other Raw materials Supply Agreements***

The Company entered into 2 supply agreements for crude oil and other raw materials with a parent company, the reference price being based on market price of crude oil and other raw materials. One agreement is for the periods of 18 years, will expire in February 2024 and another agreement is for the periods of 20 years, was automatically renewed and will expire in December 2020. These agreements are automatically renewed except for advance cancellation through written notice by each party.

## ***Crack Spread Swap Agreements***

The Company has entered into many crack spread swap agreements with a related party to hedge the Company's oil refinery margin. Under the agreements the floating amount of the basket refinery margin, (calculated crack spread based on the Singapore price of refined petroleum products, which are Naphtha, Gasoline, Gasoil, Kerosene and Fuel Oil, against the price of Dubai crude oil), is swapped for a fixed amount of the basket refinery margin for a fixed quantity per month. Under the agreements, the Company shall receive or make payment for the crack spread difference according to terms and conditions stipulated in the agreements.

## ***Product Spread Swap Agreements***

The Company has entered into many petrochemical product margin spread swap agreements with a related party to hedge the Company's petrochemical margin. Under the agreements the floating amount of the petrochemical margin, (calculated margin spread based on the key markets petrochemical products, Paraxylene, Benzene and other products against the Naphtha price), is swapped for a fixed amount of the petrochemical margin for a fixed quantity per month. Under the agreements, the Company shall receive or make payment of the product spread difference according to terms and conditions stipulated in the agreements.

## ***Crude Oil Price Hedging Agreements***

The Company has entered into many crude oil price hedging agreements to mitigate price risk with a related party. As at December 31, 2019 and 2018, the Company has no oil volume under the agreements.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## *Sales and Purchase Aromatics Product Agreements*

The Company, a parent company, related parties and various other companies have entered into many raw material and product sales and purchase agreements. The sales and purchase prices of raw material and product are based on the prices specified in the agreements. These agreements are for the periods from 1 year to 11 years 9 months, commencing from the effective date as specified in each agreement. The agreements will expire from March 2020 to December 2026. Other agreements are automatically renewed except for a cancellation through written notice by each party.

## *Polyethylene plastic pellets Sales and Purchase Agreements*

The Company and a related party have 2 Polyethylene plastic pellets sales and purchase agreements with another related party. The Company and a related party agrees to sell all Polyethylene plastic pellets to the other related party for distributing to the customers in the market. The Polyethylene pricing structure is linked to the Polyethylene product price that the related party sells to end customers, adjusted by the marketing expenses specified in the agreements. These agreements are for the period of 15 years, commencing from the effective date as specified in each agreement. One agreement will expire in December 2021 and another will expire in June 2023.

## *Lending and Borrowing Agreements*

The Company has unsecured short-term lending agreements for the period of 3 years through Liquidity Management System (“LMS”) with 7 related parties with the credit facility of Baht 3,000 million, Baht 1,000 million, Baht 800 million, Baht 350 million, Baht 300 million and Baht 80 million. These loans bear interest based on market rate referenced to BIBOR O/N plus interest rate spread.

The Company has an unsecured short-term lending agreement for the period of 1 year with a related party with the credit facility of Baht 8,000 million. This loans bear interest at the fixed rate.

The Company has an unsecured long-term lending agreement for the period of 3.5 years with a related party with the credit facility of USD 238.36 million. This loan bears interest based on market rate referenced to LIBOR plus interest rate spread.

The Company has a secured long-term lending agreement for the period of 5 years with a related party with the credit facility of USD 7.9 million. This loan bears interest based on market rate referenced to LIBOR plus interest rate spread.

The Company has an unsecured long-term lending agreement for the period of 2 years with a related party with the credit facility of USD 17 million. This loan bears interest based on market rate referenced to LIBOR plus interest rate spread.

The Company has unsecured short-term borrowing agreements for the period of 3 years through LMS with 7 related parties with the credit facility of Baht 4,000 million, Baht 2,500 million, Baht 400 million, Baht 200 million, Baht 60 million and Baht 50 million. These loans bear interest based on market rate referenced to BIBOR O/N minus interest rate spread.

The Company has an unsecured long-term borrowing agreement for the period of 4.2 years with a related party with the credit facility of USD 495.89 million. This loan bear interest at the fixed rate.

## *Service Agreements*

The Company has Shared Service agreements with 24 related parties for the provision of general services. All of these agreements are effective from the date as specified in the agreements and the service charges will be agreed in the fourth quarter of each year.

The Company has a Technical Services agreement with a related party. Under which the Company agreed to obtain certain technical advisory services. The agreement is for the period of 3 years 4 months and will expire in December 2019.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

The Company has Management and Engineering agreement, Design, Supply, Construction and Installation agreement, Inspection of Construction, Equipment and Machinery agreement and Management and Maintenance Work agreement with a related party. These agreements are for the periods from 1 year 3 months to 5 years, commencing from the date as specified in the agreements and expiring in June 2023.

The Company has 3 Services agreements to have the right to lay the pipelines for delivery of raw material and product on pipeline structure with a parent company. These agreements are for the period of 15 years from the agreement date and will expire in May 2023, July 2024 and June 2025.

The Company has a Security Service agreement with a related party. Under which the related party agrees to provide security service to asset, employees and visitors in the location of the Company. The agreement is for the period of 2 years and will expire in December 2020.

The Company has a Safety Inspection Service agreement and an Emergency Control Center agreement with a related party. These agreements are for the period from 2 years to 3 years and will expire in December 2020 with service rate as stipulated in the agreement.

The Company has Warehouse Management agreements with a related party. The agreements are for the periods from 1 year to 21 years 3 months and expiring from December 2020 to December 2030.

The Company has a Logistics Services agreement with a related party. The agreement is for the period of 3 years 1 month and will expire in December 2020.

The Company has entered into 2 Information and Communication Technology Service agreements with a related party. Under which the related party agrees to provide Information Technology system maintenance and support services, system structure and data centre management, system supporting and advisory, including system design and development as the Company's requirements. These agreements are for the periods from 1 year to 15 years, commencing from the date as specified in the agreements and expiring in December 2020 and December 2027.

The Company has Share Service agreement for Engineering, Procurement and Construction (EPC) Phase with 2 related parties. The agreement is effective from the date as specified in the agreement for the period of 3 years. This agreement will expire at least 6 months before the completion of EPC Phase and can be terminated by providing not less than 3 months advance written notice to the counter party.

## ***Rental Agreements***

The Company has Office Rental and Service agreement with a related party. The agreement is for the period of 3 years and will expire in September 2021 with rental and service rate and conditions as stipulated in the agreement.

The Company has entered into Land Lease agreement with a parent company to operate jetty and buffer tank farm services. The agreement is for the period of 23 years 6 months, commencing from the date signed in the agreement by both parties, and will expire in December 2037 with land lease rate and condition as specified in the agreement.

The Company has various Land Lease agreements with related parties. These agreements are for the periods from 14 years to 20 years, commencing from the date as specified in the agreements, and expiring from February 2029 to December 2038 with land lease rate and condition as specified in the agreements.

A subsidiary has Land Lease and Office Rental agreements with 4 related parties. These agreements are for the periods from 3 years to 30 years, commencing from the date as specified in the agreements and the renewal of the contract will be subject to negotiation with the counter party.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## 28. FINANCIAL INFORMATION BY SEGMENT

The Group has significant business segments which offer different products and services, and are managed separately. For each of the business segments, the chief operating decision maker (CODM) reviews internal management reports on at least a quarterly basis. The operations in each of the Group's reportable segments have 7 reportable segments as follows;

|           |  |
|-----------|--|
| Segment 1 | Refinery   |
| Segment 2 | Aromatics  |
| Segment 3 | Olefins and Derivatives                            |
| Segment 4 | Green Chemicals                                    |
| Segment 5 | Performance Materials and Chemicals                |
| Segment 6 | Service and Others                                 |
| Segment 7 | Investments in Other Joint Ventures and Associates |

Performance information of each reportable segment is measured based on segment profit before finance cost, income tax, depreciation and amortisation which as included in the internal management reports that are reviewed by the Group's CODM. Management believes that using profit before finance cost, income tax, depreciation and amortisation to measure performance is the most relevant in evaluating the results of certain segments relative to other entities that operate within these industries.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## Information about reporting segments for the year ended December 31, 2019

|   | <u>Refinery</u> | <u>Aromatics</u> | <u>Olefins and Derivatives</u> | <u>Green Chemicals</u> | <u>Performance Materials and Chemicals</u> | <u>Service and Others</u> | <u>Investments in Other Joint Ventures and Associates</u> | <u>Elimination</u> | <u>Unit : Million Baht Total</u> |
|---|-----------------|------------------|--------------------------------|------------------------|--|---------------------------|---|--------------------|----------------------------------|
| External revenues   | 175,036         | 54,653           | 132,338                        | 12,017                 | 36,769                                     | 1,997                     | -   | -                  | 412,810                          |
| Inter-segment revenues  | 17,417          | 54,549           | 10,418                         | 1,037                  | -  | 6,455                     | -   | (89,876)           | -                                |
| <b>Total revenues</b>   | <b>192,453</b>  | <b>109,202</b>   | <b>142,756</b>                 | <b>13,054</b>          | <b>36,769</b>                              | <b>8,452</b>              | <b>-</b>  | <b>(89,876)</b>    | <b>412,810</b>                   |
| Cost of sales and rendering of services                                       | (187,844)       | (107,204)        | (117,865)                      | (11,795)               | (31,026)                                   | (6,289)                   | -   | 89,529             | (372,494)                        |
| Selling and administrative expenses   | (913)           | (1,728)          | (8,314)                        | (936)                  | (2,424)                                    | (2,132)                   | -   | 1,376              | (15,071)                         |
| <b>Profit before finance costs, income tax, depreciation and amortisation</b> | <b>4,208</b>    | <b>1,042</b>     | <b>17,085</b>                  | <b>604</b>             | <b>3,533</b>                               | <b>1,340</b>              | <b>-</b>  | <b>(10)</b>        | <b>27,802</b>                    |
| Interest income   | 115             | 69               | 362                            | 54                     | 63   | 375                       | -   | (48)               | 990                              |
| Finance costs   | (388)           | (171)            | (450)                          | (79)                   | (445)                                      | (1,681)                   | -   | 95                 | (3,119)                          |
| Depreciation and amortisation   | (2,784)         | (3,259)          | (9,692)                        | (519)                  | (2,727)                                    | (744)                     | -   | 212                | (19,513)                         |
| Reversal of expenses from raw materials derogation                            | -               | -                | -                              | 232                    | -  | -                         | -   | -                  | 232                              |
| Gain on bargain purchase  | -               | -                | 31                             | -                      | -  | -                         | -   | -                  | 31                               |
| Dividend income   | -               | -                | -                              | -                      | -  | 3,538                     | -   | (3,527)            | 11                               |
| Share of profit (loss) of investments in joint ventures                       | -               | -                | (73)                           | 60                     | -  | -                         | 2,639   | -                  | 2,626                            |
| Share of profit (loss) of investments in associates                           | -               | -                | (5)                            | (29)                   | -  | -                         | 1,972   | (5)                | 1,933                            |
| Others  | (173)           | (84)             | 18                             | (3)                    | 194  | 2,051                     | -   | 3                  | 2,006                            |
| <b>Profit (loss) before income tax</b>  | <b>978</b>      | <b>(2,403)</b>   | <b>7,276</b>                   | <b>320</b>             | <b>618</b>                                 | <b>4,879</b>              | <b>4,611</b>  | <b>(3,280)</b>     | <b>12,999</b>                    |
| <b>Profit (loss) for reportable segment</b>                                   | <b>1,008</b>    | <b>(2,381)</b>   | <b>7,022</b>                   | <b>162</b>             | <b>395</b>                                 | <b>4,126</b>              | <b>4,611</b>  | <b>(3,261)</b>     | <b>11,682</b>                    |
| Owners of the parent  |                 |                  |                                |                        |  |                           |   |                    |                                  |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## Information about reporting segments for the year ended December 31, 2018

|   | <u>Refinery</u> | <u>Aromatics</u> | <u>Olefins and<br/>Derivatives</u> | <u>Green<br/>Chemicals</u> | <u>Performance<br/>Materials and<br/>Chemicals</u> | <u>Service and<br/>Others</u> | <u>Investments in<br/>Other Joint<br/>Ventures and<br/>Associates</u> | <u>Elimination</u> | <u>Unit : Million Baht<br/>Total</u> |
|---|-----------------|------------------|------------------------------------|----------------------------|--|-------------------------------|---|--------------------|--------------------------------------|
| External revenues   | 227,034         | 92,601           | 135,126                            | 15,233                     | 46,751   | 1,910                         | -   | -                  | 518,655                              |
| Inter-segment revenues  | 23,877          | 53,968           | 13,134                             | 984                        | 135  | 3,984                         | -   | (96,082)           | -                                    |
| <b>Total revenues</b>   | <b>250,911</b>  | <b>146,569</b>   | <b>148,260</b>                     | <b>16,217</b>              | <b>46,886</b>                                      | <b>5,894</b>                  | -   | <b>(96,082)</b>    | <b>518,655</b>                       |
| Cost of sales and rendering of services   | (242,617)       | (138,697)        | (106,392)                          | (14,618)                   | (37,677)   | (3,969)                       | -   | 96,013             | (447,957)                            |
| Selling and administrative expenses   | (786)           | (1,656)          | (7,173)                            | (835)                      | (2,362)  | (2,184)                       | -   | 1,352              | (13,644)                             |
| <b>Profit before finance costs, income tax,<br/>depreciation and amortisation</b> | <b>7,960</b>    | <b>5,750</b>     | <b>35,137</b>                      | <b>859</b>                 | <b>6,998</b>                                       | <b>1,303</b>                  | -   | <b>256</b>         | <b>58,263</b>                        |
| Interest income   | 178             | 159              | 462                                | 54                         | 59   | 322                           | -   | (58)               | 1,176                                |
| Finance costs   | (382)           | (126)            | (642)                              | (233)                      | (465)  | (1,824)                       | -   | 79                 | (3,593)                              |
| Depreciation and amortisation   | (3,592)         | (3,343)          | (8,538)                            | (529)                      | (2,925)  | (552)                         | -   | 199                | (19,280)                             |
| Expenses from raw materials derogation  | -               | -                | -                                  | (2,004)                    | -  | -                             | -   | -                  | (2,004)                              |
| Gain on bargain purchase  | -               | -                | 1,355                              | -                          | -  | -                             | -   | -                  | 1,355                                |
| Dividend income   | -               | -                | -                                  | 25                         | -  | 4,214                         | -   | (4,202)            | 37                                   |
| Share of profit of investments in<br>joint ventures                               | -               | -                | -                                  | 118                        | -  | -                             | 5,091   | -                  | 5,209                                |
| Share of profit of investments in associates                                      | -               | -                | 4                                  | (8)                        | -  | -                             | 1,672   | 18                 | 1,686                                |
| Others  | 12              | 120              | 369                                | 22                         | 200  | (318)                         | -   | 3                  | 408                                  |
| <b>Profit (loss) before income tax</b>  | <b>4,176</b>    | <b>2,560</b>     | <b>28,147</b>                      | <b>(1,696)</b>             | <b>3,867</b>                                       | <b>3,145</b>                  | <b>6,763</b>  | <b>(3,705)</b>     | <b>43,257</b>                        |
| <b>Profit (loss) for reportable segment</b>                                       | <b>4,031</b>    | <b>2,269</b>     | <b>25,118</b>                      | <b>(1,056)</b>             | <b>4,173</b>                                       | <b>2,467</b>                  | <b>6,763</b>  | <b>(3,696)</b>     | <b>40,069</b>                        |
| Owners of the parent  |                 |                  |                                    |                            |  |                               |   |                    |                                      |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

|   | <u>Refinery</u> | <u>Aromatics</u> | <u>Olefins and<br/>Derivatives</u> | <u>Green<br/>Chemicals</u> | <u>Performance<br/>Materials and<br/>Chemicals</u> | <u>Service and<br/>Others</u> | <u>Investments in<br/>Other Joint<br/>Ventures and<br/>Associates</u> | <u>Elimination</u> | <u>Unit : Million Baht<br/>Total</u> |
|---|-----------------|------------------|------------------------------------|----------------------------|--|-------------------------------|---|--------------------|--------------------------------------|
| <b>As at December 31, 2019</b>  |                 |                  |                                    |                            |  |                               |   |                    |                                      |
| Segment assets  | 64,704          | 69,264           | 162,080                            | 13,289                     | 60,473   | 94,124                        | 60,904  | (72,324)           | 452,514                              |
| Investment in joint ventures and associates                                     | -               | -                | 244                                | 1,125                      | -  | -                             | 60,904  | -                  | 62,273                               |
| Change in non-current assets<br>(excluding deferred tax assets and derivatives) | 1,293           | (494)            | 6,057                              | (36)                       | 6,142  | (1,966)                       | 15,534  | (3,235)            | 23,295                               |
| <b>As at December 31, 2018</b>  |                 |                  |                                    |                            |  |                               |   |                    |                                      |
| Segment assets  | 72,671          | 74,561           | 179,071                            | 14,226                     | 60,628   | 90,078                        | 45,370  | (67,350)           | 469,255                              |
| Investment in joint ventures and associates                                     | -               | -                | 46                                 | 792                        | -  | -                             | 45,370  | -                  | 46,208                               |
| Change in non-current assets<br>(excluding deferred tax assets and derivatives) | (2,362)         | (848)            | 19,245                             | (135)                      | 7,806  | 23,135                        | 4,590   | (21,696)           | 29,735                               |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## Geographical segments

In presenting information on the basis of geographical segments, segment revenue from sale of goods and rendering of services for the years ended December 31, 2019 and 2018 are based on the geographical location of customers. Segment non-current assets (exclude derivatives and deferred tax) as at December 31, 2019 and 2018 are based on the geographical location of the assets.

## Geographical information

|                                | Unit: Million Baht    |                       |
|--------------------------------|-----------------------|-----------------------|
|                                | Revenues              |                       |
|                                | <u>2019</u>           | <u>2018</u>           |
| Thailand                       | 260,869               | 316,080               |
| The People's Republic of China | 42,994                | 70,588                |
| Singapore                      | 20,021                | 34,337                |
| Vietnam                        | 17,278                | 27,524                |
| Malaysia                       | 13,517                | 7,292                 |
| Indonesia                      | 6,052                 | 7,079                 |
| India                          | 5,108                 | 7,150                 |
| Japan                          | 4,481                 | 4,589                 |
| United States of America       | 2,786                 | 3,509                 |
| Other countries                | 39,704                | 40,507                |
| <b>Total</b>                   | <b><u>412,810</u></b> | <b><u>518,655</u></b> |

|                          | Unit: Million Baht   |                       |
|--------------------------|--|-----------------------|
|                          | Non-current assets<br>(excluding deferred tax<br>assets and derivatives) |                       |
|                          | <u>2019</u>  | <u>2018</u>           |
| Thailand                 | 324,881  | 302,864               |
| United States of America | 10,242   | 8,353                 |
| France                   | 6,900  | 7,681                 |
| Malaysia                 | 4,505  | 4,526                 |
| Other countries          | 419  | 228                   |
| <b>Total</b>             | <b><u>346,947</u></b>  | <b><u>323,652</u></b> |

## Major customers

The Group's revenue from sale of goods and rendering of services for the years ended December 31, 2019 and 2018 mainly comprise revenue from one customer of Refinery, Aromatics and Olefins and derivatives segment representing Baht 29,047 million (2018: Baht 124,542 million) and revenue from another customer of Refinery and Green Chemicals segment representing Baht 123,025 million (2018: Baht 69,948 million).

## 29. SELLING AND DISTRIBUTION EXPENSES

Selling and distribution expenses for the years ended December 31, 2019 and 2018 consisted of:

|                      | Consolidated                |                     | Unit : Million Baht |                     |
|----------------------|-----------------------------|---------------------|---------------------|---------------------|
|                      | <u>financial statements</u> |                     | <u>Separate</u>     |                     |
|                      | <u>2019</u>                 | <u>2018</u>         | <u>2019</u>         | <u>2018</u>         |
| Distribution expense | 3,534                       | 2,981               | 1,908               | 1,882               |
| Promotional expense  | 97                          | 98                  | 13                  | 19                  |
| Marketing expense    | 109                         | 120                 | 42                  | 56                  |
| Personnel expense    | 191                         | 207                 | -                   | -                   |
| <b>Total</b>         | <b><u>3,931</u></b>         | <b><u>3,406</u></b> | <b><u>1,963</u></b> | <b><u>1,957</u></b> |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

### 30. ADMINISTRATIVE EXPENSES

Administrative expenses for the years ended December 31, 2019 and 2018 consisted of:

|                                  | <u>Consolidated</u>         |               | Unit : Million Baht |              |
|----------------------------------|-----------------------------|---------------|---------------------|--------------|
|                                  | <u>financial statements</u> |               | <u>Separate</u>     |              |
|                                  | <u>2019</u>                 | <u>2018</u>   | <u>2019</u>         | <u>2018</u>  |
| Personnel expense                | 6,257                       | 5,265         | 4,401               | 3,686        |
| Professional and consultancy fee | 1,264                       | 1,624         | 1,100               | 1,569        |
| Depreciation and amortisation    | 1,211                       | 1,137         | 772                 | 690          |
| Loss on disposal of fixed assets | 50                          | 23            | -                   | 4            |
| Donation                         | 186                         | 155           | 180                 | 150          |
| Secondment fee                   | 94                          | 65            | 53                  | 97           |
| Others                           | 3,475                       | 3,180         | 2,236               | 2,040        |
| <b>Total</b>                     | <b>12,537</b>               | <b>11,449</b> | <b>8,742</b>        | <b>8,236</b> |

### 31. EMPLOYEE BENEFITS EXPENSES

Employee benefits expenses for the years ended December 31, 2019 and 2018 consisted of:

|   | <u>Note</u> | <u>Consolidated</u>         |               | Unit : Million Baht |              |
|---|-------------|-----------------------------|---------------|---------------------|--------------|
|   |             | <u>financial statements</u> |               | <u>Separate</u>     |              |
|   |             | <u>2019</u>                 | <u>2018</u>   | <u>2019</u>         | <u>2018</u>  |
| Salaries, bonus, wages and other welfares |             | 14,714                      | 13,650        | 8,695               | 8,556        |
| Contribution to provident funds           |             | 630                         | 561           | 506                 | 472          |
| Defined benefit plans                     | 23          | 1,418                       | 326           | 1,111               | 226          |
| Other long-term employee benefits         | 23          | 84                          | 58            | 45                  | 46           |
| <b>Total</b>                              |             | <b>16,846</b>               | <b>14,595</b> | <b>10,357</b>       | <b>9,300</b> |

#### *Defined contribution plans*

The defined contribution plans comprise provident funds established by the Group for its employees. Membership to the funds is on a voluntary basis. Contributions are made monthly by the employees at the minimum rate as required by law not exceeding 15% of their basic salaries and the Group contributes at the minimum rate as required by law not exceeding 15% of the employees' basic salaries. The provident funds are registered with the Ministry of Finance as juristic entities and are managed by a licensed Fund Manager.

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

### 32. EXPENSES BY NATURE

The statements of income include an analysis of expenses by function. Expenses by nature disclosed in accordance with the requirements of various TFRS were as follows:

|   | <u>Consolidated</u>         |             | Unit : Million Baht |             |
|---|-----------------------------|-------------|---------------------|-------------|
|   | <u>financial statements</u> |             | <u>Separate</u>     |             |
|   | <u>2019</u>                 | <u>2018</u> | <u>2019</u>         | <u>2018</u> |
| <i>Included in cost of sales of goods</i>                               |                             |             |                     |             |
| Changes in finished goods and work in progress                          | 1,677                       | (810)       | 1,443               | 210         |
| Raw materials used  | 324,740                     | 389,710     | 254,546             | 331,200     |
| Personnel expense   | 10,397                      | 9,123       | 5,956               | 5,614       |
| Depreciation of property, plant and equipment                           | 17,352                      | 16,311      | 12,258              | 12,217      |
| Amortisation of intangible assets                                       | 393                         | 368         | 280                 | 253         |
| <i>Included in selling and distribution and administrative expenses</i> |                             |             |                     |             |
| Personnel expense   | 6,448                       | 5,472       | 4,401               | 3,686       |
| Depreciation of property, plant and equipment                           | 839                         | 787         | 537                 | 479         |
| Amortisation of intangible assets                                       | 372                         | 350         | 235                 | 211         |
| Minimum lease payments recognised as an operating lease expense         | 667                         | 640         | 317                 | 328         |

### 33. FINANCE COSTS

Finance costs for the years ended December 31, 2019 and 2018 consisted of:

|  | <u>Consolidated</u>         |              | Unit : Million Baht |              |
|--|-----------------------------|--------------|---------------------|--------------|
|  | <u>financial statements</u> |              | <u>Separate</u>     |              |
|  | <u>2019</u>                 | <u>2018</u>  | <u>2019</u>         | <u>2018</u>  |
| <i>Interest expense</i>                                      |                             |              |                     |              |
| Subsidiaries   | -                           | -            | 762                 | 427          |
| Debentures   | 2,300                       | 2,227        | 1,646               | 1,880        |
| Bank loans and overdrafts                                    | 1,208                       | 1,154        | 354                 | 493          |
| Borrowings from other parties                                | 15                          | 168          | -                   | -            |
| <b>Total interest expense</b>                                | <b>3,523</b>                | <b>3,549</b> | <b>2,762</b>        | <b>2,800</b> |
| Other finance costs  | 331                         | 548          | 186                 | 319          |
| <u>Less</u> Capitalised as cost of assets under construction | (735)                       | (504)        | (329)               | (192)        |
| <b>Net</b>   | <b>3,119</b>                | <b>3,593</b> | <b>2,619</b>        | <b>2,927</b> |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

### 34. INCOME TAX EXPENSE

Income tax expense for the years ended December 31, 2019 and 2018 consisted of:

|                                      | <u>Consolidated</u>         |                     | Unit : Million Baht |                     |
|--------------------------------------|-----------------------------|---------------------|---------------------|---------------------|
|                                      | <u>financial statements</u> |                     | <u>Separate</u>     |                     |
|                                      | <u>2019</u>                 | <u>2018</u>         | <u>2019</u>         | <u>2018</u>         |
| <i>Current tax expense</i>           |                             |                     |                     |                     |
| Current year                         | 800                         | 3,509               | 281                 | 3,038               |
| (Over) under provided in prior years | (22)                        | 21                  | (17)                | 25                  |
|                                      | <u>778</u>                  | <u>3,530</u>        | <u>264</u>          | <u>3,063</u>        |
| <i>Deferred tax expense</i>          |                             |                     |                     |                     |
| Movements in temporary differences   | (129)                       | (544)               | (190)               | 165                 |
| <b>Total</b>                         | <b><u>649</u></b>           | <b><u>2,986</u></b> | <b><u>74</u></b>    | <b><u>3,228</u></b> |

#### *Reconciliation of effective tax rate*

|   | <u>Consolidated financial statements</u> |                   | Unit : Million Baht |                     |
|---|--|-------------------|---------------------|---------------------|
|   | <u>2019</u>                              | <u>2018</u>       | <u>2019</u>         | <u>2018</u>         |
|   | <i>Rate</i><br>(%)                       |                   | <i>Rate</i><br>(%)  |                     |
| Profit before income tax expense                          |  | 12,999            |                     | 43,257              |
| Income tax using the Thai corporation tax rate            | 20.0                                     | 2,600             | 20.0                | 8,651               |
| Effect of different tax rates in foreign<br>Jurisdictions |  | 1                 |                     | 32                  |
| Income not subject to tax                                 |  | (2,207)           |                     | (5,995)             |
| Non-deductible tax expenses                               |  | 278               |                     | 232                 |
| (Over) under provided in prior years                      |  | (22)              |                     | 21                  |
| Others  |  | (1)               |                     | 45                  |
| <b>Total</b>  | <b><u>5.0</u></b>                        | <b><u>649</u></b> | <b><u>6.9</u></b>   | <b><u>2,986</u></b> |

|  | <u>Separate financial statements</u> |                  | Unit : Million Baht |                     |
|--|--------------------------------------|------------------|---------------------|---------------------|
|  | <u>2019</u>                          | <u>2018</u>      | <u>2019</u>         | <u>2018</u>         |
|  | <i>Rate</i><br>(%)                   |                  | <i>Rate</i><br>(%)  |                     |
| Profit before income tax expense               |                                      | 9,227            |                     | 32,949              |
| Income tax using the Thai corporation tax rate | 20.0                                 | 1,845            | 20.0                | 6,590               |
| Income not subject to tax                      |                                      | (1,969)          |                     | (3,521)             |
| Non-deductible tax expenses                    |                                      | 215              |                     | 134                 |
| (Over) under provided in prior years           |                                      | (17)             |                     | 25                  |
| <b>Total</b>                                   | <b><u>0.8</u></b>                    | <b><u>74</u></b> | <b><u>9.8</u></b>   | <b><u>3,228</u></b> |

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

### 35. PROMOTIONAL PRIVILEGES

By virtue of the provisions of the Industrial Investment Promotion Act of B.E. 2520, the Company has been granted privileges by the Board of Investment relating to production of upstream, intermediate and downstream petrochemical, utilities and production support facilities, jetty for transportation and storage of liquid product and transportation by marine vessels, production of petroleum product, research and development of polymer products and chemical formula, lab testing services and refinery. The privileges granted include:

- exemption from payment of import duty on machinery approved by the Board;
- exemption from payment of income tax not over 100 percent of investment excluded land and working capital of certain operations for a period of eight years from the date on which the income is first derived from such operations
- a 50% reduction in the normal income tax rate on the net profit derived from certain operations for a period of five years, commencing from the expiry date in (b) above.

As promoted companies, the Company must comply with certain terms and conditions prescribed in the promotional certificates.

Summary of revenues from promoted and non-promoted businesses in separate financial statement for the years ended December 31, 2019 and 2018 were as follows:

|                      | Unit : Million Baht                  |                     |                |                         |                |                |
|----------------------|--------------------------------------|---------------------|----------------|-------------------------|----------------|----------------|
|                      | <u>Separate financial statements</u> |                     |                |                         |                |                |
|                      | 2019                                 |                     | Total          | 2018                    |                | Total          |
| Promoted businesses  | Non-promoted businesses              | Promoted businesses |                | Non-promoted businesses |                |                |
| Export sales         | 2,027                                | 28,176              | 30,203         | 2,927                   | 52,985         | 55,912         |
| Domestic sales       | 22,397                               | 298,356             | 320,753        | 22,614                  | 377,607        | 400,221        |
| Services income      | -                                    | 591                 | 591            | 1                       | 580            | 581            |
| <b>Total revenue</b> | <b>24,424</b>                        | <b>327,123</b>      | <b>351,547</b> | <b>25,542</b>           | <b>431,172</b> | <b>456,714</b> |

Certain subsidiaries in the Group have been granted promotional privileges as same as the Company.

### 36. BASIC EARNINGS PER SHARE

The calculation of basic earnings per share for the years ended December 31, 2019 and 2018 were based on the profit for the years attributable to ordinary shareholders of the Company and the weighted average number of ordinary shares outstanding during the years as follows:

|  | Unit : Million Baht / Million shares |                             |                             |                             |
|--|--------------------------------------|-----------------------------|-----------------------------|-----------------------------|
|  | <u>Consolidated</u>                  |                             | <u>Separate</u>             |                             |
|  | <u>financial statements</u>          | <u>financial statements</u> | <u>financial statements</u> | <u>financial statements</u> |
|  | 2019                                 | 2018                        | 2019                        | 2018                        |
| Profit attributable to ordinary shareholders of the parent company (basic) | 11,682.08                            | 40,069.49                   | 9,153.08                    | 29,720.82                   |
| Number of ordinary shares as at January 1,                                 | 4,508.85                             | 4,508.85                    | 4,508.85                    | 4,508.85                    |
| Effect of treasury stock   | (2.59)                               | -                           | (2.59)                      | -                           |
| Weighted average number of ordinary shares (basic)                         | 4,506.26                             | 4,508.85                    | 4,506.26                    | 4,508.85                    |
| <b>Earnings per share (basic) (in Baht)</b>                                | <b>2.59</b>                          | <b>8.89</b>                 | <b>2.03</b>                 | <b>6.59</b>                 |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## 37. DIVIDENDS PAID

At the Annual General Meeting of the shareholders of the Company held on April 5, 2019, the shareholders approved the appropriation of annual dividend from 2018 performance at Baht 4.25 per share, amounting to Baht 19,163 million. The Company had paid interim dividend of the first half year of 2018 at Baht 1.75 per share, amounting to Baht 7,890 million on September 18, 2018. The remaining dividend was paid for the second half year of 2018 at Baht 2.50 per share, amounting to Baht 11,272 million. Such dividend was paid to the shareholders in April 2019.

At the Board of Directors' Meeting of the Company held on August 19, 2019, the Board approved the appropriation of interim dividends from the earnings from January 1, 2019 to June 30, 2019 at Baht 1 per share. The dividend amounting to Baht 4,508 million was paid to the rightful shareholders in September 2019.

At the Annual General Meeting of the shareholders of the Company held on April 9, 2018, the shareholders approved the appropriation of annual dividend from 2017 performance at Baht 4.25 per share, amounting to Baht 19,087 million. The Company had paid interim dividend of the first half year of 2017 at Baht 1.75 per share, amounting to Baht 7,815 million on September 18, 2017. The remaining dividend was paid for the second half year of 2017 at Baht 2.50 per share, amounting to Baht 11,272 million. Such dividend was paid to the shareholders in April 2018.

At the Board of Directors' Meeting of the Company held on August 20, 2018, the Board approved the appropriation of interim dividends from the earnings from January 1, 2018 to June 30, 2018 at Baht 1.75 per share. The dividend amounting to Baht 7,890 million was paid to the rightful shareholders in September 2018.

## 38. FINANCIAL INSTRUMENTS

### *Financial risk management policies*

The Group is exposed to normal business risks from changes in market interest rates and currency exchange rates and from non-performance of contractual obligations by counterparties. The Group does not hold or issue derivative financial instruments for speculative or trading purposes.

Risk management is integral to the whole business of the Group. The management continually monitors the Group's risk management process to ensure that an appropriate balance between risk and control is achieved.

### *Capital management*

The Company's Board of Directors' policy is to maintain a strong capital base so as to maintain investor, creditor, partners and other stakeholders. In addition, the Board monitors the return on capital and the level of dividends to ensure business sustainability.

### *Interest rate risk*

Interest rate risk is the risk that future movements in market interest rates will affect the results of the Group's operations and its cash flows because the Group's finances loans which have both floating and fixed interest rates for their operations. The Group has managed this risk to ensure the appropriateness to the business operation.

The effective interest rates of interest-bearing liabilities at December 31, 2019 and 2018 and the periods in which those liabilities mature or re-price were disclosed in note 20 to the financial statements.

### *Foreign currency risk*

The Group is exposed to foreign currency risk relating to purchases, sales, and construction payment, including borrowings which are denominated in foreign currencies. The Group primarily utilises forward exchange contracts to hedge such financial assets and liabilities denominated in foreign currencies. The forward exchange contracts entered into at the reporting date also relate to anticipated purchases and sales, denominated in foreign currencies, for the subsequent period.

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

As at December 31, 2019 and 2018, the Group was exposed to foreign currency risk in respect of financial assets and liabilities denominated in the following currencies:

|   | <u>Consolidated</u>         |               | Unit : Million Baht |                |
|---|-----------------------------|---------------|---------------------|----------------|
|   | <u>financial statements</u> |               | <u>Separate</u>     |                |
|   | <u>2019</u>                 | <u>2018</u>   | <u>2019</u>         | <u>2018</u>    |
| <b>USD</b>  |                             |               |                     |                |
| Financial assets                                      | 16,536                      | 39,624        | 12,680              | 32,913         |
| Financial liabilities                                 | (21,295)                    | (24,515)      | (34,681)            | (37,282)       |
| <b>Gross statement of financial position exposure</b> | <b>(4,759)</b>              | <b>15,109</b> | <b>(22,001)</b>     | <b>(4,369)</b> |
| <b>Currency forward contracts</b>                     | <b>4,199</b>                | <b>14,780</b> | <b>3,122</b>        | <b>5,225</b>   |

The Group performs foreign currency risk management on assets and liabilities held in USD. The Group has net liabilities under USD currency. The Group manages net USD liabilities by naturally hedged USD portion of net profit to minimise the impact from fluctuations in foreign currency to the Group's performance.

In addition to forward exchange contracts, the Group uses derivatives financial instruments, principally currency swaps and interest rate swap, to manage exposure to fluctuations in interest rates and in exchange rates. As at December 31, 2019, the Group entered into interest rate swap contracts, totalling Baht 0.48 million (2018: Baht 4.00 million) to repay certain interest bearing liabilities in foreign currencies.

|   | <u>Consolidated</u>         |             | Unit : Million Baht |             |
|---|-----------------------------|-------------|---------------------|-------------|
|   | <u>financial statements</u> |             | <u>Separate</u>     |             |
|   | <u>2019</u>                 | <u>2018</u> | <u>2019</u>         | <u>2018</u> |
| <b>EUR</b>  |                             |             |                     |             |
| Financial assets                                      | 46                          | 170         | -                   | 18          |
| Financial liabilities                                 | (85)                        | (240)       | (41)                | (59)        |
| <b>Gross statement of financial position exposure</b> | <b>(39)</b>                 | <b>(70)</b> | <b>(41)</b>         | <b>(41)</b> |
| <b>Currency forward contracts</b>                     | <b>6</b>                    | <b>18</b>   | <b>-</b>            | <b>-</b>    |

|   | <u>Consolidated</u>         |             | Unit : Million Baht |             |
|---|-----------------------------|-------------|---------------------|-------------|
|   | <u>financial statements</u> |             | <u>Separate</u>     |             |
|   | <u>2019</u>                 | <u>2018</u> | <u>2019</u>         | <u>2018</u> |
| <b>Others</b>   |                             |             |                     |             |
| Financial assets                                      | 29                          | 393         | 1                   | 1           |
| Financial liabilities                                 | (60)                        | (158)       | (43)                | (68)        |
| <b>Gross statement of financial position exposure</b> | <b>(31)</b>                 | <b>235</b>  | <b>(42)</b>         | <b>(67)</b> |
| <b>Currency forward contracts</b>                     | <b>377</b>                  | <b>748</b>  | <b>-</b>            | <b>-</b>    |

### Credit risk

Credit risk is risk of failure from a customer or a counterparty to settle its obligations to the Group as and when they fall due.

Management has a policy in place and the exposure to credit risk is monitored on an ongoing basis. Credit evaluations are performed on all customers requiring credit over a certain amount. At the reporting date, there were no significant concentrations of credit risk. The maximum exposure to credit risk is represented by the carrying amount of each financial asset in the statement of financial position. However, the majority of the customers are on the long-term contracted commitment and parts of them are the Company's shareholders which the company has consistently collected from them. For the customers who do not have the long-term contracted commitments, the Group monitors the risk on an ongoing basis and would do the business only with the credible customers by limiting the credit lines and requesting the guarantee on some cases. For the export, the credit of counterparty will be considered. The Group will demand a payment on a case to case basis and also has commercial credit insurance. Management does not anticipate material losses from its debt collection.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## *Liquidity risk*

The Group monitors its liquidity risk and maintains a level of cash and cash equivalents deemed adequate by management to finance the Group's operations and to mitigate the effects of fluctuations in cash flows.

## *Carrying amount and fair values*

The carrying value of financial assets and liabilities in the consolidated and separate statements of financial position as at December 31, 2019 and 2018 are approximated to fair values except the following items:

|                                     | Unit : Million Baht                      |                    |              |                   |                |                |              |
|-------------------------------------|--|--------------------|--------------|-------------------|----------------|----------------|--------------|
|                                     | <u>Consolidated financial statements</u> |                    |              |                   |                |                | <u>Total</u> |
|                                     | <u>Carrying value</u>                    |                    |              | <u>Fair value</u> |                |                |              |
|                                     | <u>Current</u>                           | <u>Non-current</u> | <u>Total</u> | <u>Level 1</u>    | <u>Level 2</u> | <u>Level 3</u> |              |
| <b>As at December 31, 2019</b>      |  |                    |              |                   |                |                |              |
| <b><i>Financial assets</i></b>      |  |                    |              |                   |                |                |              |
| Debt securities                     |  |                    |              |                   |                |                |              |
| available-for-sale                  | 545                                      | 1,503              | 2,048        | -                 | 2,048          | -              | 2,048        |
| Equity securities                   |  |                    |              |                   |                |                |              |
| available-for-sale                  | -  | 384                | 384          | 384               | -              | -              | 384          |
| Financial derivatives               | 28                                       | -                  | 28           | -                 | 28             | -              | 28           |
| Commodity derivatives               | 194                                      | -                  | 194          | -                 | 194            | -              | 194          |
| <b><i>Financial liabilities</i></b> |  |                    |              |                   |                |                |              |
| Debentures                          | -  | 70,131             | 70,131       | -                 | 72,477         | -              | 72,477       |
| Financial derivatives               | 320                                      | 12                 | 332          | -                 | 332            | -              | 332          |
| Commodity derivatives               | 466                                      | -                  | 466          | -                 | 466            | -              | 466          |
| <b>As at December 31, 2018</b>      |  |                    |              |                   |                |                |              |
| <b><i>Financial assets</i></b>      |  |                    |              |                   |                |                |              |
| Debt securities                     |  |                    |              |                   |                |                |              |
| available-for-sale                  | 6,315                                    | 5,957              | 12,272       | -                 | 12,272         | -              | 12,272       |
| Equity securities                   |  |                    |              |                   |                |                |              |
| available-for-sale                  | -  | 362                | 362          | 362               | -              | -              | 362          |
| Financial derivatives               | 341                                      | 122                | 463          | -                 | 463            | -              | 463          |
| Commodity derivatives               | 67                                       | -                  | 67           | -                 | 67             | -              | 67           |
| <b><i>Financial liabilities</i></b> |  |                    |              |                   |                |                |              |
| Debentures                          | 1,942                                    | 52,408             | 54,350       | -                 | 55,290         | -              | 55,290       |
| Financial derivatives               | 311                                      | 147                | 458          | -                 | 458            | -              | 458          |
| Commodity derivatives               | 308                                      | -                  | 308          | -                 | 308            | -              | 308          |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

Unit : Million Baht

|                                     | <u>Separate financial statements</u> |                    |              |                   |                |                |              |
|-------------------------------------|--------------------------------------|--------------------|--------------|-------------------|----------------|----------------|--------------|
|                                     | <u>Carrying value</u>                |                    |              | <u>Fair value</u> |                |                |              |
|                                     | <u>Current</u>                       | <u>Non-current</u> | <u>Total</u> | <u>Level 1</u>    | <u>Level 2</u> | <u>Level 3</u> | <u>Total</u> |
| <b>As at December 31, 2019</b>      |                                      |                    |              |                   |                |                |              |
| <b><i>Financial assets</i></b>      |                                      |                    |              |                   |                |                |              |
| Debt securities                     |                                      |                    |              |                   |                |                |              |
| available-for-sale                  | 545                                  | 1,503              | 2,048        | -                 | 2,048          | -              | 2,048        |
| Equity securities                   |                                      |                    |              |                   |                |                |              |
| available-for-sale                  | -                                    | 384                | 384          | 384               | -              | -              | 384          |
| Financial derivatives               | 14                                   | -                  | 14           | -                 | 14             | -              | 14           |
| Commodity derivatives               | 194                                  | -                  | 194          | -                 | 194            | -              | 194          |
| <b><i>Financial liabilities</i></b> |                                      |                    |              |                   |                |                |              |
| Long-term borrowing                 |                                      |                    |              |                   |                |                |              |
| from a related party                | -                                    | 14,991             | 14,991       | -                 | 15,808         | -              | 15,808       |
| Debentures                          | -                                    | 55,221             | 55,221       | -                 | 56,761         | -              | 56,761       |
| Financial derivatives               | 69                                   | 12                 | 81           | -                 | 81             | -              | 81           |
| Commodity derivatives               | 466                                  | -                  | 466          | -                 | 466            | -              | 466          |
| <b>As at December 31, 2018</b>      |                                      |                    |              |                   |                |                |              |
| <b><i>Financial assets</i></b>      |                                      |                    |              |                   |                |                |              |
| Debt securities                     |                                      |                    |              |                   |                |                |              |
| available-for-sale                  | 6,315                                | 5,957              | 12,272       | -                 | 12,272         | -              | 12,272       |
| Equity securities                   |                                      |                    |              |                   |                |                |              |
| available-for-sale                  | -                                    | 362                | 362          | 362               | -              | -              | 362          |
| Financial derivatives               | 340                                  | 122                | 462          | -                 | 462            | -              | 462          |
| Commodity derivatives               | 67                                   | -                  | 67           | -                 | 67             | -              | 67           |
| <b><i>Financial liabilities</i></b> |                                      |                    |              |                   |                |                |              |
| Long-term borrowings                |                                      |                    |              |                   |                |                |              |
| from a related party                | -                                    | 16,105             | 16,105       | -                 | 16,530         | -              | 16,530       |
| Debentures                          | 1,942                                | 36,379             | 38,321       | -                 | 39,082         | -              | 39,082       |
| Financial derivatives               | 3                                    | 21                 | 24           | -                 | 24             | -              | 24           |
| Commodity derivatives               | 308                                  | -                  | 308          | -                 | 308            | -              | 308          |

## ***Measurement of fair values***

Level 1 of fair values for equity securities available-for-sale investments are based on quoted bid price as at the end of reporting period by references from the Stock Exchange of Thailand.

Level 2 of fair values for debt securities available-for-sale investments are based on the yield rate quoted by the Thai Bond Market Association or other markets and for simple over-the-counter derivative instruments are based on broker quotes. Those quotes are tested for reasonableness by discounting expected future cash flows using market interest rate for a similar instrument at the measurement date. Fair values reflect the credit risk of the instrument and include adjustments to take account of the credit risk of the Group and counterparty when appropriate. For fixed-rate long-term borrowings are based on discounted future cash flows for the remaining periods using market interest rate for a similar instrument at the measurement date. For debentures are based on the last bid price on the Thai Bond Market Association at the measurement date.

## NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

### 39. COMMITMENTS WITH NON-RELATED PARTIES

As at December 31, 2019 and 2018, the Company and its subsidiaries had commitments with non-related parties as follows:

|  | <u>Consolidated</u>         |                             | Unit : Million Baht |                 |
|--|-----------------------------|-----------------------------|---------------------|-----------------|
|  | <u>financial statements</u> | <u>financial statements</u> | <u>Separate</u>     | <u>Separate</u> |
|  | <u>2019</u>                 | <u>2018</u>                 | <u>2019</u>         | <u>2018</u>     |
| <b>Capital commitments</b>                           |                             |                             |                     |                 |
| <i>contracted but not provided for</i>               |                             |                             |                     |                 |
| Land   | 5                           | 2                           | 2                   | 2               |
| Plant, machinery and equipment                       | 13,475                      | 31,460                      | 9,084               | 19,006          |
| Buildings  | 107                         | 38                          | 98                  | 36              |
| Others   | 627                         | 617                         | 228                 | 199             |
| <b>Total</b>   | <b>14,214</b>               | <b>32,117</b>               | <b>9,412</b>        | <b>19,243</b>   |
| <b>Non-cancellable operating lease commitments</b>   |                             |                             |                     |                 |
| Within one year                                      | 602                         | 195                         | 286                 | 121             |
| After one year but within five years                 | 1,467                       | 888                         | 795                 | 649             |
| After five years                                     | 2,459                       | 2,402                       | 1,957               | 2,097           |
| <b>Total</b>   | <b>4,528</b>                | <b>3,485</b>                | <b>3,038</b>        | <b>2,867</b>    |
| <b>Other commitments</b>                             |                             |                             |                     |                 |
| Letters of credits                                   | 333                         | 383                         | -                   | -               |
| Bank guarantees                                      | 3,336                       | 2,043                       | 1,467               | 266             |
| Guarantees for credit facilities and bank guarantees | 2,613                       | 2,784                       | 22,661              | 25,002          |
| Other agreements                                     | 8,699                       | 9,524                       | 7,214               | 9,047           |
| <b>Total</b>   | <b>14,981</b>               | <b>14,734</b>               | <b>31,342</b>       | <b>34,315</b>   |

As at December 31, 2019 and 2018, the Company and a subsidiary had capital commitments as follows:

- The Company had commitments relating to Olefins Reconfiguration Project totalling Baht 6,074 million (2018: Baht 16,125 million). The project has been planned for commercial operation within 2020.
- A subsidiary had commitments relating to Propylene Oxide (PO) Project totalling Baht 2,940 million (2018: Baht 9,013 million). The project has been planned for commercial operation within 2020.

#### Utilities and Other Services Agreements with minimum purchase quantity

The Group has 17 utilities and other services agreements which have minimum purchase quantity with other parties. These agreements are for the periods from 10 years to 30 years, commencing from the date as specified in each agreement and expiring in March 2022 to September 2035. The minimum purchase quantity, the selling price of products and the renewal of the contract will be subject as specified in the agreements.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## 40. LITIGATIONS

### a) Purchase and sales of raw materials agreement legal case

On December 3, 2009, a company filed for arbitration against PTT Plc. (“PTT”) and the Company as a producer to perform according to purchase and sales of raw materials agreement, of which the said company has been committed by PTT, or to compensate for damages of approximately Baht 13,805 million. On March 8, 2010, the dispute was struck out of the case-list by the arbitration ruling that the Company was not a party to the contract.

On August 27, 2010, the said company filed a civil suit to the Civil Court against PTT and the Company as a producer to perform according to purchase and sales of raw materials agreement, of which the said company has been committed by PTT, or to compensate for damages of approximately Baht 9,380 million. In this regards, the Company filed an objection against the indictment with the Civil Court on the basis that the Company was not a party to the contract.

On May 21, 2013, the Civil Court considered that the arbitration process between such company and PTT has not yet finalized; therefore, the Court has temporarily struck the case out of the case-list until the final decision has been reached under arbitration process. Then, both parties or either party can resubmit the case to the Civil Court for the further trial.

Subsequently, on March 25, 2016, the arbitration has reached a conclusion for PTT to compensate the damages in some amount. On June 30, 2019, PTT submitted a motion for setting aside the arbitral award to the Civil Court. Thereafter, on September 19, 2019, the Civil Court rendered the judgement for enforcement of the arbitral award, however, PTT will appeal to the Supreme Court under applicable law. The Company believes that the outcome of the consideration will not result in any liability to the Company, because the arbitral award and the judgement shall not be enforced on the Company due to the fact that the Company was not the party in the case, therefore, has not provided any provision against any loss that may result from this matter in the financial statements.

### b) Oil spill incident legal case

During the third quarter of 2014, the number of people in Rayong filed several lawsuits with the Civil Court and the Rayong Provincial Court against the Company to claim the extra compensation from oil spill incident and to perform the rehabilitation of the sea and natural environmental recovery. Some cases have been dismissed and some cases have been passed a judgement by the Civil Court on August 25, 2016 by ordered the Company to compensate for damages including interest and rehabilitation of approximately Baht 11.26 million. The Company has appealed on February 17, 2017. Subsequently, on May 11, 2018, the Company made a compromise agreement with majority plaintiffs at the Civil Court. On December 20, 2018, the Court of Appeal has passed the judgement according to the compromise contracts which the Company has already paid compensation in full amount. For the remaining plaintiffs, the Court of Appeal ordered the Company to pay compensation with its interest according to the judgement of the Court of First Instance and reduced the amount of interest. The Company has paid the compensation to all plaintiffs completely and no petition is submitted to Supreme Court by any plaintiffs. This case has become final.

For the case at Rayong Provincial Court, on September 28, 2018, the Court has made the judgement ordering the Company to pay damage cost with its interest of approximately Bath 38 million by deducting the remedy payment paid to the plaintiffs of Baht 24 million. The Company deposited the remaining damage cost with its interest to the Rayong Provincial Court on February 25, 2019. Some plaintiffs filed an appeal with the Rayong Provincial Court and the Company has filed an answer to the appeal with the Rayong Provincial Court on October 2, 2019. Subsequently, on January 22, 2020 the Rayong Provincial Court sent an appointment to hear the judgment of the Court of Appeal Region 2 on March 19, 2020.

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## c) Transfer of right for the payment of raw materials legal case of the subsidiary

- c.1) The subsidiary was informed by the third party who received the transfer of claim from the supplier of the subsidiary for the payment of raw materials, which the supplier of the subsidiary borrowed from the third party to purchase raw materials to sell to the subsidiary and the subsidiary had to pay for the raw materials to that third party under the transfer of right for the payment of raw materials. After reviewing the provided documents, the subsidiary informed to the third party that these documents were not in the system, nor there was no evidence regarding the delivery of raw materials as prescribed in the documents. Subsequently, on August 20, 2018, the third party filed a civil lawsuit against the supplier of the subsidiary and the subsidiary as joint defendants for violation of loan agreement and transfer of claim, with damage claimed amounting to Baht 308.75 million with interest rate at 15% per annum amounting to Baht 15.90 million, totalling Baht 324.65 million. The subsidiary appointed a lawyer and filed a statement of defense. Currently, this case is in the process of the plaintiffs and defendants witness hearing. However, the legal advisor of the subsidiary provided an opinion that the subsidiary is not liable for any damages as per the plaint as there was no evidence regarding the delivering of raw materials to the subsidiary. As a result, there is no obligation.
- c.2) On February 27, 2019, a financial institution filed a civil lawsuit against the supplier of the subsidiary, director of supplier of the subsidiary and the subsidiary as joint defendants for violation of credit limit agreement, sale of promissory notes, transfer of money, guarantee and forced mortgage, with damage claimed amounting to Baht 55.95 million and interest amounting to Baht 3.49 million, totalling Baht 59.44 million. Therefore, the subsidiary filed a statement of defense. On October 28, 2019, the plaintiff submitted the motion for permission to withdraw the pliant against the subsidiary and the Court granted such permission and struck the case out of the case-list of the Court.

## 41. RECLASSIFICATIONS

Certain reclassifications have been made to the consolidated and separate financial statements for the year ended December 31, 2018, to conform to the classifications used in the consolidated and separate financial statements for the year ended December 31, 2019 as follows:

| Account name | Previous presentation         | Current presentation          | Unit : Million Baht               |                               |
|--------------|-------------------------------|-------------------------------|-----------------------------------|-------------------------------|
|              |                               |                               | Consolidated financial statements | Separate financial statements |
| Land         | Property, plant and equipment | Investment properties         | 977                               | 1,741                         |
| Other assets | Other non-current assets      | Property, plant and equipment | 6,286                             | 4,580                         |

# NOTES TO THE FINANCIAL STATEMENTS

PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED AND SUBSIDIARIES

FOR THE YEAR ENDED DECEMBER 31, 2019

## 42. EVENTS AFTER THE REPORTING PERIOD

- 42.1 The Company has established a Joint Venture company called ENVICCO Limited (ENVICCO) on February 3, 2020 to operate High-quality recycled plastic plant which the Company holds 70% of total shares in Joint Venture company together with another 30% held by ALPLA. The establishment of ENVICCO is in accordance with the resolution of Board of Directors' meeting No. 8/2019 on July 22, 2019 approving the Company to enter into the Joint Venture Agreement (JVA) to invest in Recycle plastic plant project. The Joint Venture company has the objectives to manufacture and distribute rPET and rHDPE recycled plastic resins with overall production capacity of 45,000 Ton per year comprised of rPET capacity of 30,000 Ton per year and rHDPE capacity of 15,000 Ton per year. The project will be located at Asia Industrial Estate in Rayong province and has expected commercial operation date within the fourth quarter of 2021.
- 42.2 At the Board of Directors' meeting held on February 17, 2020, the Board approved to submit for approval at the Annual General Meeting of the Shareholders, a full year 2019 dividend payment at the rate of Baht 2.00 per share, of which Baht 1.00 per share was paid as an interim dividend in September 2019 as disclosed in note 37. Thus, the remaining dividend will be paid at the rate of Baht 1.00 per share to the shareholders entitled to receive dividends. This dividend is subject to the approval of the Shareholders at the Annual General Meeting to be held on April 9, 2020.

## 43. APPROVAL OF THE FINANCIAL STATEMENTS

These financial statements have been approved for issue by the Board of Directors on February 17, 2020.

# AUDIT FEE AND NON-AUDIT FEE

## 1. AUDIT FEE

GC and its subsidiaries paid the audit fee to:

- Deloitte Touche Tohmatsu Jaiyos Audit Co., Ltd., which is the auditor of GC and its subsidiaries for the fiscal year of 2019 amounting to THB 10,265,000. Of this amount, GC paid THB 3,000,000 and its subsidiaries paid THB 7,265,000.
- The audit company that the auditor worked for, including persons or entities that are related to the auditors and the audit company for the fiscal year of 2019 amounting to SGD 25,000, USD 27,000, EUR 226,000, and VND 482,000,000.

## 2. NON-AUDIT FEE

GC and its subsidiaries paid the non-audit fee for performing agreed-upon procedures in connection with the requirements of the Board of Investment (BOI), consulting and document certifying for participation in the Thailand's Private Sector Collective Action Coalition Against Corruption Program (CAC), filing tax returns, tax consulting services and other audits by agreed-upon procedures to:

- Deloitte Touche Tohmatsu Jaiyos Audit Co., Ltd., which is the auditor of GC and its subsidiaries for the fiscal year of 2019 for incomplete services in the fiscal year of 2019 that will be paid for a total of THB 2,940,000.
- The audit company that the auditor worked for, including persons or entities that are related to the auditors and the audit company for the fiscal year of 2019 amounting to THB 2,090,420 and USD 83,250 plus incomplete services in the fiscal year of 2019 that will be paid for a total of THB 1,166,790, and USD 23,750.

# **APPENDIX**

# COMPANY INFORMATION AND OTHER IMPORTANT INFORMATION

|   |  |
|---|--|
| <b>NAME</b>                               | : PTT Global Chemical Public Company Limited   |
| <b>INITIAL</b>                            | : PTTGC  |
| <b>WEBSITE</b>                            | : www.pttgcgroup.com   |
| <b>REGISTERED NUMBER</b>                  | : 0107554000267  |
| <b>NUMBER AND VALUE</b>                   | : As at December 31, 2019, the Company's registered share capital was of Baht 45,088,491,170 comprising of 4,508,849,117 common shares at a par value of Baht 10 per share. Paid-up capital was Baht 45,088,491,170.   |
| <b>ESTABLISHMENT</b>                      | : October 19, 2011   |
| <b>FIRST DAY TRADE ON THE SET</b>         | : October 21, 2011   |
| <b>BUSINESS STRUCTURE AND VALUE CHAIN</b> | : Group Performance Center - Refinery & Shared Facilities<br>: Group Performance Center - Aromatics<br>: Group Performance Center - Olefins<br>: Polymers Business Unit<br>: EO-Based Performance Business Unit<br>: Green Chemicals Business Unit<br>: Phenol Business Unit<br>: Performance Materials and Chemicals<br>: Services & Others |
| <b>NUMBER OF EMPLOYEES</b>                | : 6,925 as of December 31, 2019  |

## CONTACT

### INVESTOR RELATION DEPARTMENT

Tel: 66 (0) 2265-8400 EXT. 8665, 8637, 8513, 8364  
Email: ir@pttgcgroup.com

### CORPORATE GOVERNANCE DEPARTMENT

Tel: 66 (0) 2265-8645, 66 (0) 2140-8759  
Email: cg@pttgcgroup.com

### HEAD OFFICE

555/1 Energy Complex, Building A, 14<sup>th</sup>-18<sup>th</sup> Floor  
Vibhavadi Rangsit Road, Chatuchak Sub-District,  
Chatuchak District, Bangkok 10900  
Tel: 66 (0) 2265-8400, Fax: 66 (0) 2265-8500

### BRANCH 1: RAYONG OFFICE

59 Ratniyom Road, Noen-Phra Sub-District,  
Muang Rayong District, Rayong Province 21150  
Tel: 66 (0) 3899-4000, Fax: 66 (0) 3899-4111

### BRANCH 2: OLEFINS I-1

14 I-1 Road, Map Ta Phut Industrial Estate,  
Map Ta Phut Sub-District, Muang Rayong District,  
Rayong Province 21150  
Tel: 66 (0) 3899-4000, Fax: 66 (0) 3899-4111

### BRANCH 3: OLEFINS I-4

9 I-4 Road, Map Ta Phut Industrial Estate,  
Map Ta Phut Sub-District, Muang Rayong District,  
Rayong Province 21150  
Tel: 66 (0) 3899-4000, Fax: 66 (0) 3899-4111

### BRANCH 4: AROMATICS I

4 I-2 Road, Map Ta Phut Industrial Estate,  
Map Ta Phut Sub-District, Muang Rayong District,  
Rayong Province 21150  
Tel: 66 (0) 3897-1000, Fax: 66 (0) 3899-4111

### BRANCH 5: AROMATICS II

98/9 Rayong Highway Road 3191, RIL Industrial Estate,  
Map Ta Phut Sub-District, Muang Rayong District,  
Rayong Province 21150  
Tel: 66 (0) 3897-1000, Fax: 66 (0) 3899-4111

### BRANCH 6: REFINERY

8 I-8 Road, Map Ta Phut Industrial Estate,  
Map Ta Phut Sub-District, Muang Rayong District,  
Rayong Province 21150  
Tel: 66 (0) 3897-1000, Fax: 66 (0) 3899-4111

### BRANCH 7: JETTY AND BUFFER TANK FARM

19 Rong-Pui Road, Map Ta Phut Industrial Estate,  
Map Ta Phut Sub-District, Muang Rayong District,  
Rayong Province 21150  
Tel: 66 (0) 3899-4000, Fax: 66 (0) 3899-4111

## CONTACT

### BRANCH 8: AROMATICS TANK FARM

11 I-4 Road, Map Ta Phut Industrial Estate,  
Map Ta Phut Sub-District, Muang Rayong District,  
Rayong Province 21150  
Tel: 66 (0) 3897-1000, Fax: 66 (0) 3899-4111

### BRANCH 9: LABORATORY SERVICE CENTER

24/9 Pakorn Songkrorat Road, Map Ta Phut Sub-District,  
Muang Rayong District, Rayong Province 21150  
Tel: 66 (0) 3899-4000, Fax: 66 (0) 3899-4111

### BRANCH 10: PTTGC 10

555/1 Energy Complex, Building A, 1<sup>st</sup>, 3<sup>rd</sup>, 10<sup>th</sup> Floor  
Vibhavadi Rangsit Road, Chatuchak Sub-District,  
Chatuchak District, Bangkok 10900  
Tel: 66 (0) 2 265-8400, Fax: 66 (0) 2 265-8500

### BRANCH 11: OLEFINS III

8 Padaeng Road, Map Ta Phut Sub-District,  
Muang Rayong District, Rayong Province 21150  
Tel: 66 (0) 3899-4000, Fax: 66 (0) 3897-6205

### BRANCH 12: POLYETHYLENE

8 I-10 Road, Map Ta Phut Industrial Estate,  
Map Ta Phut Sub-District, Muang Rayong District,  
Rayong Province 21150  
Tel: 66 (0) 3899-4000, Fax: 66 (0) 3897-6977

### BRANCH 13: INNOPLUS SOLUTION CENTER

83/9-10 Moo 5, Tub-ma Sub-District,  
Muang Rayong District, Rayong Province 21000  
Tel: 66 (0) 3899-4526, Fax: 66 (0) 3899-4452

### BRANCH 14: GC 14

32 Rong Pui Road, Map Ta Phut Sub-District,  
Muang Rayong District, Rayong Province 21150  
Tel: 66 (0) 3897-5000, Fax: 66 (0) 3899-4111

## REFERENCES

### SECURITIES REGISTRAR

**Thailand Securities Depository Company Limited**  
93, 14<sup>th</sup> Floor, Rachadapisek Road, Dindaeng Sub-District,  
Dindaeng District, Bangkok 10400  
Tel: 66 (0) 2009-9999, Fax: 66 (0) 2009-9991  
Website: www.set.or.th/tsd

### US\$ BOND REGISTRAR

**Citibank, N.A.**  
39<sup>th</sup> Floor, Citibank Tower,  
Citibank Plaza, 3 Garden Road, Central, Hong Kong  
Tel: +852 2868 7961, Fax: +852 2323 0279

### REGISTRAR AND DEBENTURE HOLDERS REPRESENTATIVE

**Bank of Ayudhya Public Company Limited\***  
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Yan Nawa District, Bangkok 10120  
Tel: 66 (0) 2296-2030, 4808, 5557 Fax: 66 (0) 2683-1298  
Website: www.krungsri.com

### AUDITOR

1. Mr. Suphamit Techamontrikul, CPA No. 3356 or
2. Mr. Chavala Tienpasertkij, CPA No. 4301 or
3. Mr. Suwatchai Meakhaamnouychai, CPA No. 6638 or
4. Mr. Mongkol Somphol, CPA No. 8444

### REGISTRAR SERVICES

**The Siam Commercial Bank Public Company Limited\*\*  
Financial Transactions and Securities Operations**  
G Tower, The Grand Rama 9, 15<sup>th</sup> Floor, North Wing,  
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Huai Khwang District, Bangkok 10310  
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### Deloitte Touche Tohmatsu Jaiyos Audit Company Limited

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### GLOBAL TRANSACTION SERVICES DIVISION CORPORATE TRUST

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Chatuchak Sub-District, Chatuchak District Bangkok 10900  
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Website: www.scb.co.th

### LEGAL ADVISOR

**Baker & McKenzie Limited**  
5<sup>th</sup> and 21<sup>st</sup>-25<sup>th</sup> Floor, Abdulrahim Place,  
990 Rama IV Road, Silom Sub-District,  
Bangrak District, Bangkok 10500  
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Website: www.bakermckenzie.com

### Domnern Somgiat & Boonma Law Office Limited

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Website: www.dsb.co.th

#### Remarks:

\* Bank of Ayudhya Public Company Limited acts as the debenture holders' representative for the Company's debentures, namely PTTGC196A (The maturity date of this debenture is June 19, 2019) PTTGC218A, PTTGC218B, PTTGC248A, PTTGC249A, PTTGC269A and PTTGC299A.

Bank of Ayudhya Public Company Limited acts as the registrar and paying agent for the Company's debentures, namely PTTGC218A, PTTGC218B, PTTGC248A, PTTGC249A, PTTGC269A and PTTGC299A.

\*\* The Siam Commercial Bank Public Company Limited acts as the registrar and paying agent for the Company's debenture, namely PTTGC196A (The maturity date of this debenture is June 19, 2019).

## OTHER IMPORTANT INFORMATION

(1) In 2019, GC issued and offered debt instruments No. 1/2562, worth Baht 10,000 million, to the public as detailed below:

| Objective  | Estimated Budget (Baht) | Estimated Budget Duration | Detail  |
|--|-------------------------|---------------------------|---|
| 1. To repay loans or debts resulting from debt instrument issuance | 4,298,000,000           | Within 2019               | <p>The debenture issuer will use the money derived from the issuance and offering of debentures to repay the following items.</p> <ol style="list-style-type: none"> <li>Long-term loans from Krung Thai Bank Public Company Limited, representing the managing group for the distribution of these debentures. <ul style="list-style-type: none"> <li>Total loans: Baht 3,653,400,000</li> <li>Interest rate: 3.35-4.60%</li> <li>To be repaid in installments within 2019</li> </ul> </li> <li>Loans from other financial institutions unrelated to the manager of debenture distribution, worth Baht 644,600,000.</li> </ol> |
| 2. Other purposes, including business working capital              | 5,702,000,000           | Within 2019               | <p>The debenture issuer will use the money derived from the issuance and offering of debentures in its general business or business growth, or both.</p>  |

(2) The above-mentioned debt instruments are subject to the enforcement and interpretation of Thai laws.

# TECHNICAL TERMS AND ABBREVIATIONS

| TECHNICAL TERMS & ABBREVIATIONS                   |   |
|---|---|
| <b>Acrylonitrile (AN)</b>                         | AN, an intermediate product, is used for many applications such as acrylic fiber, automotive parts, and electric appliance parts.   |
| <b>Aromatics</b>                                  | A group of cyclic hydrocarbons containing one or more benzene rings of six carbon atoms characterized by single and double bonds, such as benzene, toluene, and xylene.   |
| <b>Bio-based Polybutylene Succinate (Bio-PBS)</b> | Bio-PBS, a natural material made from bio-succinic acid and 1, 4-butanediol, used in applications such as paper coating, compound injection, and packaging.   |
| <b>Bisphenol A (BPA)</b>                          | BPA, an intermediate product produced from acetone and phenol, is used to produce polycarbonate or epoxy resins.  |
| <b>Butadiene</b>                                  | Butadiene, derived from the extraction of mixed-C4, is used in making synthetic rubber.   |
| <b>Butene-1</b>                                   | Butene-1, a byproduct of the cracking of petroleum (kerosene or gasoil) and naphtha distillation, or extraction of mixed-C4, is used as polymer feedstock.  |
| <b>Carotenoid</b>                                 | Carotenoid, a natural substance found in plants, vegetables, fruits, and microbes, consists of the carotene group and xantho group. Carotene, such as beta carotene and lycopene, is fats-soluble, whereas xantho is less fats-soluble. |
| <b>EO-Based Performance Product</b>               | EO-based refers to ethylene oxide derivatives such as ethylene oxide, ethylene glycol, ethanolamine products, and ethoxylate.   |
| <b>Ethanolamine (EA)</b>                          | EA, obtained from the reaction between ethylene oxide and ammonia, is used in hair conditioner, fabric softener, cosmetics, and pharmaceuticals.  |
| <b>Ethoxylate</b>                                 | Ethoxylate, produced from ethylene oxide, is used as a surfactant in soap and detergent.  |
| <b>Ethylene</b>                                   | Ethylene, obtained from ethane, LPG, or naphtha, is feedstock for polyethylene, vinyl chloride monomer, styrene monomer, and ethylene oxide.  |
| <b>Ethylene Glycol (EG)</b>                       | EG is synthesized from ethylene oxide reacting with water, producing mono ethylene glycol, diethylene glycol, triethylene glycol, and polyethylene glycol.  |
| <b>Ethylene Oxide (EO)</b>                        | EO, obtained from the reaction between ethylene and oxygen, is a chemical intermediate of ethylene glycol, ethanolamine, and ethoxylate, and others.  |
| <b>Fatty Alcohol</b>                              | Fatty alcohol, produced from methyl ester and hydrogen through hydrogenation, is used in personal care products.  |
| <b>Glycerin</b>                                   | Glycerin, a byproduct of methyl ester production, is used in pharmaceuticals, food, and personal care products.   |
| <b>Hexamethylene Diisocyanate (HDI)</b>           | HDI, obtained from the reaction between hexamethylenediamine and phosgene, is used in polyurethane production.  |

## TECHNICAL TERMS & ABBREVIATIONS

|  |  |
|--|--|
| <b>High Density Polyethylene (HDPE)</b>        | Produced from ethylene monomers, HDPE is a very dense and crystallized thermoplastic used for containers, including plastic bags, bottles, fuel containers, tanks, and cartons.  |
| <b>Hydrocracking</b>                           | Hydrocracking is a process of breaking up hydrocarbon molecules by breaking up carbon-carbon bonds with the use of hydrogen and catalysts.   |
| <b>Linear Low Density Polyethylene (LLDPE)</b> | LLDPE, a branched thermoplastic with 65-80% crystallization and a byproduct produced from chemical reaction between ethylene and butene -1, is found in film and containers.   |
| <b>Low Density Polyethylene (LDPE)</b>         | LDPE is a branched type of thermoplastic with 65-75% crystallization. Obtained from chemical reaction of ethylene monomer coalescing, it is found in film and containers.  |
| <b>Methyl Amines</b>                           | Methylamine, derived from methanol and ammonia, is found in shampoo, hair conditioner, fabric softener, cosmetics, and pharmaceuticals.  |
| <b>Methyl Ester</b>                            | Methyl ester is derived from the reaction between crude plant/vegetable oil or animal fats and alcohols under transesterification, and it is known as biodiesel.   |
| <b>Methyl Methacrylate (MMA)</b>               | MMA is an intermediate product for polymethyl methacrylate (PMMA) used for LCD screen light guide panels, automotive parts, and billboards.  |
| <b>Mixed C4</b>                                | Mixed C4, the byproducts produced from naphtha crackers for olefins production, can be isolated into butadiene, butane-1, and isobutene, and others.   |
| <b>Mixed Xylenes</b>                           | Aromatics derived from naphtha undergoing a chemical reaction aided by catalysts. They consist of paraxylene, orthoxylene, and metaxylene, all capable of serving as reactants for higher-value aromatics and as industry solvents.                          |
| <b>Mono Ethylene Glycol (MEG)</b>              | MEG, derived from the oxidation of ethylene produced by the reaction of ethylene oxide and water, can serve as an automobile antifreeze agent or a reactant with pure terephthalic acid to produce polyester, clear drinking-water bottles, film, and fiber. |
| <b>Naphtha</b>                                 | Naphtha is a general term for low-boiling hydrocarbon fractions that is a product of crude oil refining or a condensate splitter. It serves as petrochemical feedstock and as a solvent.   |
| <b>Olefins</b>                                 | Olefins are unsaturated hydrocarbons with at least one carbon-carbon bond. The main olefins include ethylene, propylene, and butadiene.  |
| <b>Oleochemicals</b>                           | Oleochemicals are natural chemicals derived from plant fats and animal fats, such as fatty alcohols, methyl ester, and glycerin.   |
| <b>O-Xylene or Orthoxylene (OX)</b>            | This aromatic compound with two methyl groups in the 1- and 2-positions of the benzene ring is used to produce phthalic anhydride, feedstock for plasticizers  |
| <b>O-Xylene or Orthoxylene (OX)</b>            | This aromatic compound with two methyl groups in the 1- and 2-positions of the benzene ring is used to produce phthalic anhydride, feedstock for plasticizers  |

## TECHNICAL TERMS & ABBREVIATIONS

|   |  |
|---|--|
| <b>Polymers</b>                         | Chemicals with molecular weights of 5,000 or more, derived when certain individual monomers come together and link up. Examples are polyethylene, rubber, and cellulose.   |
| <b>Polypropylene</b>                    | Polypropylene, a thermoplastic polymer derived from the reaction between propylene and catalysts, is used in containers, textiles, and injected plastics.  |
| <b>Polyethylene Terephthalate (PET)</b> | PET is made by combining mono ethylene glycol and pure terephthalic acid. PET and mono ethylene glycol serve as feedstock for synthetic fiber, water bottles, audiotapes, adhesive tapes, film, food packaging, and others.  |
| <b>Polyurethane (PU)</b>                | PU, a thermoplastic resulting from glycol and diisocyanate condensation, can be stiff, soft, or flexible, depending on the additives used. When blended with rubber, it provides shoe soles, heat insulators, windshield wipers, and others.   |
| <b>Polyvinyl Chloride (PVC)</b>         | PVC is a thermoplastic polymer produced from vinyl chloride monomers (VCM), and consists of unplasticized and plasticized PVC. It is used in water pipes, electric wire conduits, artificial leather, among others.  |
| <b>Propylene</b>                        | Propylene is an unsaturated hydrocarbon derived from propane, LPG, or naphtha. This feedstock of polypropylene is of three grades: refinery, chemical, and polymer, depending on the proportions of propylene and propane.   |
| <b>Purified Terephthalic Acid (PTA)</b> | PTA is a hydrocarbon compound resulting from paraxylene and is feedstock for polyester production.   |
| <b>P-xylene or Paraxylene (PX)</b>      | PX, feedstock for PTA, is an aromatic hydrocarbon with two methyl groups in the 1- and 4-positions of the benzene ring.  |
| <b>Pyrolysis Gasoline</b>               | Pyrolysis gasoline, a byproduct of naphtha distillation, can be blended with gasoline or used as feedstock for aromatics.  |
| <b>Rotomolding Compound</b>             | Rotomolding Compound, a byproduct produced from low-density Polyethylene (LLDPE), is plastic powders which are processed through rotational moulding machine at suitable temperature. It is used to manufacture some products such as water tanks, chemical storage tanks, playground, kayaks and other common products. |
| <b>Toluene</b>                          | Toluene, an aromatic hydrocarbon with one methyl group connected to the benzene ring, is feedstock for higher-valued aromatics, including benzene and xylene. It is used as a solvent in paints, adhesives, lacquer, thinner, and others.  |
| <b>Toluene Diisocyanate</b>             | This chemical derived from the reaction between toluene diamine and phosgene is used for polyurethane production.  |
| <b>Vinyl Chloride Monomer (VCM)</b>     | VCM is a hydrocarbon compound used as feedstock for PVC production. It is a colorless, sweet-smelling gas.   |





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