

THE NEW ERA





Vision

To Shape Material and Energy
Solutions in Harmony with Life

Mission

To Deliver with Innovations
the Better Attributes and
Solutions of Sustainable Material
and Energy for the Future



Values



- I** Individual Ownership
- S** Synergy
- P** Performance Excellence
- I** Innovation
- R** Responsibility for Society
- I** Integrity & Ethics
- T** Trust & Respect

Key Behaviors



“ดี”

ด้วยใจรับผิดชอบ

พนักงาน ไออาร์พีซี ต้องเป็น “คนดี”
มีจริยธรรม ถูกต้อง ไม่รังใส เคารพความคิดต่าง
และรับผิดชอบต่อองค์กร สังคม และสิ่งแวดล้อม

“เก่ง”
ทันโลกธุรกิจ

พนักงาน ไออาร์พีซี ต้องรู้จัก รู้กว้าง
บูรณาการคุณค่าร่วมและสร้างสรรค์ทางธุรกิจ
ให้กลุ่มบริษัท ไออาร์พีซี และพันธมิตร



“กล้า”

เพื่อความสำเร็จ

พนักงาน ไออาร์พีซี ต้องคิดต่าง
ทำสิ่งใหม่ สร้างนวัตกรรม ยินยอม
รับผิดชอบ นำอนาคตสู่ความสำเร็จ





Towards The New Era IRPC for a Sustainable Future

The Future Is Not Beyond IRPC's Imaginative Grasp
We Stand Ready to Take on the Fast-changing World of Business

Step Out into the Brave New World With Novel, Future-proof Business Concepts

IRPC Delivers Solution for
Every Needs Better Living Perfectly
in Tune with Megatrends
Non-stop Development
We Thrive on New Challenges
With Professional Integrity,
Transparency and Accountability
Backed by Operational Excellence



Pathway to Sustainability

with a Proactive Approach to a Living Planet

Robust Climate Actions
to Maintain a Delicate Balance
of the Ecosystem that Supports
All Life Forms, backed
by Cutting-edge Technologies
To Develop Innovations
for a Low-Carbon Society



**IRPC Is Poise to Take on Sustainability Leadership
for a Better World**

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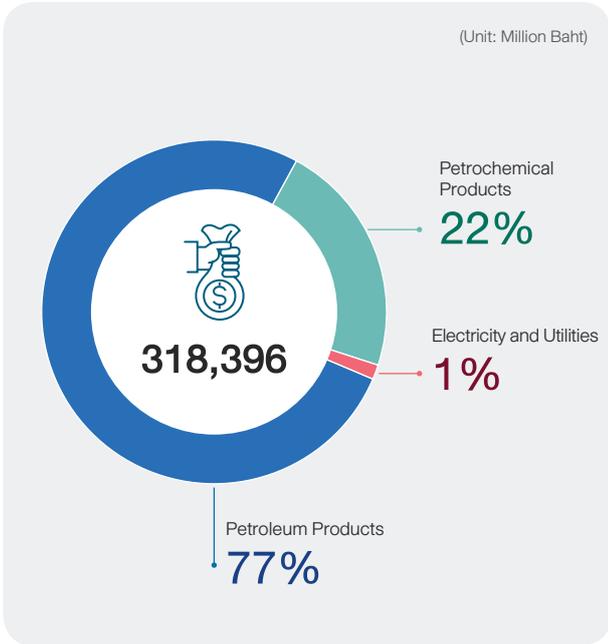
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379 About This Report

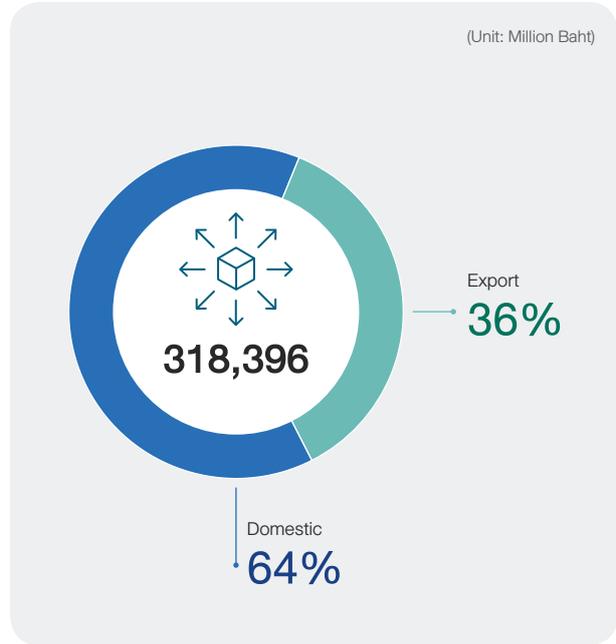
380 Assurance Report

Key Performance

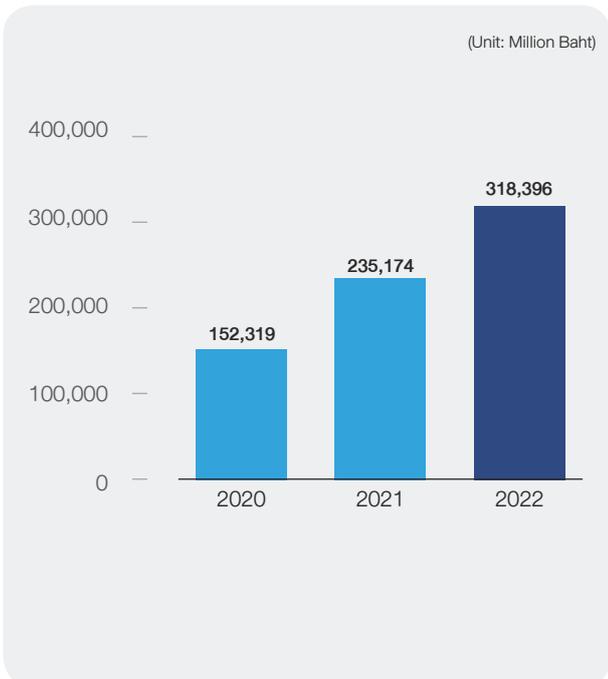
Net Sales



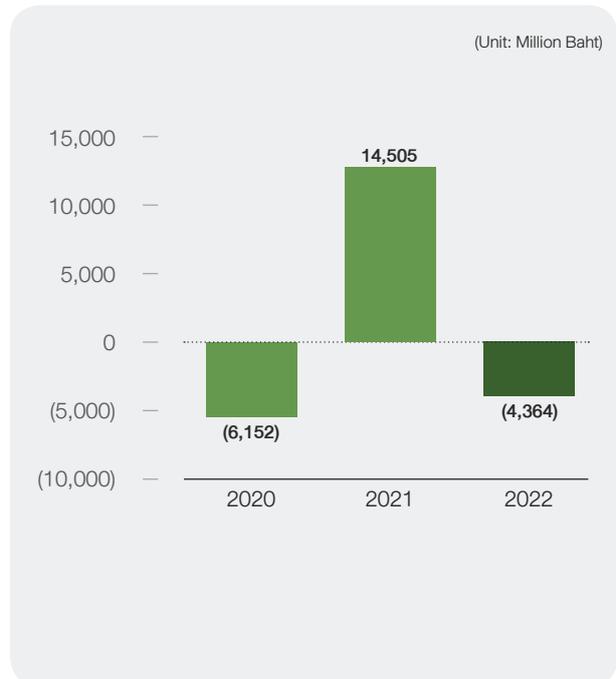
Sales Distribution



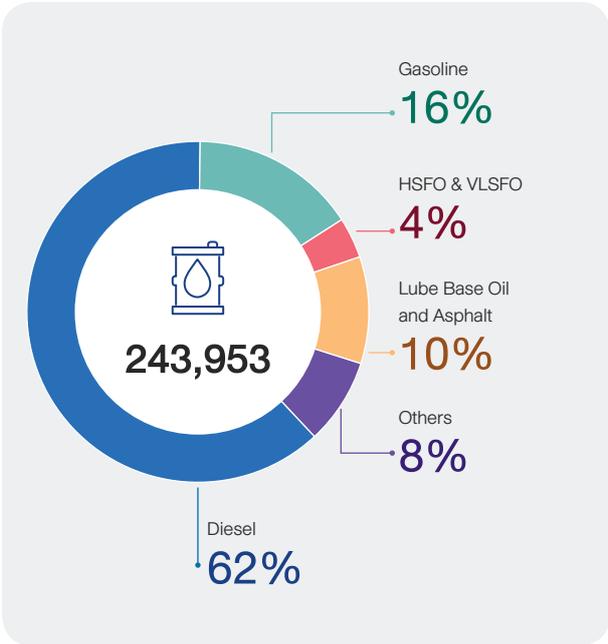
Net Sales



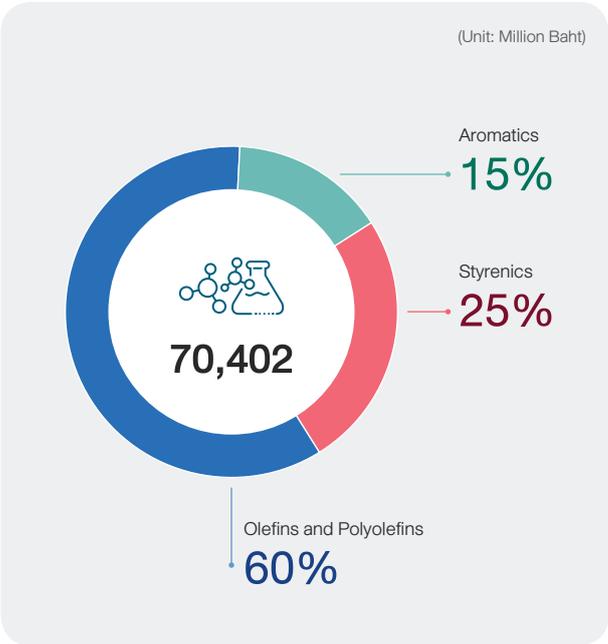
Net Profit



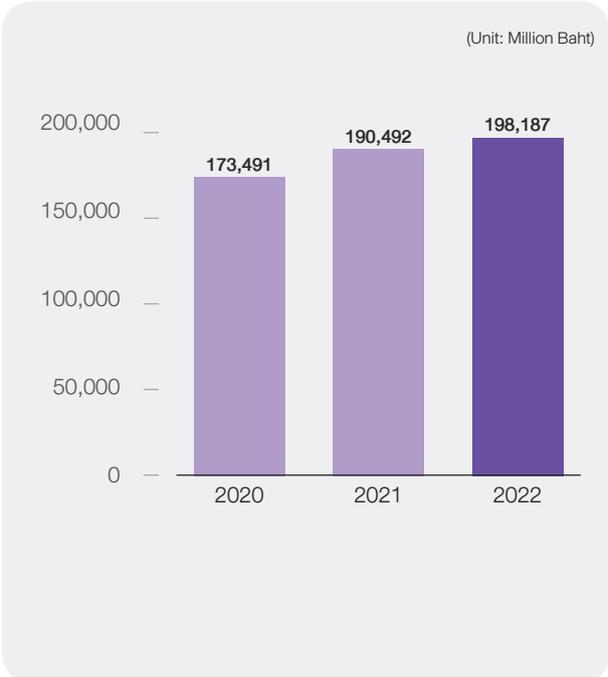
Petroleum Products



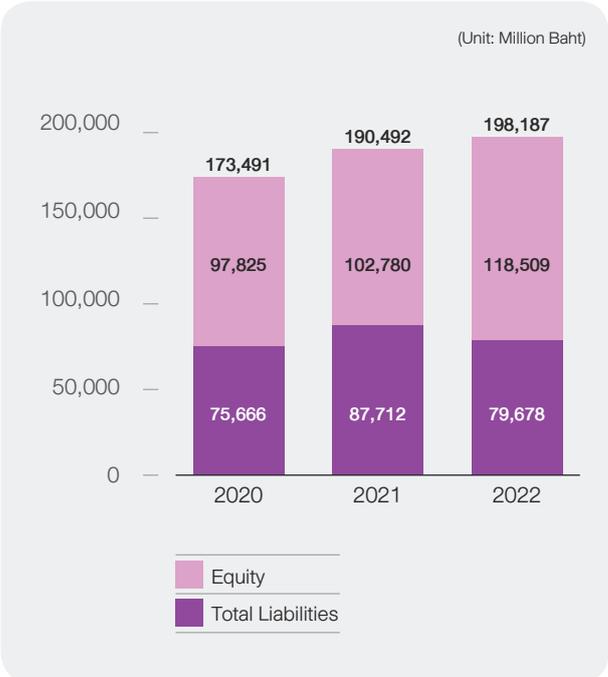
Petrochemical Products



Total Assets



Total Liabilities and Equity



FINANCIAL HIGHLIGHTS

Condensed Consolidated Financial Statements

(Unit: Million Baht)

	2022	2021	2020
Statement of Financial Position			
Current Assets	70,920	67,101	43,371
Total Assets	198,187	190,492	173,491
Current Liabilities	62,056	47,543	44,059
Total Liabilities	118,509	102,780	97,825
Shareholders' Equity	79,678	87,712	75,666
Registered Capital	20,475	20,475	20,475
Issued and Paid-up Capital	20,434	20,434	20,434
Statement of Income			
Sales Revenues ⁽¹⁾	324,800	255,115	174,463
Net Sales Revenues ⁽²⁾	318,396	235,174	152,319
Cost of Sales	314,892	228,989	174,491
Gross Profit (loss)	9,908	26,126	(28)
Selling Expenses	1,964	2,105	1,375
Administrative Expenses	5,275	5,673	5,718
Profit (loss) from Operations	(3,912)	17,914	(6,115)
Net Profit (loss)	(4,364)	14,505	(6,152)
Net Profit (loss) per Share (baht)	(0.21)	0.71	(0.30)
Statement of Cash Flows			
Net cash flows from (used in) operating activities	(3,712)	11,342	11,149
Net cash flows from (used in) investing activities	(8,931)	(2,853)	(3,871)
Net cash flows from (used in) financing activities	4,637	(6,104)	(1,462)
Net increase in cash and cash equivalents	(8,006)	2,385	5,815
Cash and cash equivalents at the beginning of the period	11,236	8,851	3,036
Cash and cash equivalents at the end of the period	3,230	11,236	8,851

Notes: ⁽¹⁾ Sales revenues include sales of petroleum, petrochemical, power and utilities, storage tank, port service, etc.

⁽²⁾ Net sales revenues include sales of petroleum (excluding excise tax), petrochemical, power and utilities.

Key Financial Ratios

	2022	2021	2020
Liquidity Ratio			
Current Ratio (times)	1.14	1.41	0.98
Quick Ratio (times)	0.29	0.53	0.42
Cash Flow Current Ratio (times)	(0.07)	0.25	0.25
Account Receivable Turnover Ratio (times)	22.48	21.74	17.63
Collection Period (days)	16	17	21
Inventory Turnover Ratio (times) ⁽¹⁾	8.61	8.34	7.40
Inventory Period (days)	42	44	49
Accounts Payable Turnover Ratio (times)	9.97	8.70	7.14
Payment Period (days)	37	42	51
Cash Cycle (days)	21	19	19
Profitability Ratio			
Gross Profit Margin ⁽²⁾	3.05%	10.24%	(0.02%)
Net Profit Margin ⁽³⁾	(1.34%)	5.69%	(3.53%)
Return on Equity	(5.23%)	17.79%	(7.75%)
Efficiency Ratio			
Return on Asset	(2.25%)	7.97%	(3.50%)
Total Asset Turnover Ratio (times)	1.68	1.41	1.00
Financial Policy Ratio			
Debt to Equity Ratio (times)	1.49	1.17	1.29
Interest-bearing Debt to EBITDA Ratio (times) ⁽⁴⁾	16.71	2.29	12.90
Net Interest-bearing Debt to EBITDA Ratio (times) ⁽⁵⁾	14.89	1.92	11.64
Interest-bearing Debt to Equity Ratio (times)	0.90	0.70	0.82
Net Interest-bearing Debt to Equity Ratio (times)	0.86	0.57	0.70
Interest Coverage Ratio (times)	2.13	15.52	2.47
Dividend Payout Ratio	n.a.	31%	n.a.
Book Value per Share (baht/share)	3.90	4.29	3.70

Notes: ⁽¹⁾ Inventory turnover ratio = cost of sales divided by net inventory (average)

⁽²⁾ Gross Profit Margin = gross profit divided by sales revenues

⁽³⁾ Net profit margin ratio = net profit divided by sales revenues

⁽⁴⁾ Interest - bearing debt to EBITDA ratio = interest-bearing debt (average) divided by earnings before interest, taxes, depreciation and amortization (EBITDA)

⁽⁵⁾ Net Interest-bearing debt to EBITDA ratio = net interest-bearing debt - cash (average) divided by earnings before interest, taxes, depreciation and amortization (EBITDA)

Key Developments in Sustainable Growth



PTT, IRPC and Innobic (Asia) open “Innoplymed” plant to produce nonwoven fabrics

for the manufacture of medical consumables, such as face masks, surgical gowns, PPE suits, baby and adult diapers, including various medical filter supplies, etc., as part of import substitution to ensure public health security, strengthen domestic medical device industry and raise the quality of life of Thai people.

Increase the efficiency of logistics management system

in collaboration with partner, PC Siam, opened a joint oil depot with a capacity of 50 million liters to expand the business to accommodate the logistics and transportation sectors and economic growth of Surat Thani Province as well as enhance energy security of the southern region.



Update the “POLIMAXX” branding, emphasizing the corporate image as a leader in petrochemical innovation,

under the concept “Make Greater Things” for better living, reflecting a modern petrochemical brand identity that is eco-friendly to reassure partners and customers of our capability to provide solutions in response to the rapidly changing global trends at the present and in the future.



IRPC together with PTT Plc., Innobic (Asia) Co., Ltd., and Panjawattana Plastic Plc.

signed a Memorandum of Understanding to conduct a joint study and identify business opportunities in medical consumables as well as market research on medical device market and design and development of medical devices.



Success in research and development of medical device innovations

IRPC in collaboration with the Faculty of Medicine, Chulalongkorn University, have researched and developed a “restful pillow” to relieve acid reflux symptoms.

With memory foam made from polyurethane (PU) produced by IRPC that is comfortable, flexible and dust mite-proof to alleviate patients’ acid reflux symptoms. The specially designed pillow encourages the user to sleep at an incline thereby minimizing nighttime reflux and helps improve sleep quality.

IRPC collaborates with PTT to study investment using Advanced Business Integration (ABI) strategy

to increase the proportion of revenue stream from new businesses by jointly developing 4 core business groups, namely manufacture of high-performance materials, production of key components of Li-ion batteries, purification of substances and businesses relating to chemicals for quality of life, in order to improve competitive edge and promote polymer-based downstream sector.



IRPC signs contract for nitrogen and oxygen gas production

In cooperation with Bangkok Industrial Gas Co., Ltd. (BIG) to support the low-sulfur Euro 5-compliant diesel production project (UCF project) and reduce greenhouse gas emissions from transportation and manufacturing processes. This is part of IRPC’s effort to achieve Net Zero emissions through installation of machinery and equipment for the production and transportation of nitrogen and oxygen gases at the refinery. Thus, reducing pollution and dust problems, raising the country’s environmental standards.



IRPC-Faculty of Architecture, Chulalongkorn University conduct joint research and development to create 3D printing materials from recycled plastics

Both parties signed a memorandum of understanding for cooperation in joint research and development to study processing of used plastics to achieve suitable properties for recycling as materials for 3D printing.

บริษัท ไออาร์พีซี จำกัด (มหาชน)
ผู้นำในธุรกิจปิโตรเลียมและปิโตรเคมี พร้อมสร้างสรรค์
นวัตกรรมการใช้วัสดุและพลังงาน เพื่อชีวิตที่ลงตัว

เสนอขายหุ้นกู้ครั้งที่ 1/2565
ครบกำหนดไถ่ถอนปี พ.ศ. 2570 ชนิดระบุชื่อผู้ถือ ประเภทไม่ด้อยสิทธิ
ไม่มีประกัน และมีผู้แทนผู้ถือหุ้นกู้

อายุ 5 ปี ดอกเบี้ย 3.10% ต่อปี จ่ายดอกเบี้ยทุก 6 เดือน
อันดับความน่าเชื่อถือของผู้กู้ "A-(tha)" โดยบริษัท ฟูทซ์ เรตติ้งส์ (ประเทศไทย) จำกัด
เปิดจองชื่อวันที่ 17 – 19 พฤษภาคม 2565



CEO TO CEO

Mr. Krit Imsang assumed the position of the 7th Chief Executive Officer and President, succeeding Mr. Chawalit Tippawanich who retired in accordance with resolution of the Board of Directors' meeting.

IRPC issues and offers debentures worth Baht 12,000 million

IRPC has successfully issued and offered unsubordinated and unsecured debentures with a debenture holders' representative, totaling Baht 12,000 million, consisting of debentures with a 5-year tenor worth Baht 7,000 million for subscription through the "Paotang" application, and debentures with 4-year, 7-year, 10-year and 12-year tenors worth a total of Baht 5,000 million. This successful fundraising reflects investor confidence in the company's strong fundamentals.



IRPC makes progress towards Net Zero Emissions

IRPC has worked towards following goals: 20% reduction of carbon dioxide emissions by 2030, carbon neutrality by 2050 and Net Zero emissions by 2060.



PTT Group conducts a pilot on CCS Hub Model, targeting Net Zero carbon emissions

IRPC signed a memorandum of understanding on the feasibility study on the application of Carbon Capture and Storage (CCS) technology, or CCS Hub Model.



IRPC and PTT Group join forces to gain entry to the bio jet fuel business, positioning Thailand as a manufacturing hub in Southeast Asia.

To diversify into sustainable bio jet fuel production, an alternative energy of the future with high growth potential, using efficient cutting-edge production technology that meets the internationally accepted standards.



Social



IRPC opens the Learning Center and agro-tourism at Suan Yai Da “Jae Boonchuen”

integrating innovations, technologies, knowledge, and potential of the company’s personnel with local wisdom to help increase productivity with modern agriculture, featuring innovative zinc oxide nano fertilizer “White Bear Fertilizer” for use to protect and nourish durian trees. Specially designed Floating Solar, a renewable energy system with 5 kW capacity, has also been installed to produce electricity for agricultural irrigation system.





The 157th Mobile Prosthetic Leg Workshop under Royal Patronage



IRPC sponsored the opening ceremony of the 157th Mobile Prosthetic Leg Workshop at IRPC Sport Complex, Rayong Province, to improve the quality of life of amputees in Rayong and nearby provinces. The company has donated special-grade polypropylene plastic amounting to 20 tons per year to be used as the main materials for the production of prosthetics. IRPC also collected waste materials from the production for recycling and further research and development so that the waste materials can be used to produce prosthetic components and parts for other people with disabilities and patients.



In conjunction with the Sukhothai Provincial Public Health Office and the Thai Reach group, Sirindhorn Hospital, Khon Kaen Province, to launch a training program to develop skills for the use 3D printer to create “prosthetic hands.”



To support Thai Reach group, Sirindhorn Hospital, Khon Kaen Province, to provide training to transfer skills in the use of 3D printing technology for the production of prosthetic fingers, hands, and arms to public health personnel in Sukhothai, Kamphaeng Phet, Tak, Phitsanulok, Uttaradit provinces. The company also provided 10 3D printers and plastic fibers to hospitals and education institutions for educational and experimental exercises to best help people with disabilities in their respective areas.

Signing an agreement to develop a sustainable groundwater resource system

to study and develop materials and equipment for use in the research and development of materials and equipment for use in water resource management together with development of the internet of things (IoT) for intelligent local community management.



Deliver village-based tap water supply system to Lam Sai Yong Model Project in Buriram Province

To serve as a pilot project for water management system, and the development of IRPC Smart Farming to alleviate water shortage during the dry season.



IRPC and IRPC Technological College provide assistance to people affected by flood.

IRPC and IRPCT dispatched volunteers with repair skills to help flood victims repair their automobiles, motor-cycles, agricultural water pumps as well as electrical appliances damaged by flood in Wang Chan District, Rayong Province.



Participation in a show of solidarity with the GCNT Forum 2022 sustainability leadership conference to drive the country's sustainability goals.



Organized by the Global Compact Network Thailand together with the United Nations in Thailand to demonstrate commitment to tackle biodiversity challenges and combat the adverse effects of global warming to preserve ecosystems at least in 30 per cent of the country's total area within 2030.



IRPC takes part in the 6th National Dialogue on Business and Human Rights

as a director of the Global Compact Network Thailand (GCNT) to jointly drive businesses that respect, protect and foster human rights.

IRPC CG Day 2022

To demonstrate our commitment to drive business that goes hand in hand with good corporate governance principles under the "CG with G3 concept: "Empowered by You" to reaffirm our intention to conduct business under good governance and readiness to consistently implement corporate governance policy.



Awards of Recognition for Success



Dow Jones Sustainability Index (DJSI)

IRPC was listed in DJSI for the 9th consecutive year in the Oil & Gas Refining and Marketing industry that reflects our unwavering commitment to conduct business in accordance with sustainable development guidelines.



Asia Responsible Enterprise Awards 2022

in the Health Promotion category from Enterprise Asia, an independent advocacy organization that promote and develop socially and environmentally responsible enterprise across Asia, for VAJIRA LAB Project: Healthcare Security for Society (Vajira Lab for Society).



“ASEAN CG Scorecard” Award

IRPC has been among ASEAN Top 20 thanks to its good corporate governance and received ASEAN Asset Class PLCs awarded to companies that achieved evaluation score of 97.50 or higher.



Outstanding Industry Award

Polypropylene plastic pellet plant in the category of productivity enhancement in energy management from the Ministry of Industry’s Department of Industrial Promotion.



Asian Excellence Award 2022

- Asia’s Best CEO
- Asia’s Best CFO
- Best Investor Relations Professional
- Best Environmental Responsibility
- Best Investor Relations Company



Asia’s Best CEO
Chawalit Tippawanich
(President & Chief Executive Officer)



Asia’s Best CFO
Nidcha Jirameethanakij
(Chief Financial Officer)



Best Investor Relations Professional
Kanyamas Ritthidej
(VP Finance & Investor Relations Department)

Asian Excellence Award 2022 organized by Corporate Governance Asia Magazine



Outstanding Award for “Human Rights Role Model Organization” for the 4th consecutive year

from the Department of Rights and Liberties Protection, Ministry of Justice in the category of large business enterprise that respects human rights, takes social responsibility, and implements environmental stewardship.



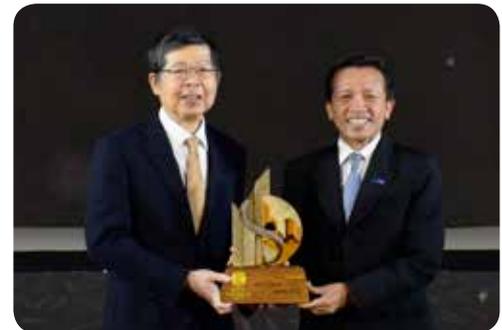
National Innovation Award

Outstanding Innovative Enterprise in the large business enterprise category, for the integration of digital system, technologies, and innovations in all stages of business operations.



Quality Person of the Year Award

Mr. Krit Imsang, Chief Executive Officer and President, received the honor plaque “Quality Person of the Year 2022” from the Foundation of the Science and Technology Council of Thailand (FSTT) for his outstanding achievement in personal life and work life and dedication to activities for the benefit of the society and the nation in various fields.



SET Awards 2022

“Sustainability Awards of Honor” for operating business in accordance with sustainable development guidelines and for inclusion to the “List of Sustainable Stocks” for 8 consecutive years.

1st runner-up of UN Women 2022 Thailand WEPs Awards from the United Nations organization for the promotion of gender equality and the empowerment of women, or UN Women,

in the category of Gender Equality Promotion through Community and Industrial Activities, from IRPC Smart Farming Project, Suan Yai Da “Jae Boonchuen”



Eco Factory Award

for a total of 11 IRPC factories, in the category of resource management and mitigation of environmental impacts in the areas surrounding IRPC industrial zone, Rayong Province, for the 8th consecutive year from the Industrial Environment Institute of the Federation of Thai Industries.

- 
- o Message from Chairman
 - o Message from CEO



Dear Shareholders,

2022 was highly challenging due to the cascade of a number of severe chaotic events. From the military intervention in Ukraine to the disruption in the supply of oil and gas and their drastic price spikes, the strict enforcement of China's Zero-COVID policy and that inflation has popped to troubling high levels; the convergence of these disruptive events negatively impacted almost every enterprise in various manufacturing cycles. Enterprises in Thailand, and IRPC Public Company Limited, are negatively affected as well.

IRPC Public Company Limited has made significant changes to cope with present and future emerging challenges. Our vision and strategy focus on strengthening from within by leveraging our expertise in oil refinery and petrochemical manufacturing, and increasing the proportion of our production of high-value specialty products. We have also embarked on a mission to enhance organizational agility to move forward as a leading company in material and energy innovation, based on sustainable development, fulfilling our corporate responsibility to society and the environment under the principle of good corporate governance and transparency.

In 2022, the Board of Directors carried out their duties as provided in the Company's charter, all in the best interest of the Company, shareholders, and all stakeholders,

with emphasis in supporting the management, as well as in the internal control, risk management, organization development, and good corporate governance. The Company received the "ASEAN CG Scorecard" award for being among the TOP 20 ASEAN domiciled companies with good corporate governance, the National Innovation Award in the category of "Innovative Organization", and "Sustainability Award of Honor" for outstanding sustainable development in operations. The Company is also an awardee of "Thailand Sustainability Investment" for 8 consecutive years.

Lastly, in September 2022, Mr. Chawalit Tippawanich completed his term as President and Chief Executive Officer. The Board of Directors had appointed Mr. Kris Imsang as President and Chief Executive Officer, effective from October 1, 2022, joining force in strengthening the Company to cope with external challenges.

On behalf of the Board of Directors, I would like to express our gratitude to our shareholders and stakeholders for your trust and kind support. And thanks to the directors, Mr. Chawalit Tippawanich, executives and employees for giving your best efforts and perseverance to ensure the Company's stability and sustainable growth throughout this extremely challenging year.



Mr. Chawalit Tippawanich

Chief Executive Officer and President

Appointed Positions December 1, 2021 - September 30, 2022

industries under the Thailand 4.0 policy to accommodate the expansion of urban society, and various infrastructure investment projects both domestically and internationally, in line with the company's strategy to leverage its innovations to create value to society and protect the environment in a sustainable manner.

IRPC accomplished the goal by increasing the proportion of high value specialty products to 22% of its product portfolio. The year also marked the start of commercial operation of Innopolymed plant to manufacture Nonwoven Fabrics and medical consumables. In addition, the company implemented four projects: Project to expand production capacities of PP Meltblown to 40,000 tons per year, thus becoming the country's biggest producer of such product, PP Spunbond plastic pellet production project with a production capacity of 190,000 tons per year, for the manufacture of medical equipment and personal hygiene products, Project to produce Random Copolymer Polypropylene Pipe (PPR) with capacity of 80,000 tons per year, for the manufacture of the first Phthalate-free hot and cold water pipes in the region, and Project to produce HDPE 100-RC with capacity of 40,000 tons per year, for the manufacture of industrial pipes with up to 100 years of service life to reduce construction cost and time.

In 2022, IRPC procured an oil depot in Surat Thani Province with a capacity of 50 million liters to accommodate economic growth of the southern region. The company also accomplished a major maintenance of the refinery in 5 years to increase production efficiency and eco-friendly credentials to accommodate the Ultra Clean Fuel Project (UCF) to produce Euro 5-compliant diesel that will begin commercial operation in January 2024.

With climate change having widespread effects on the environment around the world, IRPC has made a commitment to reduce GHG emissions by 20 per cent from the base year 2018 by the year 2030, carbon neutrality by 2050, and Net Zero emissions by 2060.

Dear Shareholders,

The global economic recovery from COVID-19 pandemic may have come a long way from rock bottom levels but any further expansion was weighed down by uncertainty brought on by the Russia-Ukraine war as many countries found themselves embroiled in rising geopolitical tensions. High inflation has spread far and wide as China's economy slowed down, and the baht became more volatile. Meanwhile, environmental impacts of climate change kept getting worse.

2022 was another challenging year with crises in all directions, causing crude oil prices to rise sharply at a time when the overall economic conditions had not recovered fully. This coincided with the trough of the petrochemical business cycle in 20 years, giving rise to material impact on IRPC's business direction. Therefore, the company switched strategy and adapted to rapidly changing situations by accelerating the implementation of new policies with a view to transitioning towards the status of a leading material and energy innovation company of the future. The company strives to build capability to take on challenges and capitalize on opportunities of the global trend in Health and Wellness. This is in alignment with the country's strategic plan, targeting new S-Curve

**Mr. Kris Imsang**

Chief Executive Officer and President
Appointed Positions October 1, 2022



Based on our firm belief that good innovations must go hand in hand with better living, IRPC undertakes to develop solutions for the improvement of the quality of life of amputees in accordance with our commitment to Creating Shared Value (CSV). For more than 10 years, the company has donated PP plastic pellets to the Protheses Foundation of HRH the Princess Mother for the production of prosthetic legs free of charge for over 30,000 people. The company also participated in the 157th mobile prosthetic workshop in July at IRPC Sport Complex in Rayong Province.

Having identified the opportunity to develop plastic fiber products with the use of 3D Printing technology to help people with disabilities, IRPC sponsored Thai Reach, Sirindhorn Hospital, Khon Kaen Province, to implement the Carpenter Program, a training program to develop skills for the use of 3D printing technology in the production of prosthetic devices, such as prosthetic fingers, hands, and arms. Twenty public health personnel in Sukhothai, Kamphaeng Phet, Tak, Phitsanulok, Uttaradit provinces participated in the program, with people with disabilities at the Ban Khwang Carpentry Cooperative, Ban Kluai Subdistrict, Mueang District, Sukhothai Province as a case study. The company donated 10 3D printers along with plastic fibers to hospitals and education institutions for use in the skill development program to help people with disabilities in the areas.

In addition, the company also supports the initiative to improve the quality of life of agricultural communities, combining its industry body of knowledge and personnel's experience with traditional knowledge and modern agriculture practices by introducing the use of innovative nano-zinc oxide through "White Bear Fertilizer," and Floating Solar using the company's gray HDPE products to develop the learning center and agro-tourism at Suan Yai Da "Jae Boonchuen" to promote IRPC Smart Farming as a model for multi-disciplinary learning for the benefit of farming communities throughout the country.

With unwavering commitment to conduct its business in accordance with sustainable development concept and corporate social responsibility, IRPC's accomplishments were widely recognized by international and national organizations. The company received numerous accolades, such as the 1st runner-up of the UN Women 2022 Thailand WEPs Awards for advancing gender equality through IRPC Smart Farming Project at Suan Yai Da "Jae Boonchuen," Asia Responsible Enterprise Awards 2022 in the field of Health Promotion from Enterprise Asia, an independent organization that promotes and helps enterprises in Asia develop CSR and environmental actions, Outstanding Industry Award for polypropylene plastic pellet production plant from the Ministry of Industry's Department of Industrial Promotion, and outstanding awards "Human Rights Model Organization" for the 4th consecutive year from the Department of Rights and Liberties Protection, Ministry of Justice, among others.

With cooperation, determination, and dedication in performing their duties, the Board of Directors, the Management, and employees also abide by the guiding principles of integrity, competency, and courage. IRPC stands ready to forge ahead to achieve its goals along the pathway towards sustainable growth in the best interests of all shareholders and stakeholders along with commitment to environmental stewardship and inclusive and sustainable growth for all.

Board of Directors



Dr. Ekniti Nitithanprapas

Director/
Member of the Risk
Management Committee

**Mr. Jumpol Sumpaopol**

Independent Director/
Member of the Audit Committee

**Miss Peangpanor Boonklum**

Director/
Member of the Risk Management
Committee

**Asst. Prof. Dr. Chaiyaporn Puprasert**

Independent Director/
Member of the Corporate
Governance Committee

**General Aittipol Suwannarat**

Independent Director/
Member of the Corporate
Governance Committee

**Mr. Petai Mudtham**

Director/
Member of the Nomination
and Remuneration
Committee

**Mr. Yordchatr Tasarika**

Independent Director/
Member of the Nomination
and Remuneration Committee

**Mr. Prasong Intaranongpai**

Director/
Member of the Risk Management
Committee



Board of Directors, IRPC Public Company Limited

Dr. Siri Jirapongphan

Age: 68 Years

Appointed Positions:

Independent Director/Chairman

[Date of being an Independent Director](#)

19 January 2022

[Date of being a Chairman](#)

5 April 2022

[Years of being a Chairman](#)

7 Months 27 Days

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": - Share Possession: - %

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- Bachelor's Degree in Chemical Engineering (Honor), California Institute of Technology, USA
- Doctor's Degree in Chemical Engineering, Massachusetts Institute of Technology, USA
- Director Luncheon Briefing (M-DLB) Class 2/2008, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP) Class 77/2006, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

Jun. 2021 - Oct. 2022	Business rehabilitation plan administrator, Thai Airways International Public Company Limited
Apr. 2021 - Apr. 2022	Chairman of The Nomination and Remuneration Committee/Member of the Audit Committee Bangkok Bank Public Company Limited
Nov. 2017 - Jul. 2019	Minister of Energy
Nov. 2015 - Nov. 2017	Independent Director/Member of the Audit Committee, Thai Oil Public Company Limited
Oct. 2014 - Sep. 2015	Member of the National Reform Council
Sep. 2014 - Apr. 2015	Independent Director/Member of the Risk Management Committee, PTT Global Chemical Public Company Limited
Jan. 2010 - Nov. 2017	Executive Director, Petroleum Institute of Thailand

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

Dec. 2022 - Present	Independent Director, IRPC Public Company Limited
Apr. 2022 - Present	Chairman, IRPC Public Company Limited
Apr. 2022 - Present	Chairman of the Audit Committee, Bangkok Bank Public Company Limited
Jul. 2020 - Present	Independent Director, Bangkok Bank Public Company Limited

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

Oct. 2021 - Present	Director, Petroleum Institute of Thailand Foundation
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Mr. Somnuk Bomrungsalee

Age: 65 Years

Appointed Positions:

Independent Director/Chairman of the Audit Committee

[Date of being a Director](#)

9 April 2014

[Date of being an Independent Director](#)

1 October 2017

[Date of being the Chairman of the Audit Committee](#)

2 December 2017

[Years of being a Director](#)

8 Years 8 Months

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": 50,000 Share Possession: 0.00024 %

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- Bachelor of Engineering (Civil Engineering), King Mongkut's University of Technology Thonburi (KMUTT)
- Master of Public and Private Management, The National Institute of Development Administration (NIDA)
- Advanced Master of Management program, Class 2/2018, The National Institute of Development Administration (NIDA)
- The Program for Senior Executive on Justice, Class 20/2015, Administration Batch, National Justice Academy
- The Executive Program in Energy Literacy for a Sustainable Future, Class 5/2014, Thailand Energy Academy (TEA)
- Executive Training Course 2, Class 5/2013, Office of the Civil Service Commission
- Advanced Certificate Course Politics and Governance in Democratic Systems for Executives, Class 16/2012, King Prajadhipok's Institute
- Executive Training Course, Class 65/2009, Office of the Civil Service Commission
- Energy Executive Course, Class 2/2008, Ministry of Energy
- The Role of the Board in IT Governance, Year 2020, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 233/2017, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

Feb. 2018 - 2019	Advisor, Energy Fund Administration Institute
Nov. 2017 - 2018	Sub - Committee, State Audit Commission, Office of the Auditor General of Thailand

Apr. 2016 - Nov. 2017	Member of the Nomination and Remuneration Committee, IRPC Public Company Limited
Oct. 2016 - Sep. 2017	Deputy Secretary of Energy
Oct. 2015 - 2019	Sub - Committee, Energy Commission, The National Legislative Assembly
Jul. 2014 - Sep. 2016	Inspector General, Ministry of Energy

Current Position

Board member/Management in Listed Company - The Stock Exchange of Thailand

Nov. 2018 - Present	Independent Director/Audit Committee/ Chairman of Nomination and Remuneration Committee, Megachem (Thailand) Public Company Limited
Dec. 2017 - Present	Chairman of the Audit Committee, IRPC Public Company Limited
Oct. 2017 - Present	Independent Director, IRPC Public Company Limited
Apr. 2014 - Present	Director, IRPC Public Company Limited

Board member/Management in Non-Listed Company - The Stock Exchange of Thailand

None

Dr. Anusorn Sangnimnuan

Age: 68 Years

Appointed Positions:

Independent Director/Chairman of the Risk Management Committee

[Date of being an Independent Director](#)

27 August 2016

[Date of being the Chairman of the Risk Management Committee](#)

1 April 2021

[Years of being an Independent Director](#)

6 Years 4 Months

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": - Share Possession: - %

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- B.Sc. (Chemical Engineering), Chulalongkorn University
- M.Eng. (Environmental Engineering), Asian Institute of Technology (AIT)
- Ph.D. (Chemical Engineering), Monash University, Melbourne, Australia
- Diploma, National Defence College, The joint State - Private Sector Course, Class 20, Thailand National Defence College
- Leadership Program, Class 10, Capital Market Academy The Stock Exchange of Thailand
- Advanced Diploma, Public Administration and Public Law, Class 5, King Prajadhipok's Institute
- The Role of the Board in IT Governance, Year 2020, Thai Institute of Directors Association (IOD)
- Director Refreshment Training Program (RFP), Class 5/2022, Thai Institute of Directors Association (IOD)
- DCP Refresher Course (DCP RE), Class 1/2008, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 62/2005, Thai Institute of Directors Association (IOD)
- Director Accreditation Program (DAP), Class 40/2005, Thai Institute of Directors Association (IOD)
- Finance for Non-Finance Directors Program (FND), Class 22/2005, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

Sep. 2016 - Mar. 2021	Chairman of the Corporate Governance Committee, IRPC Public Company Limited
2014 - 2017	Independent Director, Prukso Real Estate Public Company Limited
2014 - 2017	Chairman, The Transport Company limited
2013 - 2017	Director, Office of The National Economic and Social Development Board
2013 - 2016	Director, The Krungthep Thananakom Company Limited

Current Position

Board member/Management in Listed Company - The Stock Exchange of Thailand

Apr. 2021 - Present	Chairman of the Risk Management Committee, IRPC Public Company Limited
Aug. 2016 - Present	Independent Director, IRPC Public Company Limited
2016 - Present	Independent Director/Chairman of the Corporate Governance Committee/ Member of the Nomination and Remuneration Committee, Prukso Holding Public Company Limited
2016 - Present	Director, B.Grimm Power Public Company Limited

Board member/Management in Non-Listed Company - The Stock Exchange of Thailand

None

Mr. Supot Laosuarpha

Age: 65 Years

Appointed Positions:

Director/Chairman of the Corporate Governance Committee

[Date of being a Director](#)

31 March 2021

[Date of being the Chairman of the Corporate Governance Committee](#)

5 April 2022

[Years of being a Director](#)

1 Year 9 Months

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": 50,000 Share Possession: 0.00024%

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- Bachelor on Laws, Ramkhamhaeng University
- Master of Management (Law and Management), College of Management, Mahidol University
- Lawyer License, Lawyers Council of Thailand
- Graduate Diploma Program in Business Law, Thammasat University
- Advanced Certificate Course in Public Administration and Law for Executives, Class 5, King Prajadhipok's Institute
- The Executive Program by Sasin Graduate Institute of Business Administration of Chulalongkorn University (SEP21)
- Training Course on Administrative Justice for Executives, Class 1, Administrative Court Office
- Administrative Justice for Executives Course, Class 6, Public Prosecution Official Training Institute, Office of The Attorney General
- Certificate in Anti-Corruption Strategic Management for Senior Executives, Class 4, Office of The National Anti-Corruption Commission
- Leadership Succession Program (LSP), Class 3, Institute of Research and Development for Public Enterprise
- Rule of Law for Democracy, Class 5, College of the Constitutional Court
- Corporate Governance for Directors and Senior Executives of Regulators, Class 20, King Prajadhipok's Institute
- Top Executive in Energy Program, Class 12, Thailand Energy Academy (TEA)
- Director Certification Program (DCP), Class 139/2010, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

Apr. 2021 - Apr. 2022	Member of the Corporate Governance Committee, IRPC Public Company Limited
2019 - Feb. 2021	Legal Advisor, IRPC Public Company Limited
2018 - 2019	Advisor to the Working Group of the Minister of Energy
2018 - 2019	Director, State Railway of Thailand
2018 - 2019	Chairman of Subcommittee Corporate Governance and Social Responsibility, State Railway of Thailand

2018 - 2019	Member of the Audit Committee, State Railway of Thailand
2018	Sub-Committee on Agenda Screening to Board of Director, Port Authority of Thailand
2018	Sub-Committee on Legal to Board of Director, Port Authority of Thailand
2018	Sub-Committee on Asset Reformation, Port Authority of Thailand
2017 - 2018	Legal Advisor, Business Professional Solutions Recruitment Company Limited
2016 - 2018	Chairman, Business Services Alliance Company Limited
2016 - 2017	Director, East Mediterranean Gas S.A.E. Company Limited
2016 - 2017	Senior Executive Vice President Taking a Position of Executive Vice President, Office of Corporate Legal, PTT Public Company Limited
2016 - 2017	Senior Executive Vice President, under Senior Executive Vice President, Human Resources and Organization Potential Responsible for controlling Office of Corporate Legal, PTT Public Company Limited
2015 - May 2022	Chairman, PTT Green Energy (Thailand) Company Limited
2012 - 2015	Director, Energy Complex Company Limited
2011 - 2016	Director, Business Services Alliance Company Limited

Current Position

Board member/Management in Listed Company - The Stock Exchange of Thailand	
Apr. 2022 - Present	Chairman of the Corporate Governance Committee, IRPC Public Company Limited
Mar. 2021 - Present	Director, IRPC Public Company Limited
Board member/Management in Non-Listed Company - The Stock Exchange of Thailand	
2020 - Present	Adviser to the Minister of Energy
2020 - Present	Sub-Committee on Creation and Development of Curriculum and Learning Materials on Anti-Corruption, 2021, Office of the National Anti-Corruption Commission
2020 - Present	Sub-Committee on Legal and Regulatory, Office of the National Anti-Corruption Commission
2018 - Present	Promotion of National Strategy on Anti-Corruption Phase 3 (2017-2021) Committee, Committee No. 1, Office of the National Anti-Corruption Commission
2016 - Present	Legal committee Federation of Thai Industries

Mr. Chansak Chuenchom

Age: 55 Years

Appointed Positions:

Director/Chairman of The Nomination and Remuneration Committee

[Date of being a Director](#)

1 October 2021

[Date of being the Chairman of The Nomination and Remuneration Committee](#)

1 December 2022

[Years of being a Director](#)

1 Year 2 Months

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": - Share Possession: - %

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- Bachelor of Engineering Program in Mechanical Engineering, Khon Kaen University
- Master of Business Administration Program, Kasetsart University
- 9th Strategy and Innovation for Businesses in Asia (SIBA) Training, The College of Management, Mahidol University, in collaboration with Sloan School of Management, Massachusetts Institute of Technology (MIT)
- Training course for senior anti-corruption strategists (NYPD10), Office of the National Anti-Corruption Commission
- Director Certification Program (DCP), Class 211/2015, Thai Institute of Directors Association (IOD)
- Leadership Development Program, MDP III Business Management, MDP III People Management, Advanced Management Program (AMP) 3 - Business and People Management, PTT Leadership and Learning Institute
- Leadership Development Program II (LDP II), China

Work experience within the past 5 years

Apr. 2019 - Nov. 2021	Director, Energy Complex Company Limited
Oct. 2015 - Sep. 2021	Executive Vice President, Engineering and Project Management, PTT Public company Limited
Aug. 2014 - Sep. 2015	Vice President, Project Engineering Department, PTT Public company Limited

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

Oct. 2021 - Present	Director/Member of the Nomination and Remuneration Committee, IRPC Public Company Limited
Oct. 2021 - Present	Senior Executive Vice President, Engineering and Infrastructure, PTT Public company Limited

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

Sep. 2022 - Present	Chairman, Global Multimodal Logistics Company Limited
Nov. 2021 - Present	Chairman, Energy Complex Company Limited

Mr. Petai Mudtham

Age: 56 Years

Appointed Positions:

Director/Member of the Nomination and Remuneration Committee

[Date of being a Director](#)

19 January 2022

[Date of being the Chairman of The Nomination and Remuneration Committee](#)

19 January 2022

[Years of being a Director](#)

11 Months 12 Days

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": - Share Possession: - %

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- Bachelor of Economics, Ramkhamhaeng University
- Master of Science Program in Applied Statistics, National Institute of Development Administration
- Master of Science in Economics, Murray State University, USA
- Inspector General Program 2021, Government Inspection Development Institute, Office of the Permanent Secretary, Prime Minister Office
- Diploma, National Defence College, The National Defence Course Class 62, Thailand National Defence College
- The Executive Program in Energy Literacy for a Sustainable Future, TEA 12, Thailand Energy Academy
- Budgeting for Executives Program, BEP 5, Budget Bureau Personnel Development Institution, Budget Bureau
- Director Certificate Program (DCP), Class 329/2022, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

Dec. 2020 - Jan. 2022	Acting Manager of ENCON Fund Office
Oct. 2017 - Dec. 2020	Deputy Director General, Energy Policy and Planning Office

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

Jan. 2022 - Present	Director/Member of the Nomination and Remuneration Committee, IRPC Public Company Limited
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[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

Dec. 2020 - Present	Inspector General, Ministry of Energy
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Mr. Yordchatr Tasarika

Age: 43 Years

Appointed Positions:

Independent Director/Member of the Nomination and Remuneration Committee

[Date of being an Independent Director](#)

5 April 2022

[Date of being the Member of the Nomination and Remuneration Committee](#)

5 April 2022

[Years of being an Independent Director](#)

7 Months 27 Days

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": - Share Possession: - %

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- Bachelor of Laws, Thammasat University
- Bachelor of Laws, University of Bristol, England
- Master of Laws, University of Bristol, England
- Master of Laws (Harlan Fiske Stone Scholar), Columbia University School of Law, USA
- State Sector Public Lawyer Training Certificate, Office of the Council of State
- Krisdika Lawyer Training Certificate, Office of the Council of State
- New Wave Leaders, Class 9, Office of the Civil Service Commission
- Director Accreditation Program (DAP), Class 197/2022, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

2020 - 2022	Member and Secretary of the Urgent Law Reform Committee
2020 - 2022	Acting Director of Division 2, Strategic Transformation Office
2019 - 2020	Member of the Ad Hoc Committees of the House of Representatives and Senate to Deliberate the Bill on Organisation to Assign Radio Frequencies and to Regulate Broadcasting and Telecommunication Services (No. ..) B.E. (Selection of NBTC Commissioners)
2019	Member of the Ad Hoc Committee of the National Legislative Assembly to Deliberate the Bill on Electronic Transactions (No. ..) B.E. (Digital Identification)
2019	Member of the Ad Hoc Committee of the National Legislative Assembly to Deliberate the Bill on Protection of the Public in Contracts for Sale with Right of Redemption of Land for Agricultural or Residential Purposes B.E.
2019	Member of the Ad Hoc Committee of the National Legislative Assembly to Deliberate the Bill on Leasehold Rights B.E.

2018 - 2020	Member of the Legal Subcommittee, Tobacco Authority of Thailand
2018	Member of the Ad Hoc Committee of the National Legislative Assembly to Deliberate the Bill on Tobacco Authority of Thailand B.E.
2017 - 2020	Member of the Legal Committee, Thai Airways International Public Company Limited
2016 - 2022	Director of Special Affairs, Thai Law Division, Office of the Council of State
2016 - 2020	Secretary of various committees of the Council of State
2013 - 2017	Member and Secretary of the Subcommittee on Revision of Civil Procedure Code, Office of the Council of State

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

Apr. 2022 - Present Independent Director/Member of the Nomination and Remuneration Committee, IRPC Public Company Limited

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

Aug. 2022 - Present Director of Legal Affairs Office of the Permanent Secretary, Ministry of Justice

2020 - Present Members of the Subcommittee on Legal Reform for Digital Economy and Society and Subcommittee on Revision of Outdated Laws, Urgent Law Reform Committee

2014 - Present Adjunct Lecturer, Faculty of Economics, Kasetsart University

Mr. Jumpol Sumpaopol

Age: 69 years

Appointed Positions:

Independent Director/Member of the Audit Committee

[Date of being an Independent Director](#)

16 October 2019

[Date of being the Member of the Audit Committee](#)

16 October 2019

[Years of being an Independent Director](#)

3 Years 2 Months

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": - Share Possession: - %

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- Bachelor of Sciences, Industrial Education and Technology, Civil Engineering, King Mongkut's University of Technology Thonburi
- Bachelor of Engineering, Civil Engineering, King Mongkut's University of Technology Thonburi
- Certificate of Public and Private Management Program, Notional Institute of Development Administration
- Diploma of Metropolitan Leader, Bangkok Metropolitan and King Prajadhipok's Institute
- Certificate of New Government Budget Management, University of California Los Angeles (UCLA), USA
- Certificate of Infrastructure and System Development Traffic and Transportation
- Certificate of Corporate Governance for Director and Senior Executive of State Enterprises and Public Organization (Class 11), King Prajadhipok's Institute
- Certificate of Senior Executive Management of Metropolitan Development "Mahanakhon" (Class 1), Bangkok Metropolitan
- Certificate of Systematic Problem Solving and Decision Making: SPSDM, Office of the Public Sector Development Commission (OPDC)
- The Rule of Law and Democracy (Class 3), College Constitution Court
- Business Revolution and Innovation Network "BRAINS" (Class 2), The Federation of Thai industries (F.T.I.)
- Certificate Health Ambassador (Class 1), Chulabhorn Royal Academy
- The Role of the Board in IT Governance, Year 2020, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 136/2010, Thai Institute of Directors Association (IOD)

Work Experience within the past 5 years

Apr. 2013 - 2016	Deputy Governor of Bangkok, Bangkok Metropolitan Administration
2011 - 2013	Board of Directors, Metropolitan Electricity Authority (MEA)

2011 - 2013	Deputy Permanent Secretary for Bangkok, Bangkok Metropolitan Administration
Oct. 2009 - Sep. 2011	Director General Public works Department, Bangkok Metropolitan Administration

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

Oct. 2019 - Present Independent Director/Member of the Audit Committee, IRPC Public Company Limited

Feb. 2017 - Present Independent Director/Chairman/Chairman of Nomination and Remuneration committee, Stonehenge Inter Public Company Limited

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

2007 - Present University Promotion Committee Board, King Mongkut's University of Technology Thonburi

Miss Siriwan Chierapong

Age: 68 years

Appointed Positions:

Independent Director/Member of the Audit Committee

[Date of being an Independent Director](#)

3 April 2019

[Date of being the Member of the Audit Committee](#)

4 April 2019

[Years of being an Independent Director](#)

3 Years 8 Months

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": - Share Possession: - %

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- Bachelor of Accountancy, Chulalongkorn University
- Master of Business Administration (M.B.A.), Thammasat University
- Senior Executive Program (SEP), Class 16, Sasin Graduate Institute of Business Administration of Chulalongkorn University
- NIDA-Wharton Executive Leaders Program, The Wharton School University of Pennsylvania
- PTT Executive Leadership Program, General Electric, New York, USA
- Advanced Certificate Course in Public Economics Management for Executives, Class 7/2008, King Prajadhipok's Institute
- The Role of the Board in IT Governance, Year 2020, Thai Institute of Directors Association (IOD)
- Director Certificate Program (DCP), Class 102/2008, Thai Institute of Directors Association (IOD)

Work Experience within the past 5 years

2014 - 2018	Advisor, PTT Polymer Marketing Company Limited
2013 - 2014	President, PTT Polymer Marketing Company Limited
2012 - 2013	Executive Vice President, Strategy and Portfolio Management, Corporate Strategy and Organization Development, PTT Public Company Limited
2009 - 2012	Executive Vice President, Business Development and Project Management, Petrochemicals and Refining Business Unit, PTT Public Company Limited
2005 - 2009	Executive Vice President, Subsidiary Planning and Management, Petrochemicals and Refining Business Unit, PTT Public Company Limited

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

Apr. 2019 - Present Independent Director/Member of the Audit Committee,
IRPC Public Company Limited

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

None

Asst. Prof. Dr. Chaiyaporn Puprasert

Age: 54 Years

Appointed Positions:

Independent Director/Member of the Corporate Governance Committee

[Date of being an Independent Director](#)

31 March 2021

[Date of being the Member of the Corporate Governance Committee](#)

1 April 2021

[Years of being an Independent Director](#)

1 Year 9 Months

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": - Share Possession: - %

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- Bachelor of Engineering in Sanitary Engineering, Chulalongkorn University
- Master of Engineering (Environmental Engineering), Chulalongkorn University
- Ph.D in Environmental Engineering, Institute National de Science Applique'e de Toulouse (INSA-Toulouse), France
- Certification in Top Executives in the Poom Palung Pandin Program, Class 5, Chulalongkorn University
- Director Accreditation Program (DAP), Class 102/2013, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

May 2016 - Apr. 2018	Assistant to the president for Student and Alumni Affairs, Chulalongkorn University
Mar. 2013 - Feb. 2016	Independent Director/Member of the Audit Committee, Daii Group Public Company Limited
Apr. 2010 - May 2016	Head of Environmental Engineering Department, Faculty of Engineering, Chulalongkorn University

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

Apr. 2021 - Present Member of the Corporate Governance Committee, IRPC Public Company Limited
Mar. 2021 - Present Independent Director,
IRPC Public Company Limited

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

Apr. 2021 - Present Director, Chulalongkorn University Alumni Association
Oct. 2019 - Present Expert member in Water Pollution Control Sub-Committee, Department of Pollution Control, Ministry of Natural Resources and Environment
May 2018 - Present Vice President for Student Affairs,
Chulalongkorn University
Dec. 1995 - Present Assistant Professor, Department of Environmental Engineering, Faculty of Engineering, Chulalongkorn University

General Aittipol Suwannarat

Age: 60 Years

Appointed Positions:

Independent Director/Member of the Corporate Governance Committee

[Date of being an Independent Director](#)

5 April 2022

[Date of being the Member of the Corporate Governance Committee](#)

5 April 2022

[Years of being an Independent Director](#)

7 Months 27 Days

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": - Share Possession: - %

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- Bachelor of Science Program, Chulachomkiao Royal Military Academy, Class 22
- Master of Political Science, Burapha University
- National Defence College (NDC), Class 60/2017

Work experience within the past 5 years

Oct. 2020 - Sep. 2021	Army Advisor
Apr. 2019 - Sep. 2020	Deputy Commanding General, Territorial Defense Command
Oct. 2018 - Mar. 2018	1 st Corps Deputy Commander
Oct. 2016 - Sep. 2018	Commanding General, The 13 th Military Circle

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

Apr. 2022 - Present	Independent Director/Member of the Corporate Governance Committee, IRPC Public Company Limited
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[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

Oct. 2021 - Present	Army Senior Advisor, Office of the Commander
Dec. 2021 - Present	Director, KTB General Services and Security Company Limited

Miss Peangpanor Boonklum

Age: 56 Years

Appointed Positions:

Director/Member of the Risk Management Committee

[Date of being a director](#)

20 January 2021

[Date of being the Member of the Risk Management Committee](#)

1 April 2021

[Years of being a director](#)

1 Year 11 Months

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": - Share Possession: - %

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- Bachelor of Laws (Second Class Honor), Chulalongkorn University
- Master of Laws (Business Law), Chulalongkorn University
- Master of Laws (LL.M.), Columbia University School of Law, New York, USA
- The Executive Program in Energy Literacy for a Sustainable Future, Class 15, Thailand Energy Academy
- Leadership Development Program (LDP 3) Class 4/2019, PTT Leadership and Learning Institute
- TIJ Executive Program the Rule of Law & Development, (TIJ RoLd), class 3, Thailand Institute of Justice (TIJ)
- TIJ Workshop for Emerging Leaders on the Rule of Law and Policy, class 3, Thailand Institute of Justice (TIJ)
- Certificate in Anti-Corruption Strategic Management for Senior Executives, Class 9/2018, Office of the National Anti-Corruption Commission
- TLCA Executive Development Program Class 1/2008, Thai Listed Companies Association (TLCA)
- Director Certification Program (DCP), Class 7/2001, Thai Institute of Directors Association (IOD)
- Anti-Corruption: The Practical Guide (ACPG), Class 38/2017, Thai Institute of Directors Association (IOD)
- Ethical Leadership Program (ELP), Class 15/2019, Thai Institute of Directors Association (IOD)
- Risk Management Program for Corporation Leaders (RCL), Class 18/2019, Thai Institute of Directors Association (IOD)
- Board Nomination and Compensation Program (BNCP), 7/2019, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

Jan. 2021 - Mar. 2021 Member of The Corporate Governance Committee, IRPC Public Company Limited

Dec. 2019 - Nov. 2021 Chairman, Energy Complex Company Limited

Mar. 2018 - Dec. 2020 Director, PTT Oil and Retail Business Public Company Limited

Apr. 2017 - Dec. 2019 Director, Global Power Synergy Public Company Limited

Oct. 2017 - Sep. 2018 Director, East Mediterranean Gas Company S.A.E.

Feb. 2017 - Jan. 2018 Member - Legal Expert, Finances and Assets Policy Committee, Srinakharinwirot University

2013 - Mar. 2018 Advisor/Lecturer, Investment Banking Club, Association of Thai Securities Companies

Feb. 2017 - Aug. 2017 Independent Director/Member of the Audit Committee Bangkok Commercial Asset Management Public Co., Ltd.

Mar. 2016 - Jun. 2017 Senior Counsel, Weerawong, Chinnavat & Patners Company Limited (Former Company Name: Weerawong, Chinnavat & Peangpanor Company Limited" Changed to the current name on April 3, 2017)

2009 - Feb. 2016 Partner and Associate, Weerawong, Chinnavat & Peangpanor Company Limited

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

Apr. 2021 - Present Member of the Risk Management Committee, IRPC Public Company Limited

Jan. 2021 - Present Director, IRPC Public Company Limited

Oct. 2017 - Present Senior Executive Vice President, Office of General Counsel, IRPC Public Company Limited

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

Nov. 2021 - Present Director, CU Engineering Enterprise Company Limited

Nov. 2021 - Present Director, Primate Enterprise Company Limited

Oct. 2021 - Present Chairman, Global Renewable Power Company Limited

Oct. 2021 - Present Chairman, PTT Saving and Credit Cooperative Limited

Dec. 2019 - Present Director, Energy Complex Company Limited

Dr. Ekniti Nitithanprapas

Age: 51 Years

Appointed Positions:

Director/Member of the Risk Management Committee

[Date of being a Director](#)

17 November 2015

[Date of being the Member of the Risk Management Committee](#)

16 March 2016

[Years of being a Director](#)

7 Years 1 Month

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": - Share Possession: - %

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- B.A. in Economics, (Honor), Thammasat University
- M.S. in Economics/Policy Economics, University of Illinois at Urbana-Champaign, USA
- Ph.D. in Economics/Macroeconomics and International Finance, Claremont Graduate University, USA
- Advanced Certificate Course in Public Administration and Law for Executives, Class 9/2011, King Prajadhipok's Institute
- Oxford Programme On Negotiation in Bangkok 2019, Leadership Focus Institute
- The Role of the Board in IT Governance, Year 2020, Thai Institute of Directors Association (IOD)
- Director Leadership Certification Program (DLCP), Class 2/2021, Thai Institute of Directors Association (IOD)
- Risk Management Program for Corporate Leaders (RCL) Class 25/2021, Thai Institute of Directors Association (IOD)
- Role of the Chairman Program (RCP), Class 45/2019, Thai Institute of Directors Association (IOD)
- Board Matters and Trend (BMT), Class 4/2017, Thai Institute of Directors Association (IOD)
- Role of the Nomination and Governance Committee (RNG), Class 8/2016, Thai Institute of Directors Association (IOD)
- Financial Statements for Directors (FSD), Class 29/2015, Thai Institute of Directors Association (IOD)
- Corporate Governance for Capital Market Intermediaries (CGI), Class 4/2015, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 93/2007, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

Feb. 2020 - Nov. 2021	Chairman, Thanachart Bank Public Company Limited
May 2018 - May 2022	Director-General of the Revenue Department
Jun. 2018 - Jan. 2020	Chairman/Director, Krungthai Bank Public Company Limited
Jul. 2018 - Oct. 2019	Chairman, Thai Airways International Public Company Limited
Jun. 2018 - Oct. 2019	Director, Thai Airways International Public Company Limited

Nov. 2015 - May 2018	Director, Siam Commercial Bank Public Company Limited
Nov. 2015 - May 2018	Member of Nomination, Compensation and Corporate Governance Committee, Siam Commercial Bank Public Company Limited
Nov. 2015 - May 2018	Chairman, National Credit Bureau Company Limited
Oct. 2015 - May 2018	Director-General of the State Enterprise Policy Office, Ministry of Finance

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

Jan. 2023 - Present	Director, Aeronautical Radio of Thailand Ltd.
Feb. 2020 - Present	Chairman, TMBThanachart Bank Public Company Limited
Mar. 2016 - Present	Member of the Risk Management Committee, IRPC Public Company Limited
Nov. 2015 - Present	Director, IRPC Public Company Limited

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

May 2022 - Present	Director-General of the Excise Department
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Mr. Prasong Intaranongpai

Age: 54 Years

Appointed Positions:

Director/Member of the Risk Management Committee

[Date of being a Director](#)

1 December 2022

[Date of being the Member of the Risk Management Committee](#)

1 December 2022

[Years of being a Director](#)

1 Month

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": - Share Possession: - %

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- Bachelor of Engineering (Industrial Engineering), Chiang Mai University
- Bachelor of Laws, Sukhothai Thammathirat Open University
- Master of Business Administration (General Management), Kasetsart University
- Advanced Strategic Management (ASM) - Advanced SMCP, Class 2018/1, PTT Leadership and Learning Institute (PLLI)
- Advanced Management Program (AMP) 3 (Year 2018), PTT Leadership and Learning Institute (PLLI)
- Director Certification Program (DCP), Class 287/2019, Thai Institute of Directors Association (IOD)
- Financial Statement for Directors (FSD), Class 38/2019, Thai Institute of Directors Association (IOD)
- Leadership Development Program 3 (LDP 3), Class 4 (Year 2019), PTT Leadership and Learning Institute (PLLI)
- Director Development Program (DDP) (Year 2021), PTT Leadership and Learning Institute (PLLI)

Work experience within the past 5 years

Apr. 2022 - Nov. 2022	Chairman, Sport Services Alliance Company Limited
Jan. 2022 - Dec. 2022	Director, NUOVO PLUS Company Limited
Oct. 2021 - Nov. 2022	Director, Alpha Com Company Limited
Oct. 2021 - Nov. 2022	Director, Global Renewable Power Company Limited
Sep. 2021 - Nov. 2022	Chairman, PTT RAISE Company Limited
Jul. 2021 - Nov. 2022	Chairman, EV ME PLUS Company Limited
2021 - Sep. 2022	Executive Vice President, New Venture Development, PTT Public Company Limited (and assigned to work for Arun Plus Company Limited)

May 2020 - Oct. 2021	Chairman, PTT Global Management Company Limited
Oct. 2019 - Dec. 2022	Director, Sport Services Alliance Company Limited
2017 - 2021	Executive Vice President, Strategy & Portfolio Management, PTT Public Company Limited

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

Dec. 2022 - Present	Director/Member of the Risk Management Committee, IRPC Public Company Limited
Oct. 2022 - Present	Senior Executive Vice President, Downstream Business Group Alignment, PTT Public Company Limited (and assigned to work for Arun Plus Company Limited)

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

Dec. 2022 - Present	Director, GPC International Terminal Company Limited
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Mr. Kris Imsang

Age: 57 Years

Appointed Positions:

Director/Member of the Risk Management Committee/
President and Chief Executive Officer/Secretary of
the Board of Directors

[Date of being a Director](#)

1 October 2022

[Date of being the Member of the Risk Management Committee](#)

19 October 2022

[Years of being a Director](#)

3 Months

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": - Share Possession: - %

[Family relationship within the Company, major shareholder
or subsidiaries](#)

None

Education/Training

- Bachelor of Engineering (Civil Engineering), Chulalongkorn University
- Certification in Top Executives in the Poom Palung Pandin Program, Class 3, Chulalongkorn University
- Leadership Development Program III (LDP III), Class 2, PTT Leadership and Learning Institute (PLLI)
- Top Executive Program, Class 23, Capital Market Academy (CMA)
- Top Executive in Energy Program, Class 9, Thailand Energy Academy (TEA)
- Diploma, National Defence College, The National Defence Course, Class 62, Thailand National Defence College
- Certificate Course in Good Governance for Medical Executives, Class 9, King Prajadhipok's Institute and the Medical Council of Thailand
- The Role of the Board in IT Governance, Year 2020 Thai Institute of Directors Association (IOD)
- Director Refreshment Training Program (RFP), Class 1/2021, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 139/2010, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

Oct. 2022 - Dec. 2022	Director, IRPC A&L Company Limited
Oct. 2022 - Dec. 2022	Chairman, PTT Energy Solutions Company Limited
Apr. 2022 - Sep. 2022	Chairman of the Nomination and Remuneration Committee, IRPC Public Company Limited
Jan. 2021 - Apr. 2022	Chairman, IRPC Public Company Limited
Jan. 2021 - Sep. 2022	Director/Board of the Nomination and Remuneration Committee, PTT Oil and Retail Business Public Company Limited
Sep. 2020 - Sep. 2022	Chairman, PTT Tank Terminal Company Limited
Jun. 2020 - Sep. 2022	Chief Operating Officer, Downstream Petroleum Business Group, PTT Public Company Limited
Aug. 2020 - Apr. 2022	Vice Chairman - FTI Academy Committee, The Federation of Thai Industries

Mar. 2019 - Jan. 2020	Member of the Nomination and Remuneration Committee, IRPC Public Company Limited
Nov. 2019 - May 2020	Senior Executive Vice President, Downstream Business Group Alignment, PTT Public Company Limited
Oct. 2018 - Oct. 2019	Senior Executive Vice President, Corporate Governance and Regulatory Affairs, PTT Public Company Limited
Jan. 2018 - Sep. 2018	Senior Executive Vice President, Organization Management and Sustainability, PTT Public Company Limited
Dec. 2017 - Sep. 2022	Director, IRPC Public Company Limited
Dec. 2017 - Feb. 2019	Member of the Corporate Governance Committee, IRPC Public Company Limited
Sep. 2017 - Oct. 2019	Chairman, Sarn Palung Social Enterprise Company Limited
Mar. 2016 - Aug. 2019	Committee, Kamnoetvidya Science Academy (KVIS)
Feb. 2016 - Dec. 2017	Senior Executive Vice President, Human Resources & Organization Excellence, PTT Public Company Limited
Feb. 2015 - Nov. 2019	Chairman, Energy Complex Company Limited
Aug. 2015 - Jan. 2016	Executive Vice President, Retail Marketing, PTT Public Company Limited

Current Position

Board member/Management in Listed Company - The Stock Exchange of Thailand

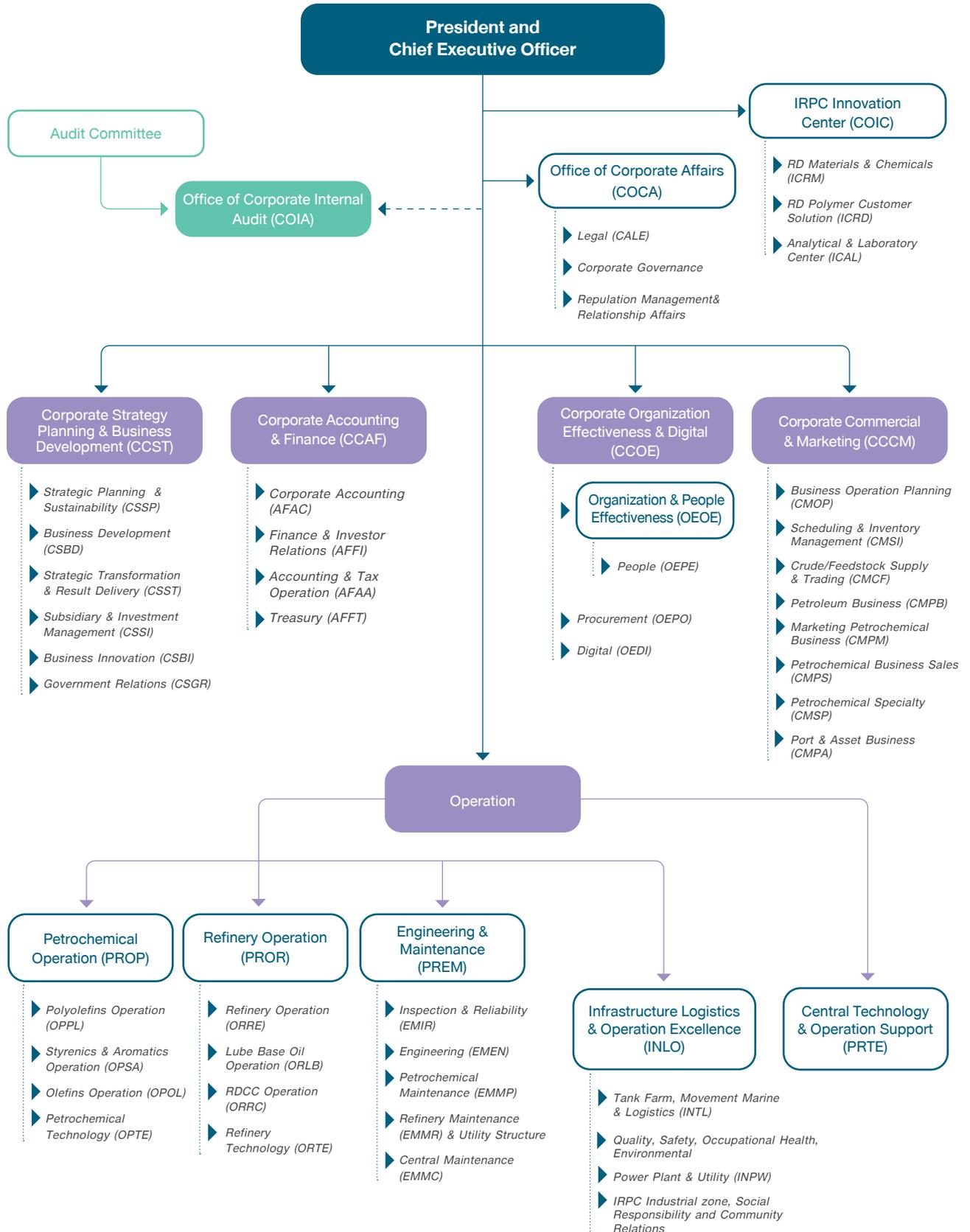
Oct. 2022 - Present	Director/Member of the Risk Management Committee/President and Chief Executive Officer/Secretary of the Board of Directors, IRPC Public Company Limited
Oct. 2022 - Present	Chief Operating Officer reporting to Chief Operating Officer, Downstream Petroleum Business Group, PTT, working on a secondment as Chief Executive Officer and President, IRPC Public Company Limited

Board member/Management in Non-Listed Company - The Stock Exchange of Thailand

Jan. 2023 - Present	Member of the Council of Honorable Institutions, Vidyasirimedhi Institute of Science and Technology (VISTEC)
Oct. 2022 - Present	Director, IRPC Polyol Company Limited
Oct. 2022 - Present	Director, UBE Chemicals (Asia) Public Company Limited
Oct. 2022 - Present	Council of Trustees, Petroleum Institute of Thailand
Oct. 2022 - Present	Council Member, Thailand Business Council for Sustainable Development
Apr. 2022 - Present	Secretary, The Federation of Thai Industries
Feb. 2021 - Present	Board of Directors, Sirindhorn International Institute of Technology, Thammasat University (SIIT)
Jun. 2020 - Present	Executive Director, Thailand Energy Academy
Aug. 2019 - Present	Qualified Member of the Social Enterprise Promotion Committee

Organizational Structure

As of Jan. 1, 2023



Management Team

Mr. Somkiat Lertritpuwadol

Senior Executive Vice President, Corporate Strategy Planning and Business Development

Mr. Woravuth Sivapetranart

Senior Executive Vice President, Operation

Mr. Kris Imsang

President and Chief Executive Officer

Miss Wanida Utaisomnapa

Senior Executive Vice President, Corporate Commercial and Marketing

Mr. Poramet Junwichit

Senior Executive Vice President, Corporate Organization Effectiveness and Digital

Mr. Phichin Aphiwantanaporn

Senior Executive Vice President, Corporate Accounting and Finance



Management Team, IRPC Public Company Limited

Mr. Kris Imsang

Age: 57 Years

Appointed Positions:

President and Chief Executive Officer

[Date of being a President and Chief Executive Officer](#)

1 October 2022

[Years of being a President and Chief Executive Officer](#)

3 Months

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": - Share Possession: - %

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- Bachelor of Engineering (Civil Engineering), Chulalongkorn University
- Certification in Top Executives in the Poom Palung Pandin Program, Class 3, Chulalongkorn University
- Leadership Development Program III (LDP III), Class 2, PTT Leadership and Learning Institute (PLLI)
- Top Executive Program, Class 23, Capital Market Academy (CMA)
- Top Executive in Energy Program, Class 9, Thailand Energy Academy (TEA)
- Diploma, National Defence College, The National Defence Course, Class 62, Thailand National Defence College
- Certificate Course in Good Governance for Medical Executives, Class 9, King Prajadhipok's Institute and the Medical Council of Thailand
- The Role of the Board in IT Governance, Year 2020 Thai Institute of Directors Association (IOD)
- Director Refreshment Training Program (RFP), Class 1/2021, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 139/2010, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

Oct. 2022 - Dec. 2022	Director, IRPC A&L Company Limited
Oct. 2022 - Dec. 2022	Chairman, PTT Energy Solutions Company Limited
Apr. 2022 - Sep. 2022	Chairman of the Nomination and Remuneration Committee, IRPC Public Company Limited
Jan. 2021 - Apr. 2022	Chairman, IRPC Public Company Limited
Jan. 2021 - Sep. 2022	Director/Board of the Nomination and Remuneration Committee, PTT Oil and Retail Business Public Company Limited
Sep. 2020 - Sep. 2022	Chairman, PTT Tank Terminal Company Limited
Jun. 2020 - Sep. 2022	Chief Operating Officer, Downstream Petroleum Business Group, PTT Public Company Limited
Aug. 2020 - Apr. 2022	Vice Chairman - FTI Academy Committee, The Federation of Thai Industries
Mar. 2019 - Jan. 2020	Member of the Nomination and Remuneration Committee, IRPC Public Company Limited

Nov. 2019 - May 2020	Senior Executive Vice President, Downstream Business Group Alignment, PTT Public Company Limited
Oct. 2018 - Oct. 2019	Senior Executive Vice President, Corporate Governance and Regulatory Affairs, PTT Public Company Limited
Jan. 2018 - Sep. 2018	Senior Executive Vice President, Organization Management and Sustainability, PTT Public Company Limited
Dec. 2017 - Sep. 2022	Director, IRPC Public Company Limited
Dec. 2017 - Feb. 2019	Member of the Corporate Governance Committee, IRPC Public Company Limited
Sep. 2017 - Oct. 2019	Chairman, Sarn Palung Social Enterprise Company Limited
Mar. 2016 - Aug. 2019	Committee, Kamnoetvidya Science Academy (KVIS)
Feb. 2016 - Dec. 2017	Senior Executive Vice President, Human Resources & Organization Excellence, PTT Public Company Limited
Feb. 2015 - Nov. 2019	Chairman, Energy Complex Company Limited
Aug. 2015 - Jan. 2016	Executive Vice President, Retail Marketing, PTT Public Company Limited

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

Oct. 2022 - Present	Director/Member of the Risk Management Committee/President and Chief Executive Officer/Secretary of the Board of Directors, IRPC Public Company Limited
Oct. 2022 - Present	Chief Operating Officer reporting to Chief Operating Officer, Downstream Petroleum Business Group, PTT, working on a secondment as Chief Executive Officer and President, IRPC Public Company Limited

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

Jan. 2023 - Present	Member of the Council of Honorable Institutions, Vidyasirimedhi Institute of Science and Technology (VISTEC)
Oct. 2022 - Present	Director, IRPC Polyol Company Limited
Oct. 2022 - Present	Director, UBE Chemicals (Asia) Public Company Limited
Oct. 2022 - Present	Council of Trustees, Petroleum Institute of Thailand
Oct. 2022 - Present	Council Member, Thailand Business Council for Sustainable Development
Apr. 2022 - Present	Secretary, The Federation of Thai Industries
Feb. 2021 - Present	Board of Directors, Sirindhorn International Institute of Technology, Thammasat University (SIIT)
Jun. 2020 - Present	Executive Director, Thailand Energy Academy
Aug. 2019 - Present	Qualified Member of the Social Enterprise Promotion Committee

Mr. Woravuth Sivapetranart

Age: 59 Years

Appointed Positions:

Senior Executive Vice President, Operation

[Date of being a Senior Executive Vice President, Operation](#)

1 January 2023

[Possession of IRPC shares \(%\)](#)

No. of share "IRPC": 279,351 Share Possession: 0.00137%

[Family relationship within the Company, major shareholder or subsidiaries](#)

None

Education/Training

- Bachelor of Science (Chemistry), Prince of Songkla University
- Master of Business Administration (Business Administration), Chulalongkorn University
- MINI MBA Thammasat University
- GE Global Customer Summit, ASEAN Executive Program, Crotonville, USA
- Leadership Development Program III, PTT Leadership and learning Institute
- Senior Executive Program (SEP), Class 32, Sasin Graduate Institute of Business Administration of Chulalongkorn University
- Advanced Management Program 3 (AMP3), PTT Leadership and learning Institute
- Executive Energy Management Program (EEM), Season 3, Ministry of Energy
- The Executive Program in Energy Literacy for a Sustainable Future (TEA), Class 16, Thailand Energy Academy
- The Role of the Board in IT Governance, Year 2020, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 281/2019, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

May. 2021 - Dec. 2022	Acting Senior Executive Vice President, Innovation and Operation Excellence, IRPC Public Company Limited
Mar. 2019 - Dec. 2022	Senior Executive Vice President, Petrochemical and Refinery Operation, IRPC Public Company Limited
Jan. 2019 - Feb. 2019	Senior Executive Vice President, Petrochemical & Refinery Business Unit, IRPC Public Company Limited
Jan. 2017 - Dec. 2018	Executive Vice President, Refinery and Petrochemical Operation, IRPC Public Company Limited
2014 - 2016	Executive Vice President, Technology & Operational Excellence, IRPC Public Company Limited

Current Position

Board member/Management in Listed Company - The Stock Exchange of Thailand

Jan. 2023 - Present Senior Executive Vice President, Operation, IRPC Public Company Limited

Board member/Management in Non-Listed Company - The Stock Exchange of Thailand

May. 2021 - Present Director, IRPC OIL Company Limited

Mar. 2021 - Present Director, Rayong Acetylene Company Limited

Mar. 2019 - Present Director, WHA Industrial Estate Rayong Company Limited

Mar. 2019 - Present Director, IRPC Clean Power Company Limited

Mar. 2017 - Present Director, IRPC Polyol Company Limited

Apr. 2017 - Present Director, IRPC A&L Company Limited

Miss Wanida Utaisomnapa

Age: 56 Years

Appointed Positions:

Senior Executive Vice President, Corporate Commercial and Marketing

Date of being a Senior Executive Vice President, Corporate Commercial and Marketing

1 January 2019

Years of being a Senior Executive Vice President, Corporate Commercial and Marketing

4 Years

Possession of IRPC shares (%)

No. of share "IRPC": 210,440 Share Possession: 0.00103%

Family relationship within the Company, major shareholder or subsidiaries

None

Education/Training

- Bachelor of Business Administration (Finance with second class honors), Bangkok University
- Master of Business Administration (Finance and Marketing), National University, San Diego, USA
- PLLI Leadership Development Program, IMD, Singapore
- Advance Management Program, DDI
- Leadership/The 7 HABITS of Highly Effective People, PacRim/FranklinCovey
- PTT-HBS Leadership Development Program Class 1, Harvard Business School, India&China
- Refinery Economics, Solomon Associates, Singapore
- Advance Price Risk Management, Invincible Energy, Singapore
- The Board's Role in Strategic Formulation, Governance Matters Australia
- The Role of the Board in IT Governance, Year 2020, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 315/2022, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

Apr. 2019 - Dec. 2021	Director, IRPC Polyol Company Limited
Nov. 2018 - Mar. 2019	Director, IRPC Clean Power Company Limited
Oct. 2018 - Dec. 2018	Executive Vice President, Strategic Transformation and Result Delivery Office, IRPC Public Company Limited
Feb. 2015-Dec. 2018	Secretary of the Risk Management Committee, IRPC Public Company Limited
Jan. 2015- Dec. 2018	Executive Vice President, Corporate Business Planning, IRPC Public Company Limited

Current Position

Board member/Management in Listed Company - The Stock Exchange of Thailand

Jan. 2019 - Present Senior Executive Vice President, Corporate Commercial and Marketing, IRPC Public Company Limited

Board member/Management in Non-Listed Company - The Stock Exchange of Thailand

Feb. 2023 - Present Chairman, Ipolymer Company Limited
 Jan. 2023 - Present Director, WHA Industrial Estate Rayong Company Limited
 Jan. 2023 - Present Chairman, IRPC A&L Company Limited
 Dec. 2022 - Present Director, Ipolymer Company Limited
 Jul. 2020 - Present Director,
Mytex Polymers (Thailand) Company
 Jul. 2019 - Present Director, Guangzhou Saiju Performance Polymer Company Limited
 Mar. 2019 - Present Director, IRPC A&L Company Limited
 Jan. 2019 - Present Director, UBE Chemicals (Asia) Public Company Limited
 Nov. 2018 - Present Director, IRPC OIL Company Limited

Mr. Pranarch Kosayanont

Age: 56 Years

Appointed Positions:

Acting Senior Executive Vice President,
Corporate Strategy Planning and Business Development
[Date of being an Acting Senior Executive Vice President, Corporate Strategy Planning and Business Development](#)
1 January 2023
[Possession of IRPC shares \(%\)](#)
No. of share "IRPC": 245,292 Share Possession: 0.00120%
[Family relationship within the Company, major shareholder or subsidiaries](#)
None

Education/Training

- Bachelor of Science (Chemistry),
King Mongkut's University of Technology Thonburi

Work experience within the past 5 years

Jan. 2022 - Dec. 2022 Ultra Clean Fuel (UCF) Project Director,
IRPC Public Company Limited
Mar. 2020 - Dec. 2021 Executive Vice President,
Refinery and Petrochemical Operation,
IRPC Public Company Limited
Aug. 2019 - Feb. 2020 Executive Vice President, Production &
Operation, IRPC Public Company
Jan. 2017 - Jul. 2019 Acting Executive Vice President,
Production & Operation,
IRPC Public Company Limited

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

Jan. 2023 - Present Acting Senior Executive Vice President,
Corporate Strategy Planning and
Business Development,
IRPC Public Company Limited

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

Jan. 2023 - Present Director,
IRPC Clean Power Company Limited
Jan. 2023 - Present Chariman,
Mytex Polymers (Thailand) Company
Jan. 2023 - Present Director, IRPC A&L Company Limited

Mr. Poramet Junwichit

Age: 58 Years

Appointed Positions:

Senior Executive Vice President, Corporate Organization
Effectiveness and Digital
[Date of being a Senior Executive Vice President, Corporate Organization Effectiveness and Digital](#)
1 January 2022
[Years of being a Senior Executive Vice President, Corporate Organization Effectiveness and Digital](#)
1 Year
[Possession of IRPC shares \(%\)](#)
No. of share "IRPC": - Share Possession: - %
[Family relationship within the Company, major shareholder or subsidiaries](#)
None

Education/Training

- MINI MBA, Thammasat University
- M.Ed. (Public Administration),
National Institute of Development Administration
- B.Eng. (Engineering), Kasetsart University
- Leadership Development Program II
- Inspiration and Capability Drive
- IRPC Culture Transformation Leading
- Advanced Certificate Course in Promotion of Peaceful
Society, Class 12, Academic Year 2021-2022,
King Prajdhipok's Institute
- Director Certification Program (DCP), Class 316/2022,
Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

Jan. 2023 Acting Senior Manager, of Internal Audit
Office, IRPC Public Company Limited
Aug. 2020 - Dec. 2021 Executive Vice President,
Engineering & Maintenance,
IRPC Public Company Limited
Feb. 2020 Acting Executive Vice President,
Engineering & Maintenance,
IRPC Public Company Limited
Jan. 2018 Vice President,
IRPC Public Company Limited
Maintenance Service 2 Department
Oct. 2014 Vice President,
Inspection and Reliability Department,
IRPC Public Company Limited
Jun. 2010 Vice President, Engineering Department,
IRPC Public Company Limited

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

Jan. 2022 - Present Senior Executive Vice President, Corporate
Organization Effectiveness and Digital,
IRPC Public Company Limited

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

Nov. 2022 - Present Chairman,
IRPC Technology Company Limited
Jan. 2022 - Present Director,
IRPC Technology Company Limited

Mr. Phichin Aphiwantanaporn

Age: 57 Years

Appointed Positions:

Senior Executive Vice President, Corporate Accounting & Finance

Date of being a Senior Executive Vice President, Corporate Accounting & Finance

1 October 2022

Years of being a Senior Executive Vice President, Corporate Accounting & Finance

3 Months

Possession of IRPC shares (%)

No. of share "IRPC": - Share Possession: - %

Family relationship within the Company, major shareholder or subsidiaries

None

Education/Training

- Bachelor in Economics, Thammasat University
- Master of Business Administration (MBA.), Indiana University, Indiana, USA
- Capital Market Academy Leader Program (CMA), Class 32/2022, Capital Market Academy
- Advanced Management Program (AMP) 3 - Business & People Management 2022, PTT Leadership and Learning Institute (PLLI) joint with DDI
- Senior Public Finance Executive Program, Class 7/2020, Institute for Personal Development in Finance and Public Sector Accounting, The Comptroller General's Department
- Leadership Development Program III, Class 4/2019, PTT Leadership and Learning Institute (PLLI) joint with IMD
- Management Development Program III, 2016, PTT Leadership and Learning Institute (PLLI)
- Executive Development Program (EDP), 2015, Thai Listed Companies Association (TLCA)
- Leadership Development Program I, Class 1/2013, PTT Leadership and Learning Institute (PLLI) joint with Harvard Business School
- Director Certification Program (DCP), Class 321/2022, Thai Institute of Directors Association (IOD)

Continuing Professional Development in Accounting

2022: Curriculum: Update on financial standards TFRS for NPAEs revised (effective January 1, 2023), Academy: Dharmniti, Number of hours: 6 hours

Work experience within the past 5 years

Jan. 2022 - Sep. 2022 Chairman, PTT Retail Business Management Company Limited

Jan. 2022 - Sep. 2022 Director, Petroasia (Thailand) Company Limited

2018 - Sep. 2022 Senior Executive Vice President, Finance, PTT Oil and Retail Business Public Company Limited

2018 Vice President - Group Financial Planning (acting), PTT Public Company Limited

2013 - 2018 Vice President - Investor Relations Department, PTT Public Company Limited

Current Position

Board member/Management in Listed Company - The Stock Exchange of Thailand

Oct. 2022 - Present Senior Executive Vice President, Corporate Accounting & Finance, IRPC Public Company Limited

Oct. 2018 - Present Executive Vice President, Corporate Finance & Accounting, PTT Public company Limited

Board member/Management in Non-Listed Company - The Stock Exchange of Thailand

Oct. 2022 - Present Director, IRPC A&L Company Limited

Oct. 2022 - Present Director, Innopolymed Company Limited

Oct. 2022 - Present Director, UBE Chemicals (Asia) Public Company Limited

Oct. 2022 - Present Director, WHA Industrial Estate Rayong Company Limited

Oct. 2022 - Present Director, Mytex Polymers (Thailand) Company

Oct. 2022 - Present Director, IRPC Clean Power Company

Oct. 2022 - Present Director, IRPC Polyol Company Limited

Miss Arisara Suthasut

Age: 47 Years

Appointed Positions:

Executive Vice President, Corporate Affairs and Company Secretary

Date of being an Executive Vice President, Corporate Affairs and Company Secretary

1 October 2019

Years of being an Executive Vice President, Corporate Affairs and Company Secretary

3 Years 3 Months

Possession of IRPC shares (%)

No. of share "IRPC": 2,200 Share Possession: 0.00001%

Family relationship within the Company, major shareholder or subsidiaries

None

Education/Training

- Bachelor of Engineering (Chemical Engineering), Kasetsart University
- Master of Science, Petrochemical Technology, The Petroleum and Petrochemical College, Chulalongkorn University
- Leadership Development Program 2, Class 5/2022, PTT Leadership and Learning Institute (PLLI)
- Executive Energy Program (EEP), Class 5/2020, The Institute of Industrial Energy
- The Role of the Board in IT Governance, Year 2020, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 323/2022, Thai Institute of Directors Association (IOD)
- Company Secretary Program (CSP), Class 106/2020, Thai Institute of Directors Association (IOD)

Work Experience within the past 5 years

Jan. 2020 - Dec. 2020	Acting Executive Vice President, Corporate Sustainability Management, IRPC Public Company Limited
2018 - Sep. 2019	Director, Corporate Management Department, PTT Tank Terminal Company Limited
2013 - 2019	Division Manager, Downstream Business, PTT Public company Limited
2013 - 2017	Division Manager, Business Development Department, IRPC Public Company Limited

Current Position

Board member/Management in Listed Company - The Stock Exchange of Thailand

Oct. 2019 - Present	Executive Vice President, Corporate Affairs and Company Secretary, IRPC Public Company Limited
2019 - Present	Department Manager, Chief Operation Office Downstream Petroleum Business, PTT Public Company Limited

Board member/Management in Non-Listed Company - The Stock Exchange of Thailand

Oct. 2019 - Present	Director, IRPC Technology Company Limited
Oct. 2019 - Present	Director, Sarn Palung Social Enterprise Company Limited

Mr. Surachai Toaphicharttrakul

Age 56 Years

Appointed Positions:

Senior Vice President, Corporate Accounting

Possession of IRPC shares (%)

No. of share "IRPC": 14,719 Share Possession: 0.00007%

Family relationship within the Company, major shareholder or subsidiaries

None

Education/Training

- Bachelor of Business Administration, (Accounting), Ramkhamhaeng University
- Master of Business Administration, (Accounting for Planning and Control), Kasetsart University
- Mini MBA - Faculty of Commerce and Accountancy, Thammasat University
- Advanced Management Program (AMP) 2 - People Management
- Lead Management Program - McKinsey Academy
- Digital Leadership Acceleration Program - BCG

Continuing Professional Development in Accounting

2022	Curriculum: Accounting of hedging instruments and examples of understanding Academy: NYC Management Co., Ltd. Number of hours: 7 hours Curriculum: TFRS 9 year 2022 (for non-financial organizations) Principles and issues of interest Academy: NYC Management Co., Ltd. Number of hours: 7 hours
2021	Curriculum: Cost accounting theory. Academy: Department of Business Development, Ministry of Commerce Number of hours: 6 hours Curriculum: Accounting, documentation and financial reporting systems Academy: Dharmniti Seminar and Training Co., Ltd. Number of hours: 6.30 hours Curriculum: Accounting Cryptocurrencies & Update TFRS Academy: Deloitte touche tohmatsu jaiyos audit Co.,Ltd Number of hours: 5.30 hours

Work Experience within the past 5 years

2013 - 2021	Vice President - Accounting, IRPC Public Company Limited.
1997 - 2013	Department Manager - Financial Statement and Accounting Policy, IRPC Public Company Limited

Current Position

Board member/Management in Listed Company - The Stock Exchange of Thailand

2022 - Present	Senior Vice President, Corporate Accounting, IRPC Public Company Limited.
2021 - Present	Senior Vice President, Accounting and TAX Operation, IRPC Public Company Limited

Board member/Management in Non-Listed Company - The Stock Exchange of Thailand

2023 - Present	Director, IRPC OIL Company Limited
2017 - Present	Director, IRPC Technology Company Limited
2017 - Present	Director, Rakpasak Company Limited

Mr. Chawalit Tippawanich

Age: 60 Years

(Resigned 30 September 2022)

Education/Training

- Bachelor of Engineering in Electrical Engineering, King Mongkut's Institute of Technology Ladkrabang
- Master of Engineering in Industrial Engineering Management, Asian Institute of Technology
- Advance Management Program (AMP 187) - Harvard Business School, Executive Education, USA
- GE Energy Customer Executive Leadership Program (GE:PTT Executive Leadership) - GE Global Learning Crotonville Leadership Institute, USA
- Advanced Certificate Course in Politics and Governance in Democratic Systems for Executives (Batch 23)
- Top Executives in the Energy Education Program (Batch 12), Thailand Energy Academy
- The Joint State-Private Sector Course (Batch 5), Police College
- Leadership Development Program III (Batch 2), PTT Leadership and Learning Institute
- Director Certification Program (DCP), Class 152/2011, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

Jan. 2022 - Sep. 2022	Director, IRPC Polyol Company Limited
Oct. 2021 - Sep. 2022	Chairman, PTT Energy Solutions Company Limited
Apr. 2021 - Sep. 2022	Member of the Council of Honorable Institutions, Vidyasirimedhi Institute of Science and Technology (VISTEC)
Mar. 2021 - Sep. 2022	Advisor to the Thai Volunteer Power Club
Mar. 2021 - Sep. 2022	Chairman, IRPC OIL Company Limited
Jan. 2021 - Dec. 2021	Chairman, IRPC Polyol Company Limited
Jan. 2021 - Sep. 2022	Council of Trustees, Petroleum Institute of Thailand
Dec. 2020 - Sep. 2022	Director/Member of the Risk Management Committee/President and Chief Executive Officer/Secretary of the Board of Directors, IRPC Public Company Limited
Dec. 2020 - Sep. 2022	Director, UBE Chemicals (Asia) Public Company Limited
Dec. 2020 - Sep. 2022	Chairman, IRPC A&L Company Limited
Dec. 2020 - Sep. 2022	Chairman, IRPC Technology Company Limited
Dec. 2020 - Sep. 2022	Chairman, iPolymer Company Limited
Dec. 2020 - Sep. 2022	Council Member/Executive Committee, Thailand Business Council for Sustainable (TBCSD)
Dec. 2020 - Sep. 2022	Advisory Committee of the Petroleum and Petrochemical College, Chulalongkorn University
Dec. 2020 - Oct. 2021	Deputy Chairman, PTT Energy Solutions Company Limited

Jul. 2020 - Sep. 2022	Director, The Federation of Thai Industries
Apr. 2019 - Nov. 2020	Director, Glow Energy Public Company Limited
Mar. 2019 - Nov. 2020	Director, Glow Company Limited
Mar. 2019 - Nov. 2020	Director, Glow SPP 2 Company Limited
Mar. 2019 - Nov. 2020	Director, Glow SPP 3 Company Limited
Mar. 2019 - Nov. 2020	Director, Glow IPP 2 Holding Company Limited
Mar. 2019 - Nov. 2020	Director, Glow SPP 11 Company Limited
Mar. 2019 - Nov. 2020	Director, Glow IPP Company Limited
Jan. 2019 - Nov. 2020	Director, Ratchaburi Power Company Limited
Nov. 2018 - Nov. 2020	Director, Xayaburi Power Company Limited
Oct. 2018 - Nov. 2020	Director/Member of the Risk Management Committee/President and Chief Executive Officer/Secretary of the Board of Directors, Global Power Synergy Public Company Limited
2018 - Sep. 2022	Senior Executive Vice President, Downstream Petroleum Business Group, PTT Public Company Limited
2017 - 2018	Executive Vice President, Downstream Business Group Alignment, PTT Public Company Limited secondment in the position of Executive Vice President-Organization Effectiveness of Thaioil Public Company Limited
2015 - 2016	Executive Vice President, Downstream Business Group Alignment, PTT Public Company Limited secondment in the position of President of HMC Polymers Company Limited

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

None

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

None

Mr. Somkiat Lertritpuwadol

Age: 60 Years

(Retired)

Education/Training

- Bachelor of Science (Chemistry), Ramkhamhaeng University
- Master of Business Administration, Asian University
- Mini MBA, Thammasart University
- NIDA Executive Leadership Program - Wharton University of Pennsylvania
- Advanced Certificate Course in Public Economics Management for Executives, Class 11, King Prajadhipok's Institute
- The Executive Program in Energy Literacy for a Sustainable Future (TEA) Class 9, Thailand Energy Academy
- Capital Market Academy Leader Program, Class 285/2019, Capital Market Academy, The Stock Exchange of Thailand
- The Role of the Board in IT Governance, Year 2020, Thai Institute of Directors Association (IOD)
- Risk Management Program for Corporate Leaders (RCL), Class 19/2020, Thai Institute of Directors Association (IOD)
- Financial Statements for Directors (FSD), Class 36/2018, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 224/2016, Thai Institute of Directors Association (IOD)
- Director Accreditation Program (DAP), Class 111/2014, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

Jun. 2021 - Dec.2021	Director, IRPC Technology Company Limited
May 2021 - Dec. 2021	Acting Executive Vice President, Corporate Organization Effectiveness, IRPC Public Company Limited
Jul. 2020 - Dec. 2022	Chairman, Mytex Polymers (Thailand) Company
Mar. 2019 - Dec. 2022	Director, IRPC Clean Power Company Limited
Jan.2019 - Dec. 2022	Senior Executive Vice President, Corporate Strategy Planning and Business Development, IRPC Public Company Limited
Jan. 2019 - Dec. 2022	Secretary of the Risk Management Committee, IRPC Public Company Limited
Nov. 2018 - Dec. 2022	Director, iPolymer Company Limited
Jul. 2018 - Dec. 2022	Director, WHA Industrial Estate Rayong Company Limited
Jan. 2016 - Dec. 2022	Acting Managing Director, IRPC OIL Company Limited
Jan. 2016 - Dec. 2022	Acting Managing Director, IRPC A&L Company Limited

Jan. 2016 - Dec. 2018	Senior Executive Vice President, Corporate Commercial and Marketing, IRPC Public Company Limited
Jan. 2016 - Dec. 2016	Acting Executive Vice President, Corporate Marketing, IRPC Public Company Limited
Feb. 2015 - Jun. 2017	Director, IRPC PCC Company Limited
Dec. 2014 - Dec. 2022	Director, IRPC A&L Company Limited
Dec. 2014 - Feb. 2019	Director, UBE Chemical (Asia) Public Company Limited
Feb. 2012 - Dec. 2022	Director, IRPC Oil Company Limited
Feb. 2012 - Jul. 2016	Director, Thai ABS Company Limited

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

None

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

None

Mrs. Nidcha Jirametthanakij

Age: 60 Years

(Resigned 30 September 2022)**Education/Training**

- Bachelor of Accounting (Accounting), Thammasat University
- Master of Business Administration, Kasetsart University
- Executive Development Program by Fiscal Policy Research Institute Foundation, Kingdom of Thailand in cooperation with Maxwell School of Syracuse University
- Advanced Management Program (AMP) 2 - People Management
- CFOs Orientation Course for New IPOs, The Stock Exchange of Thailand (SET)
- The Role of the Board in IT Governance, Year 2020, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 206/2015, Thai Institute of Directors Association (IOD)

Work experience within the past 5 years

Mar. 2021 - Sep. 2022	VISTEC Finance and Budget Sub-Committee, Vidyasirimedhi Institute of Science and Technology (VISTEC)
Jul. 2020 - Sep. 2022	Director, Mytex Polymers (Thailand) Company
Dec. 2018 - Sep. 2022	Director, IRPC A&L Company Limited
Nov. 2018 - Sep. 2022	Director, iPolymer Company Limited
Nov. 2018 - Sep. 2022	Director, IRPC Oil Company Limited
Nov. 2018 - Sep. 2022	Director, IRPC Polyol Company Limited
Nov. 2018 - Sep. 2022	Director, WHA Industrial Estate Rayong Company Limited
Oct. 2018 - Sep. 2022	Director, UBE Chemicals (Asia) Public Company Limited
Oct. 2018 - Sep. 2022	Director, IRPC Clean Power Company
Oct. 2018 - Sep. 2022	Senior Executive Vice President, Corporate Accounting & Finance, IRPC Public Company Limited
Mar. 2018 - Sep. 2022	Executive Vice President, Corporate Finance & Accounting, PTT Public company Limited
2018	Executive Vice President, PTT Public Company Limited, Secondment to PTT Oil and Retail Business Company Limited
2016 - 2018	Vice President, Group Financial Planning, PTT Public Company Limited
2013 - 2016	Acting Managing Director, PTT Regional Treasury Center Pte. Ltd.

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

None

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

None

Mr. Prasitsak Swasduang

Age: 60 Years

(Retired)**Education/Training**

- Bachelor of Science in Chemistry, Chiang Mai University
- MINI MBA - Thammasat University
- Finance for Non-financial Executive - Thammasat University
- IT audit for Non-IT Auditor Masterclass by NSTDA

Work experience within the past 5 years

Jan. 2021 - Dec. 2022	Senior Vice President, Office of Corporate Internal Audit and Secretary of Audit Committee, IRPC Public Company Limited
Jan. 2017 - Dec. 2020	Division Manager of Strategy Information System Internal Audit Division, IRPC Public Company Limited
Jan. 2007 - Dec. 2016	Division Manager of Operation, QSHE & Subsidiary Companies Internal Audit Division, IRPC Public Company Limited

Current Position

[Board member/Management in Listed Company - The Stock Exchange of Thailand](#)

None

[Board member/Management in Non-Listed Company - The Stock Exchange of Thailand](#)

None

Report of the Audit Committee

Dear Shareholders,

IRPC's Audit Committee consists of three independent directors who are professionally qualified, knowledgeable, and highly experienced in the energy business, engineering, financial accounting, and management.

Undertaking tasks assigned by IRPC's Board of Directors, in strict observance of the Audit Committee's own charter, this committee also acts in compliance with notifications of the SET and SEC. The Audit Committee's policy focuses on compliance with good corporate governance, laws, and regulations relating to business operations, and ensuring the suitability, efficiency and effectiveness of the company's internal control and internal audit systems.

In 2022, the Audit Committee held a total of 11 meetings with the management, internal auditors, and external independent auditors as per the relevance of agenda items. Its performance is highlighted below:

1. Review of financial reports

The Audit Committee reviewed consolidated quarterly and annual financial statements as well as connected transactions and transactions that may cause conflicts of interest together with external auditors and corporate accounting and finance executives on agenda items relating to financial statements where they were expected to clarify and address the committee's queries as to their accuracy, completeness, and reliability, including adequate disclosure of external auditor's opinion that is useful to financial statement users, in accordance with financial reporting standards and in compliance with relevant laws. The Audit Committee reviewed and approved the financial statements audited by external auditors who gave an unqualified audit report.

In addition, the Audit Committee has arranged a meeting with the external auditors specifically, without participation of the management to discuss proposed audit plan, suggestions on ways to handle matters of concern that may arise in the course of auditing. They also discussed independence of external auditors, material risks and key audit matters (KAM).

2. Review of risk management

The Audit Committee reviewed risk management based on the internal auditors and external auditor's reports on the Company's risk management and acknowledged the report on corporate risk management performance for which the Risk Management Committee provides oversight. The Risk Management Committee's oversight also covers approval of risk management policy and framework, monitoring of risk assessment, approval of risk management measures, and reporting on the corporate risk management performance to the Board for acknowledgement on a regular basis. This is to ascertain that the company's risk management system is suitable and adequate for its businesses to manage and keep risks within its risk appetite.

3. Review of internal control system

The Audit Committee reviewed the adequacy and suitability of IRPC's internal control system to reasonably ensure the efficiency and effectiveness of the company's business operations to achieve objectives and goals. The review was based on the internal and external auditors' reports on internal control, the follow-up reports on implementation of auditor's recommendations as well as results of the assessment questionnaires completed by the management on the adequacy of the company's internal control system in accordance with the internal control operational framework prescribed by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Having assessed the internal control system, risk management and credibility of financial reports, the committee was reasonably assured that the Company had sound internal control system adequate for its business. The results of the assessment can reasonably give assurance that the Company had sound and adequate internal control system for its business operations.

4. Review and oversight of internal audit

The Audit Committee has provided supervisory oversight for the internal audit unit to ensure its independence. The internal audit unit reports directly to the Audit Committee as prescribed by the internal audit charter, which is subject to annual review. The internal

audit unit is tasked with implementing internal audit in accordance with the internal audit policy and the approved internal audit plan as well as scrutinizing issues arising from auditing and give recommendations with a view to improving internal audit efficiency and to monitor auditing results on a regular basis.

In addition, The Audit Committee approved the implementation of an internal audit quality assessment project conducted by an independent external assessor. The objective is to evaluate the quality of internal audit and suggest ways to improve quality based on International Standards for the Professional Practice of Internal Auditing and best practices. The assessment results indicated that internal audit quality generally meets standards. No instances of noncompliance with quality standards were detected which may materially impact internal audit performance.

The Audit Committee has undertaken continual development of internal audit personnel by promoting the exchange of audit-related knowledge among PTT Group companies and encouraging internal auditors to obtain professional certificates in internal auditing. This will help them gain additional knowledge and raise internal audit quality to a level comparable to internationally accepted professional standards. In addition, the Audit Committee has stressed the importance of and encouraged the use of information technology systems in internal audit operations. In 2022, the Internal Audit Office developed Robotic Process Automation (RPA) to support internal audit to increase the efficiency and effectiveness of internal audit.

5. Review of corporate governance

The Audit Committee has stressed the importance of ethical business practices by reviewing and giving opinions on material connected transactions involving related parties or companies as precaution against conflicts of interest. The committee bases its reviews on customary business practices, reasonableness, pricing referenced to reasonable market prices and arm's length transactions. The reviewing process also cover tips provided by whistleblowers, complaints and monitoring of the handling and resolution of complaints in accordance with good corporate governance as well as to ascertain the full information disclosure in accordance with the rules prescribed by the SET. The Audit Committee also encourages the company and its subsidiaries to maintain and renew their memberships to the Collective Action Against Corruption (CAC) of the Anti-Corruption Organization of Thailand.

6. Review of compliance

The Audit Committee has reviewed and provided oversight for the Company's operations to be in full compliance with laws governing securities and the stock exchange, rules prescribed by the SET, laws relating to industry and the environment along with other laws relevant to the Company's business operations. The Audit Committee is of the opinion that the company has effective internal control process to ensure full legal and regulatory compliance.

7. Selection and appointment of the Certified Public Accountant for 2022

The Audit Committee is responsible for considering, selecting, nominating, and proposing remuneration, as well as recommending the removal of external independent auditor. This is to ensure the independence of the certified public accountant who has qualifications, expertise and professional skills is never in doubt. Having reviewed the nominated external auditors, the committee approved the nomination of EY Office for the Board's endorsement and shareholders' approval. In addition, the committee examined the other services provided by the external auditor to make sure they do not compromise the auditing independence.

In conclusion, in 2022, the Audit Committee performed its duties independently with utmost caution and prudence. The committee gave opinions and recommendations beneficial to the Company. To ensure that IRPC's financial reports are accurate, complete, and credible, and that the Company has observed good corporate governance, conducted its businesses lawfully and that its risk management and internal control systems proved adequate, efficient, and effective, enabling IRPC to achieve optimal benefits and sustainable growth.



(Mr. Somnuk Bomrungalee)
Chairman of the Audit Committee

Message from Chairman of the Corporate Governance Committee

Dear Shareholders,

Running our business according to principles of good governance and sustainability is an important mission of IRPC Public Company Limited, and to which we always stringently adhere. Our Corporate Governance Committee is responsible for the supervision and support of our operations, management, and staff by ensuring we operate efficiently and according to our corporate mission, goals, and policies - especially with regard to good governance and sustainability. Towards this end, we adopted the SET's Corporate Governance Code of 2017 to help drive our governance efforts throughout our business units, and, especially regarding shareholders' rights, to create an equal playing field among investors by executing our Board of Director's Fiduciary Duties with transparency to prevent corruption and scandal. These efforts are intended to operate our business with maximum efficiency, effectiveness, and growth to ensure lasting, sustainable returns to our shareholders.

The Corporate Governance Committee directs and audits governance efforts according to company policies. The Corporate Governance Committee reports to management quarterly to foster continuous improvement to the company's governance capabilities to maintain and keep up with international standards. In 2022, the Corporate Governance Committee was composed of 3 members: (1) Mr. Supot Laosuarpha, Chairman of the Corporate Governance Committee; (2) Mr. Chaiyaporn Phubrasert, Independent Director; and (3) General Aittipol Suwannarat., Independent Director. The Corporate Governance Committee has met a total of 6 times - each with 100 per cent attendance; allowing the committee to carry out its duties according to its charter and the needs of the company Board of Directors. The committee has been able to give useful advice and input to management in order to help the company operate in line with corporate policies and goals. In sum, all key company operations are managed in this manner.

1. Developing the Roles and Responsibilities of the Corporate Governance Committee

The Corporate Governance Committee regularly reviews, audits, and evaluates the actions of the board according to the principles of good governance. In 2022, the company engaged PwC as independent external advisors to evaluate the board of directors and constituent subcommittees on adherence to international standards within Thailand and abroad. For example, accession to the CG Code of 2017 was a metric employed by the Corporate Governance Report of Thai Listed Companies (CGR), the Thai Institute of Directors (IOD), and the Collective Action Against Corruption (CAC) report, the Dow Jones Sustainability Index (DJSI), the IOD's ASEAN CG Scorecard; and is a SET ESG measure. These measures show, with confidence, that the company operates according established international standards of conduct. Other areas currently experiencing important changes are digital technology and sustainability. In addition, the Corporate Governance Committee sponsors training for board members regarding the business and the role of board members, such as exploring the authority and responsibilities board members are charged with and making investments in new businesses.

2. Establishing Effective Management and Sustainable Growth

The Corporate Governance Committee regularly directs and follows-up on the company's management plan and sustainable development strategies. The committee also approves the Corporate Governance (CG), Compliance, Sustainability, and CSR plans and executes solid plans, which are aligned with the company's vision, business strategies, and sustainability goals. The committee regularly monitors plan progress during the regular quarterly meetings of the company board of directors.

The Corporate Governance Committee encourages awareness and understanding of effective corporate governance principles to the management team, staff, and stakeholders inside and outside the company. The committee organizes projects and activities to promote business ethics, like the IRPC CG Day 2022 and the IRPC Cubic Academy Season 8. We also participate in our business partners' activities, for example, "GCNT Forum 2022: Accelerating Business Solutions to Tackle Climate & Biodiversity Challenges" which was organized by the Global Compact Network Thailand (GCNT) and United Nations Thailand.

3. Taking Care of Stakeholders

In 2022, COVID-19 still affects Thailand and the Corporate Governance Committee members are aware of the situation and are concerned about the health and safety of both our shareholders and stakeholders. So, the committee organized e-Meetings, which are convenient and safe because they reduce the risk of COVID-19. The company also adopted electronic voting by using vendors which meet the ETDA Electronic Voting System standards.

Concerning the rights of minority shareholders, the company allows them to nominate directors and propose director candidates in advance in the agenda of the 2022 annual general meeting of shareholders. The company ensures transparency by publicly announcing proposed director candidates via company communication channels, including www.irpc.co.th and SET-Link, to benefit all shareholders equally.

We are determined to continue to improve our management. In 2022, the company was recognized by Thai and international organizations and institutes for the effectiveness of our management. We were recognized by the ASEAN CG Scorecard as a top 20 ASEAN company which scored the highest in management. We also received the Human Rights Award for the 4th consecutive year. We won the Sustainability Award of Honor and were the first-runner up of the UN Women 2022 Thailand WEP Awards for Community Engagement & Partnerships.

The company's success demonstrates our implementation of management standards, social responsibility, and sustainable development. Our accomplishments result from the passion and cooperation of management, staff, and stakeholders, who always give us strong support. The corporate governance committee is determined to establish effective management, leading to long-term corporate sustainability. We are confident the company will create sustainable long-term value to the businesses of our shareholders.



(Mr. Supot Laosuarpha)

Chairman of the Corporate Governance Committee

Message from the Chairman of the Nomination and Remuneration Committee

Dear Shareholders,

The year 2022 was marked by great challenges and tremendous economic, social, environmental, technological, and regulatory changes along with respective risk factors, to which every company must adapt in order to survive and thrive. New technologies have been adopted to develop new capabilities and improve competitive edge. With this in mind, the Nomination and Remuneration Committee stayed focused on performing its duties with dedication and prudence in accordance with the Nomination and Remuneration Committee Charter, corporate governance principles and the Corporate Governance Code for Listed Companies of the Stock Exchange of Thailand. Thus, enabling the Nomination and Remuneration Committee to select and nominate suitable candidates to serve as directors of the company through a transparent process. The Nomination and Remuneration Committee also ascertains that directors' knowledge and competencies are further developed to meet the company's business requirements and to build confidence among shareholders to reassure them that the company's Board of Directors and subcommittees are qualified and fully capable of safeguarding the interests of the company and shareholders in a transparent and fair manner, in conformation with good corporate governance principles.

The Nomination and Remuneration Committee consists of 3 directors: (1) Mr. Chansak Chuenchom, Chairman of the Nomination and Remuneration Committee (Non-executive Director), (2) Mr. Petai Mudtham (Non-executive Director), and (3) Mr. Yodchat Tasarika (Independent Director). In 2022, the Nomination and Remuneration Committee held a total of 11 meetings, attended by members of the committee, each providing comments and suggestions that are beneficial to the company. The committee's performance in accordance with its main tasks are highlighted below:

- Nomination of Directors and Members of Subcommittees**
 The Nomination and Remuneration Committee selected and nominated directors and members of subcommittees in the case of resignation or directors retiring by rotation after having completed their terms, in accordance with the selection criteria and nomination process as specified in the Nomination and Remuneration Committee Charter and the Board of Directors' policy. Candidates were selected based

on their qualifications both in terms of general characteristics, such as prudence, evidence-based decision-making, maturity, independent-mindedness, and skill characteristics that are in alignment with the business or the company's requirements or necessary conditions and characteristics that support and promote good corporate governance, etc. In 2022, a total of seven candidates were selected and nominated to the Board of Directors or shareholders (as the case may be) for approval and appointment, and others were nominated to serve on the company's 4 existing subcommittees, namely the Audit Committee, the Nomination and Remuneration Committee, Corporate Governance Committee and Risk Management Committee.

- Nomination of Chief Executive Officer and President**

The Nomination and Remuneration Committee set criteria for the selection and qualifications of candidates for the position of Chief Executive Officer and President to ensure a clear, transparent process in accordance with good corporate governance principles. The qualifications of CEO candidates must correspond with the type and size of business comparable to other companies in the same industry. As the then-CEO resigned in September 2022, the Nomination and Remuneration Committee started the selection process under the predetermined criteria and proposed to the Board of Directors the creation of an ad hoc "Chief Executive Officer and President Selection and Nomination Committee" to ensure transparency, independence of the process as appropriate to the current situation of the company.

- Compensation for Directors and Members of Subcommittees**

The Nomination and Remuneration Committee determined directors' compensation taking into consideration the best practices recommended by the Stock Exchange of Thailand in accordance with the principles of good corporate governance as well as conducting a review of compensation offered by top companies of comparable size in the same industry. The Nomination and Remuneration Committee proposed that the same directors' compensation packages should be offered in 2022 that had been approved by the annual General Meeting of Shareholders in

2021, which was deemed appropriate, comparable to other leading companies of similar size and business complexity. Directors' bonuses were also determined based on the principle that bonuses will not be offered for any fiscal year that registered operating losses.

- **Target setting, evaluation and compensation for the Chief Executive Officer and President**

The Nomination and Remuneration Committee reviewed performance evaluation criteria, guidelines, components, and goals of the CEO for the determination of CEO's compensation on an annual basis to ensure transparency and reasonableness.

In 2022, the Nomination and Remuneration Committee determined the components and goals of CEO performance as appropriate, fair, and sufficiently challenging in line with the situation of the company, including Corporate KPIs of the CEO. Performance assessment conducted by the Board of Directors and the Management, along with sustainable growth factors for CEO performance evaluation were completed by the end of the year, ready to be presented to the Board of Directors for consideration in approving the proposed annual CEO's compensation.

In determining CEO's performance-based compensation and in order to ensure effectiveness and acceptability of the process to all parties, the Nomination and Remuneration Committee has set clear criteria and process, taking into consideration a wide range of determining factors, including the compensation of company's previous CEOs, CEO's compensation of other companies in similar industry, qualifications and experience of the CEO nominee, duties and responsibilities of the CEO. The CEO's compensation must be fair, appropriate and provide an incentive to reward diligent performance of duties.

- **Senior executive succession planning**

The Board of Directors determined that senior executives at N-1 level are crucial in driving IRPC to achieve its goals. As part of CEO succession planning, the Nomination and Remuneration Committee was tasked with selecting and nominating candidates for N-1 level executive positions to report directly to the CEO. These senior executives will be groomed as potential successors to top positions as part of the company's succession planning. This also provides an incentive for high-caliber executives to grow their careers with the company.

In 2022, the Nomination and Remuneration Committee developed senior executive succession planning and conducted readiness assessment as follows:

- (1) To create succession planning chart
- (2) To identify key components in the succession planning chart
- (3) To prioritize succession planning
- (4) To ensure succession readiness

- **Self-Assessment of the Nomination and Remuneration Committee**

In compliance with the Corporate Governance Code for Listed Companies 2017 (CG Code), the Board of Directors decided to engage an independent evaluator to assess the performance of the Board of Directors and its subcommittees every three years. In 2022, PriceWaterhouseCoopers ABAS Co., Ltd. (PwC) was appointed to evaluate CG Code compliance of the Board of Directors and subcommittees, with reference to CG frameworks and standards of evaluation forms based on guidelines and international best practices. The evaluation form covers implementation of the following CG mechanisms: (1) Structure and qualifications of directors (2) Roles and responsibilities (3) Meeting preparation and procedures (4) Training and self-development.

The Nomination and Remuneration received an assessment score of 98.06 per cent, or "Excellence" rating comparable to the scoring criteria used by the Corporate Governance Report: CGR by Thai Institute of Directors (IOD).

In summary, in 2022, the Nomination and Remuneration Committee attached great importance to fostering human resource and leadership development strategies through human resource system, tools and mechanisms that meet widely accepted standards to step up preparedness in both numbers and capabilities in line with the company's strategies and goals and Environmental, Social and Governance (ESG) principles and practices. To this end, the Nomination and Remuneration Committee would like to reaffirm its commitment to perform its duties with transparency and utmost efficiency to ensure fairness and the best interests of the company and shareholders as well as the sustainable growth of IRPC Public Company Limited in years to come.



(Mr. Chansak Chuenchom)

Chairman of the Nomination and Remuneration Committee

Message from the Chairman of the Risk Management Committee

Dear Shareholders,

The Risk Management Committee has been assigned by the Board of Directors to define policy, provide recommendations, and set guidelines for IRPC's corporate risk management, corresponding to strategic investment planning, to ensure its operational efficiency and sustainable growth. The committee screens, scrutinizes and gives advice on the management of strategic investment projects as well as promotes and supports enterprise-wide risk management and identifies new business opportunities arising from Megatrends and existing businesses. The committee consists of five highly qualified directors with deep knowledge and extensive experience in risk management, namely (1) Dr. Anusorn Sangnimnuan, Chairman, (2) Dr. Ekniti Nitithanprapas, Director, (3) Mr. Prasong Intaranongpai, Director, (4) Miss Peangpanor Boonklum, Director, and (5) Mr. Kris Imsang, Director

IRPC faced significant challenges from uncertain situations and high volatility. Although the COVID-19 virus outbreak began to be contained and circumstances restored to normal. Energy price increases, high inflation, the decline in the economy, and other effects of the Russian-Ukrainian conflict scenario are all risk factors that have an impact on the performance of the business. The Risk Management Committee's performance in the past year is summarized as follows:

1. The committee supervised and considered corporate risk management in line with international standard, comprising context definition, risk identification, risk analysis and assessment, determination of risk management measures, including monitoring and reviewing risk management results to keep corporate risks at an acceptable level and achieve specified targets.
2. The committee reviewed and recommended management measures in all dimensions including (1) Strategic Risk, such as the risk of increasing the share of sales of specialized products investments made strategically in new and existing companies that support the mission, etc. (2) Business Risk, control for business risks such as oil and product prices., currency exchange risks, internet security risks, etc., and (3) Operational Risk such as risks to Safety, Occupational Health, and risks to the society and the likelihood of succeeding in the goal for greenhouse emission reduction, etc.
3. The Risk Management Committee proposed corporate risk management guidelines to the Company's work groups, consisting of: The Risk Management and Internal Control Committee, which managed corporate risks according to stated policy and guidelines. The Supply Chain Financial Risk Management Committee monitored and analyzed market situations, managed

prices and supply of crude oil, feedstocks, petroleum, and petrochemical products, along with preparation of financial transactions. This, so as to ensure that such risk management activities were efficient and that risks were mitigated effectively. The Supply Chain and Financial Risk Management Committee also reviewed the report on results of price and financial risk management as well as provided opinion and recommendations.

4. The committee reviewed the implementation guidelines for the Ultra Clean Fuel (UCF) project to improve refinery efficiency and upgrade diesel quality to comply with the Euro 5 emission standard. It also reviewed investment in the combined heat and power project (CHP-III) and the project to procure N₂ and O₂ for IRPC Plc's industrial park.
5. The committee followed up on operating results of IRPC's subsidiaries, such as Innopolymed Co., Ltd and gave recommendations on risk management.
6. The committee submitted quarterly risk management report to the Board of Directors.
7. The committee considered and commented on 2023 enterprise risk management before submitting for the approval of the Board of Directors by reviewing risk lists to align with business direction, corporate strategy for sustainable growth.

The Risk Management Committee has prudently performed the tasks assigned to us to the best of our ability, with independence in line with corporate governance for the benefits of IRPC and all stakeholders.



(Dr. Anusorn Sangnimnuan)

Chairman of the Risk Management Committee



Section 01

Business Operations and Result Performance



- Structure and Business Operation of IRPC
- Risk Management
- Business-Driven Sustainability
- Management's Discussion and Analysis (MD&A)
- General Information and Other Important Information



With a strategy that focuses on building strength from within, IRPC is able to take advantage of technology and innovation to develop high value-added specialty products and extending to downstream businesses to be closer to consumers.

The company is now in a position to offer **Material Solution & Energy Solution** widen investment portfolio, and build partnerships to enter adjacent and new businesses. ”

Oil Refinery

Maximum Capacity

**215,000 Barrels
per Day Ranked 3rd**

of Domestic Oil Refining Capacity.



**Focus on Developing
Petrochemical Products**

Innovate

to meet demands throughout the chain industry regarding the needs.



Promote the Use

Clean Energy

and Install Solar Floating Buoys on the

200 Rai in the Industrial Area

IRPC Industry, Rayong Province.



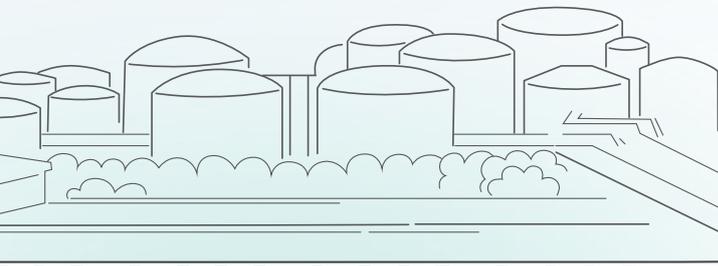
Product storage tank business:

The company has tanks for storing petroleum products and liquid petrochemicals

299 tanks

to support for storing products up to

2.9 million tons.

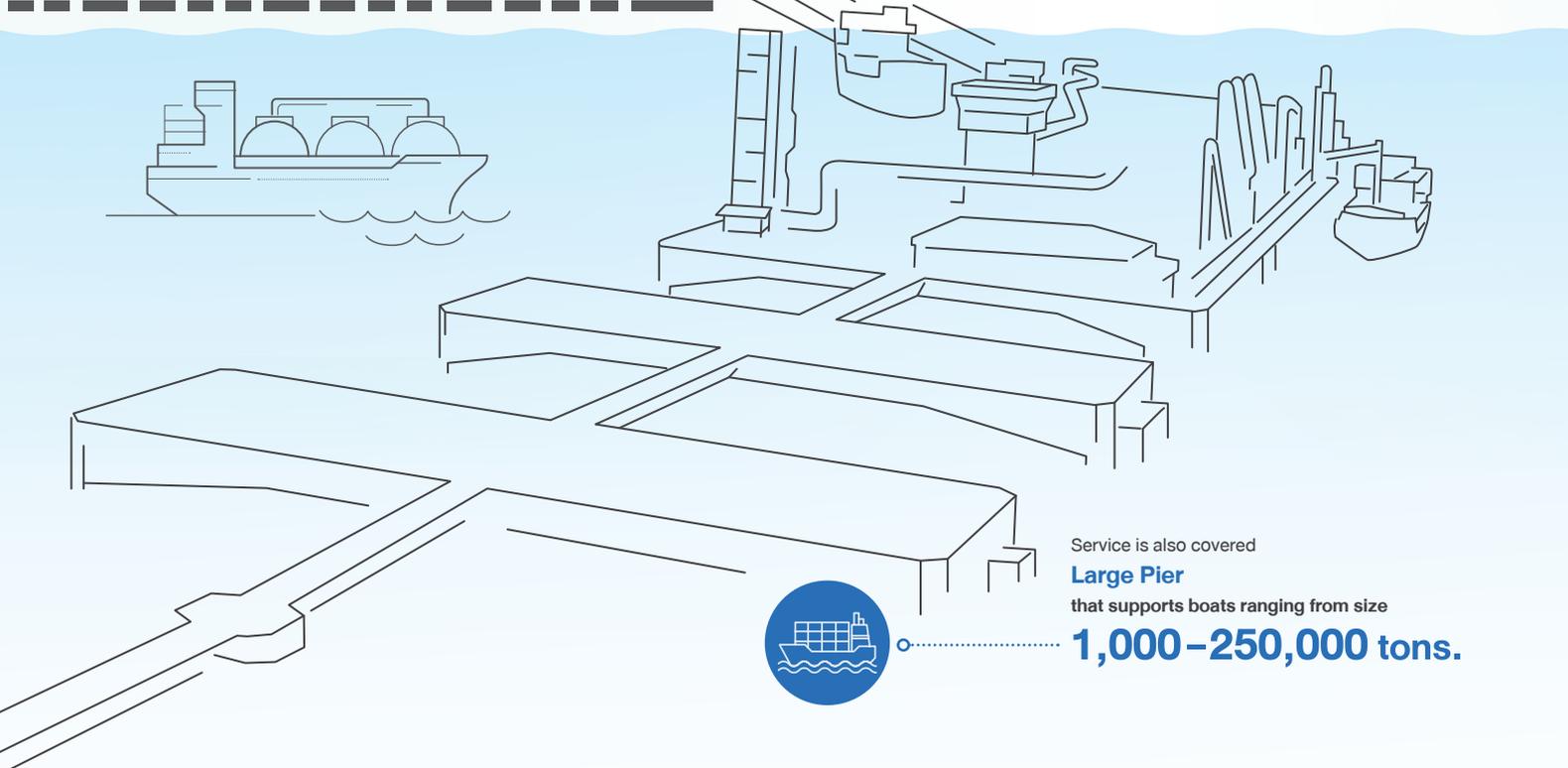


Service is also covered

Large Pier

that supports boats ranging from size

1,000–250,000 tons.



Structure and Business Operations of IRPC

Revenue Structure

IRPC and its subsidiaries generated revenues from distribution and sales of products as follows: Revenue from petroleum products accounted for 77 per cent of total net sales primarily from diesel, gasoline, fuel oil, lube base oil and asphalt. Revenue from petrochemical products accounted for 22 per cent from olefins, aromatics,

and various polymers, or plastic pellets. In addition, the company earned revenue from other businesses, accounting for one per cent from electricity and utilities charges collected. In 2022, IRPC's net sales revenue totaled Baht 318,396 million as shown below:

Revenue structure							
Type of Business	Operated by/ Shareholding proportion held by IRPC	2020		2021		2022	
		Million Baht	%	Million Baht	%	Million Baht	%
1. Petroleum	IRPC Plc. IRPC Oil Co., Ltd. (99.99%)	101,429	67%	160,626	68%	243,953	77%
2. Petrochemical	IRPC Plc. Innopolymed Co., Ltd. (60.00%) IRPC A&L Co., Ltd. (57.48%) iPolymer Co., Ltd. (55.00%)	47,457	31%	71,089	30%	70,402	22%
3. Other businesses ⁽¹⁾	IRPC Plc.	3,433	2%	3,459	2%	4,041	1%
Total revenue from net sales ⁽²⁾		152,319	100%	235,174	100%	318,396	100%
Share of profits from investment in associated companies		333		713		284	

Notes: ⁽¹⁾ Other businesses consist of revenue from electricity and utilities charges.

⁽²⁾ Revenue from net sales consist of petroleum business (excluding excise tax), petrochemical business, and electricity and utilities business.

Revenue structure of domestic and international sales

Type of revenue	2020		2021		2022	
	Million Baht	%	Million Baht	%	Million Baht	%
Domestic sales revenue	89,678	59%	137,817	59%	202,717	64%
International sales revenue	62,641	41%	97,357	41%	115,679	36%
- CLMV countries	13,876	9%	23,010	10%	33,439	10%
- Other countries	48,765	32%	74,347	31%	82,240	26%
Total revenue from net sales	152,319	100%	235,174	100%	318,396	100%

Nature of Business

IRPC Public Company Limited is the first fully integrated petrochemical operator in Southeast Asia. Located within the company's own industrial zone in Rayong, its production structure comprises petroleum and petrochemical complexes, complete with utilities and infrastructure supporting the operations, including a deep-sea port, oil depots, and power plants.

Petroleum Business

The company operates an oil refinery with a total production capacity of 215,000 barrels per day (bpd). Ranked third-largest oil refinery in the country, IRPC produces a wide variety of petroleum products, consisting of liquefied petroleum gas (LPG), naphtha, gasoline, diesel and fuel oil. In addition, the company has a Lube Base Oil production plant with a capacity of 320,000 tons per year, and its asphalt plant has a total capacity of 600,000 tons per year as the country's largest producer. It is also Thailand's first

asphalt plant to sell TIS-certified Bitumen Grade 40/50 in the domestic market. In addition, IRPC also produces Rubber Process Oil whose quality meets internationally recognized standards.

Diesel Quality Improvement Project

Thailand is committed to the enforcement of Euro 5-compliant diesel from 1 January 2024 to reduce air pollution and dust problems, including PM2.5. In response, IRPC has started adjusting its production processes by implementing the Ultra Clean Fuel Project (UCF). The objective is to increase refinery's efficiency and upgrade diesel quality. The UCF project enhances the company's competitiveness as its refinery, which has until recently produced large quantities of high-sulfur diesel for export to some Asian markets. In the future, the high-sulfur diesel market is expected to shrink and be confined to operators of oceangoing vessels and fishing trawlers, which have limited demand. Furthermore, these customers may opt for cheaper low-sulfur fuel oil instead. As a result, the company may face intense price competition going forward.

The project will enable IRPC to meet the increase in demand for new standard diesel in the domestic market,

and to export to countries that will be switching from Euro 4- to Euro 5-compliant diesel in the foreseeable future. This will enable the company to add product value and increase revenue.

Petrochemical Business

IRPC is a producer of upstream petrochemical products, namely olefins and aromatics, which are mainly used as feedstocks for the company's downstream petrochemical manufacturing, consisting of polyolefin-type plastic pellets (HDPE, PP) and styrenic-type pellets (ABS/SAN, PS, EPS) for sale to manufacturers of finished plastic products in Thailand and overseas under the POLIMAXX trademark.

In the mean time, the petrochemical business continues to forge ahead, adapting to the fast-changing world in terms of environmental standards and evolving production technologies. IRPC's research and development efforts have yielded a crop of new and innovative products to increase its competitiveness. These include Natural Compound Resin, Acetylene Black for Li-ion Battery (Pim-L, Pim-AL), Ultra High Molecular Weight Polyethylene (UHMW-PE), PP Spunbond, and PP Meltblown, etc., along with the implementation of the Eco Solution management approach in a Closed-Loop plastic supply chain, incorporating efficient and sound recycling at all stages of production. Thus, eliminating manufacturing waste that would otherwise become a burden to the community and society at large.

Supporting Businesses

Power and Utilities

IRPC provides electricity, steam, infrastructure, utilities as well as wastewater treatment to industrial clients as well as other services to fully support their operations. Details of the company's production, distribution and sale of power and utility services are as follows:

Electrical and Steam

IRPC operates a Combined Heat and Power Plant, which uses natural gas as fuel, and a 307-MW coal-fired power plant. Together with the generation capacity of the power

plant of IRPC Clean Power Co., Ltd. (IRPC-CP), a joint venture whose investment plan was approved in 2021, and is expected to be completed by 2024, the total capacity will rise to approximately 430 MW. The power plant is controlled by the Power Dispatching Center to regulate the distribution of electricity and steam for maximum stability, complete with Loop Line transmission system to ensure uninterrupted power even in the event of contingency, such as maintenance outage.

IRPC also installed a 12.5 MW Floating Solar Farm in its 200-rai water reservoir. The solar farm enhances the power stability in IRPC Industrial Zone in Rayong, and is considered an eco-friendly innovation that not only increases business opportunities but also mitigates the impacts of global warming.

The company also supports and cooperates with customers in IRPC Industrial Zone in implementing various environmentally sound projects for pollution-free power generation.

Water System: Filtered Water, Demineralized Water, Cooling Water, Raw Water, Fire-Fighting Water

The company receives raw water under industrial quota from the Royal Irrigation Department and operates two water filtration plants located in Ban Khai District, and in IRPC Industrial Zone, that contribute to stability and operational continuity.

Pneumatics: Nitrogen, Instrument Air, Plant Air

IRPC operates its own industrial pneumatic system as well as works in direct partnership with leading manufacturers of industrial pneumatic systems.

Wastewater Treatment

IRPC uses Membrane Bioreactor Plus Activated Carbon Adsorption (MBR Plus AC) to treat wastewater. This bioprocess is highly efficient and operationally stable. The treated water consistently passes inspection for effluent standards, inspiring trust of surrounding communities and confidence in environmental sustainability.

Port and Storage Tank Services

IRPC Port Services

IRPC provides port services to domestic and international clients for vessels to berth at its terminals for loading and unloading, with port services available to outside clients serving different regions as follows:

IRPC Deep Sea Port, Eastern Thailand, in Mueang Rayong District, Rayong Province, consisting of:

- **Bulk & Container Terminal (BCT):** The terminal is 900 meters long and 44 meters wide. It comprises six berths, which accommodate vessels of various sizes, ranging from 800 to 150,000 DWT, with a maximum draft of 13.5 meters.
- **Liquid & Chemical Terminal (LCT):** The terminal is equipped with advanced equipment to handle liquids and gases efficiently and safely. The terminal is 1,623 meters long, consisting of six berths that accommodate vessels from 1,000 to 250,000 DWT.

Storage Tank Services

IRPC provides storage tanks for liquid petroleum and petrochemical products. The company's teams of experienced specialists operate 299 tanks with a combined storage capacity of up to 2.9 million tons, using an efficient management system that meets international safety standards. These tanks accommodate IRPC's petroleum-based products and serve external clients as well. Tank services are available in different regions: at Rayong Oil Depot, Phra Pradaeng Oil Depot, Ayutthaya Oil Depot, and Chumphon Oil Depot. Each depot has berths to accommodate sea freights, which make transportation and distribution efficient as well as help clients save costs and time.

Property Management Business

IRPC manages vast expanses of high-potential land in Rayong and other provinces, totalling approximately 12,000 rai. The company has developed these plots of land into industrial estates and those that have potential for future

development and expansion of manufacturing industries in connection with the government's Eastern Economic Corridor (EEC) development project, along with other investment promotion policy. IRPC's property management business is divided into three units:

Industrial Zone Project: IRPC Industrial Park, Mueang Rayong District, Rayong Province

The IRPC Industrial Zone offers a complete range of infrastructure and utility systems. This industrial park serves as a hub of industrial ecosystems and supply chain connecting petroleum refinery and its upstream petroleum materials or products to the integrated petrochemical complexes and its Direct Downstream industries and products. The management approach not only encapsulates the very essence of new petroleum-petrochemical business model, but also paves the way for further expansion to accommodate promoted industries under the Eastern Economic Corridor (EEC) special development zone, such as Biotech Industry, Integrated Medical Industry (Health, Life & Science), and Advanced Material Industry.

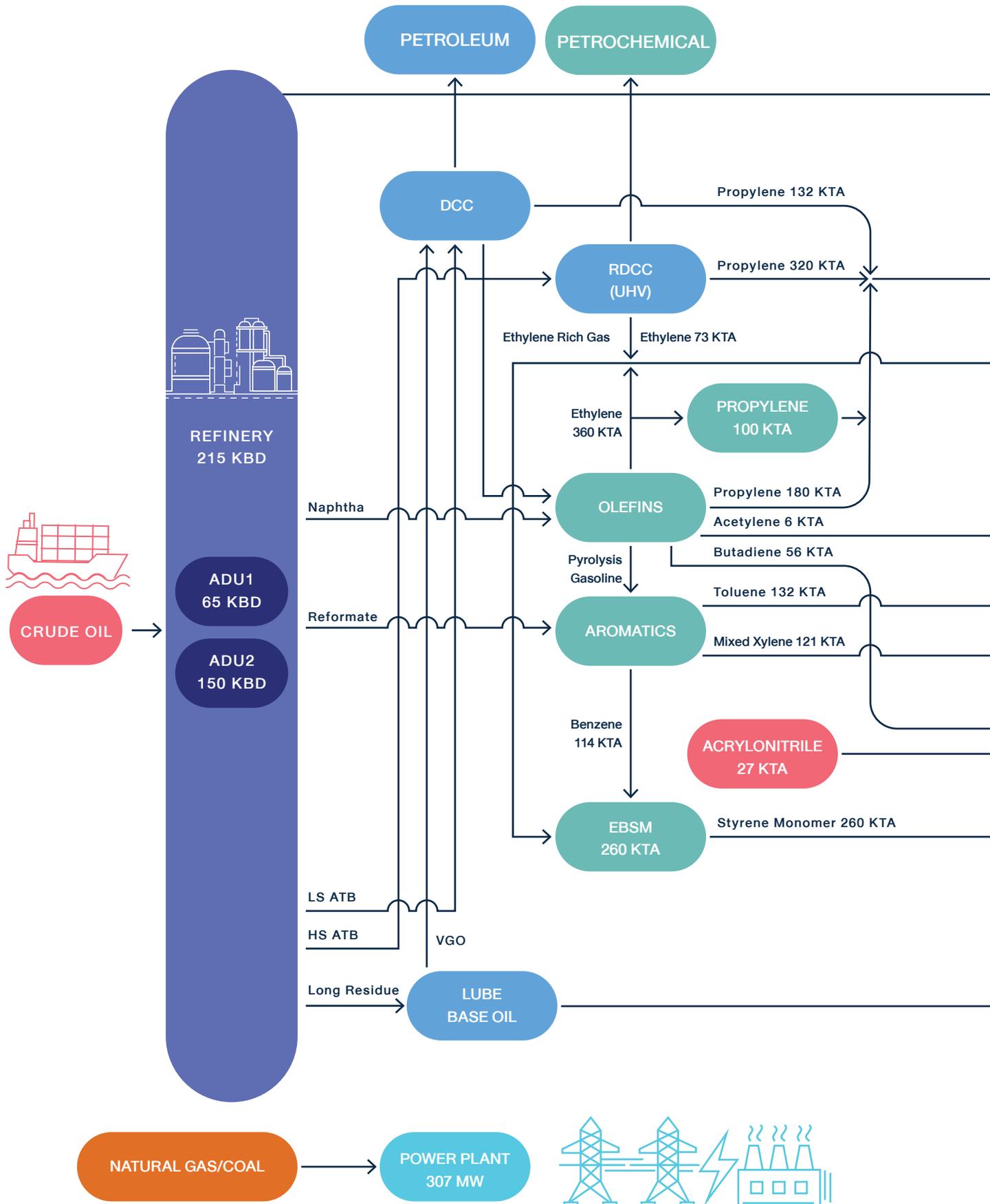
Industrial Estate Project: WHA Industrial Estate Rayong (WHAIER), Ban Khai District, Rayong Province

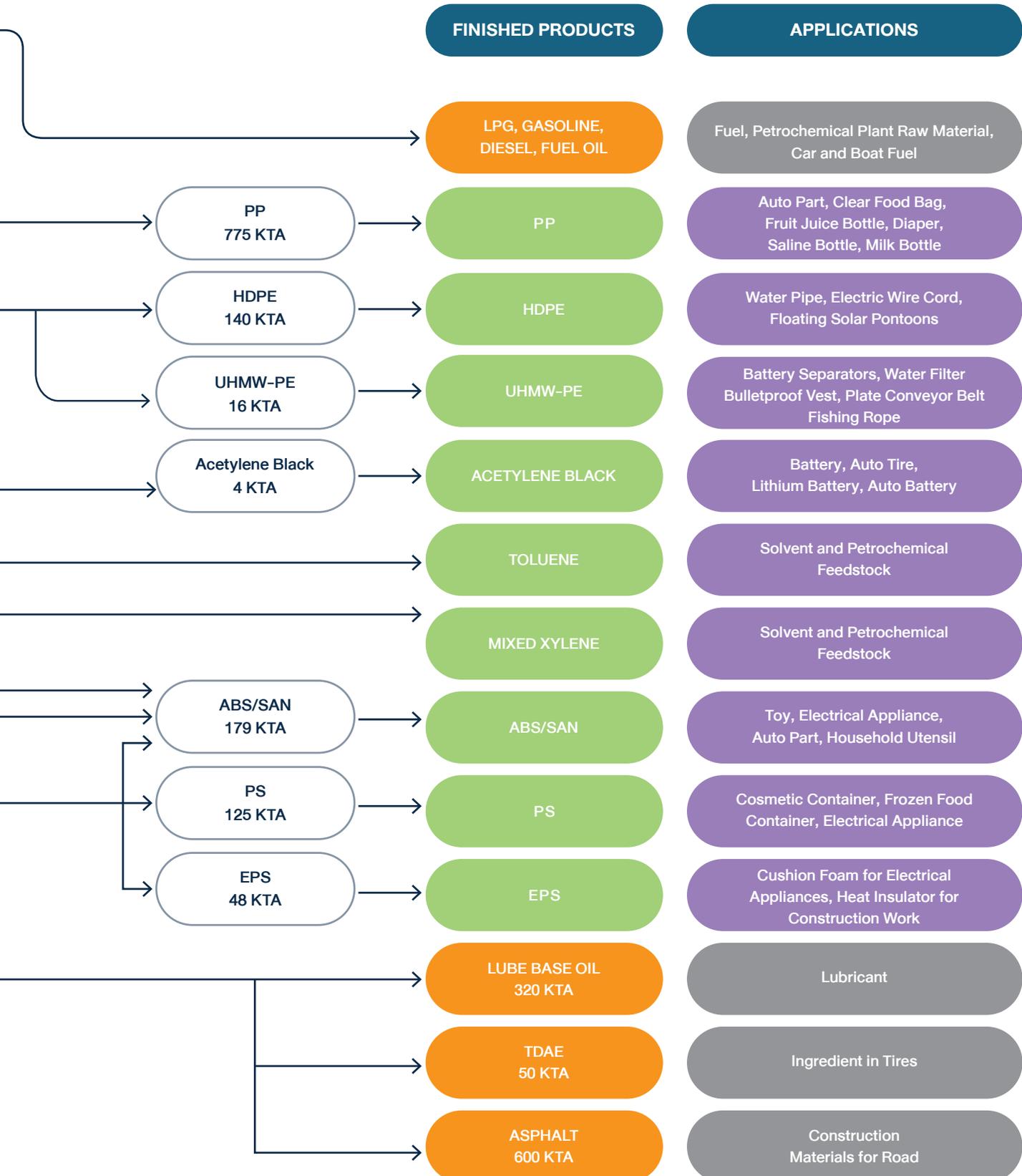
This industrial estate is a joint venture between IRPC Public Company Limited and WHA ID Industrial Development Public Company Limited (WHA ID), with shareholding proportion of 40/60 per cent, respectively. The joint venture aims to accommodate investment in the Eastern Economic Corridor (EEC). Since the third quarter of 2022, basic infrastructure development has been underway, and marketing plans will be launched the following year.

Other High-Potential Land

IRPC owns a large plot of land in Chana District, Songkhla Province, with an area of approximately 2,300 rai that can be developed into an industrial support base and commercial development project alongside a deep seaport project and a renewable energy power project. The company also owns other sizeable plots in Rayong and smaller parcels of land in Chiang Mai, and Lamphun.

Integrated Petroleum and Petrochemical Complex Flow Chart





Production Capacity and Volume

(Unit: KTA)

Product ⁽¹⁾	Production Capacity			Volume ⁽²⁾			Utilization Rate		
	2020	2021	2022	2020	2021	2022 ⁽⁴⁾	2020	2021	2022
Petroleum									
Oil Refinery (KBD)	215	215	215	192	192	175	89%	89%	81%
Lube Base Plant	1,282	1,282	1,282	1,094	1,151	988	85%	90%	77%
Lube Base Oil	320	320	320	336	333	281	105%	104%	88%
Asphalt	600	600	600	606	655	551	101%	109%	92%
Petrochemicals									
Polyolefins	915	915	915	811	863	735	89%	94%	80%
- HDPE	140	140	140	117	119	98	83%	85%	70%
- PP	775	775	775	683	729	624	88%	94%	81%
Polystyrenics	433	433	433	395	408	321	91%	94%	74%
- ABS	119	119	119	86	89	68	72%	75%	58%
- SAN	105	105	105	93	102	68	88%	97%	65%
- PS	125	125	125	155	148	126	124%	118%	101%
- EPS	48	48	48	35	42	35	73%	88%	73%
Olefins⁽³⁾	696	696	696	682	664	647	98%	95%	93%
- Ethylene	433	433	433	354	347	345	82%	80%	80%
- Propylene	732	732	732	662	701	595	90%	96%	81%
- Butadiene	56	56	56	56	52	52	100%	93%	92%
Aromatics	501	501	501	493	514	460	98%	103%	92%
- Benzene	114	114	114	105	113	79	92%	99%	69%
- Toluene	132	132	132	144	141	123	109%	107%	93%
- Mixed Xylene	121	121	121	141	146	121	116%	120%	100%
Styrenics	260	260	260	283	263	244	109%	101%	94%

Notes: ⁽¹⁾ Total production capacity and volume of products consist of main products and other products.

⁽²⁾ Volume includes products used as feedstock in the plants.

⁽³⁾ Olefins production capacity at 696 KTA does not include olefins from DDC and RDCC plants.

⁽⁴⁾ In 2022, approximately 37 days of turnaround--scheduled large-scale maintenance activity.

Products

IRPC and its subsidiaries produce and distribute petroleum and petrochemical products, with details as follows:

Petroleum Products

Petroleum Products Fuels

Consist:

- **Gasoline:** is fuel for gasoline engines. Gasoline is classified by its octane rating, which indicates its resistance to “knocking” during combustion under state regulations. IRPC’s main grades of gasoline consist of lead-free ULG91, GSH95 and GSH91 gasohol, and Gasohol Base, which is used to manufacture gasohol.
- **Diesel:** is fuel for high-speed diesel engines used in the industrial sector and vehicles, such as cars, trucks, fishing trawlers, passenger boats, and tractors. It is used as a fuel for high-speed diesel engines in industries and vehicles, such as cars, trucks, fishing boats, passenger boats, and tractors. IRPC offers blends of 6-20% biodiesel as per government policy to promote the use of alternative energy and to support and promote the use of palm oil. In addition, the government has set a policy defining B10 diesel as standard diesel, and B7 diesel, and B20 as alternatives.
- **Fuel Oil:** is a fraction of crude oil with a high boiling point. Fuel oil is widely used in the industrial sector, transportation, and power generation.
- **Liquefied Petroleum Gas (LPG) or Cooking Gas:** is a mixture of hydrocarbon gases, mainly propane and butane. LPG is commonly found in household kitchens and factories in industrial applications. LPG can also be used as a fuel for gasoline engines.
- **Low Sulfur Fuel Oil (LSFO):** is used primarily by cargo ships in compliance with the International Maritime Organization’s (IMO) requirements, which determine that the sulfur content in Bunker Fuel must be reduced from 3.5 per cent to 0.5 per cent.

Lube Base Oils

- **Lube Base Oil:** refers to heavy distillates used for producing different grades of lubricants. IRPC produces the following grades of base oil for various purposes and applications as follows:
 - **150 SN** is the feedstock for the production of lubricants for manufacturing industries, such as automotive industry, and transportation industry, etc.
 - **500 SN** is the feedstock for the manufacture of lubricants used in most types of vehicles.
 - **150 BS** is used in industries and engines involving high friction, such as those in trucks, locomotives, and seagoing vessels, etc.

In addition, IRPC has researched and developed other innovative base oils, namely, Treated Distillate Aromatic Extract (TDAE) and Residue Aromatic Extract (RAE). These are used as feedstocks for the manufacture of automotive tires and contain reduced Polycyclic Aromatic Hydrocarbons (PAHs), which are carcinogenic, thus contributing to consumer safety.

- **Asphalt:** is a compound of hydrocarbons and other organic substances collectively known as bitumen. Thick and viscous, asphalt is the heaviest part from the crude oil distillation process. It is used for road construction and sealant.

Other Petroleum Products

Naphtha refers to light distillates obtained from the oil refining process. It is a major petrochemical feedstock.

Petrochemical Products

1. Olefins

IRPC’s olefin products consist of ethylene, propylene, and butadiene are feedstocks for the production of various plastic pellets, mainly polyethylene (PE) and polypropylene (PP).

In addition, the company's olefin plant yields Acetylene Black as a by-product. This powder-like pure black substance has high electrical conductivity and is thus commonly used in the manufacture of standard batteries and even lithium-ion batteries for electronics and electric vehicles. It is also an electrically conductive additive for polymers and rubber products.

2. Aromatics

IRPC's aromatic products consist of Benzene, Toluene, and Xylene. They are used as feedstocks for manufacturing plants of IRPC's subsidiaries and some are sold to other related industries.

3. Polymer

IRPC produces and markets polymer or plastic pellets, which are downstream petrochemical products under the "POLIMAXX" trademark. These are the feedstocks for the manufacture of a wide range of plastic products through extrusion process, such as packaging, houseware, electrical appliances, auto and motorcycle parts, medical equipment and personal hygiene products, etc.

• High Density Polyethylene (HDPE)

IRPC's HDPE resin pellets are high-density polyethylene products with In-line Compounding suitable for pipe extrusion, especially water supply pipes, electrical conduits, and drainage pipes, which require exceptional weather resistance.

• Polypropylene (PP)

PP is widely used in industries, from packaging, electrical appliances, automotive parts to medical equipment and apparatuses. IRPC produces PP Homopolymer, PP Impact Copolymer, and extra transparent PP Random Copolymer. The company also produces PP Composite which allows additives and color customization according to the customer's requirements.

• Acrylonitrile-Butadiene-Styrene (ABS)

IRPC produces several grades of ABS, each with its unique properties, such as high impact and super high impact resistance, high gloss, and high heat resistance, etc. Compatible with Injection Molding and Sheet Extrusion processes, ABS is commonly made into products that require toughness, durability, heat resistance, high tensile strength, chemical resistance, solvent resistance, coating adhesion, surface quality, and luster, such as parts for electrical appliances, interior and exterior auto parts, houseware, sanitaryware, and children's toys, etc.

• Acrylonitrile Styrene (SAN)

Transparent, hard, strong, and tough, SAN, or AS, has higher thermal and chemical resistance than PS. It is commonly used to manufacture lenses for headlights and taillights, some parts of turn-signal lenses, household items, such as sanitaryware, lighters and containers as well as electrical appliances, such as fan blades and blenders. In addition to the properties described, SAN also produces glossy surfaces, has high rigidity, thermal and chemical resistance and is particularly resistant to shear force.

• Polystyrene (PS)

IRPC produces two categories of PS, namely General Purpose Polystyrene (GPPS) that offers extra transparent and hardness. It is easily molded but has low impact strength and is thus commonly used to make products that require transparency and structural integrity, such as refrigerator shelves and other housewares, etc., and High Impact Polystyrene (HIPS), which can withstand greater impact than GPPS thanks to the addition of Butadiene Rubber. Both types of PS are compatible with Injection Molding and Sheet Extrusion processes.



• Expandable Polystyrene (EPS)

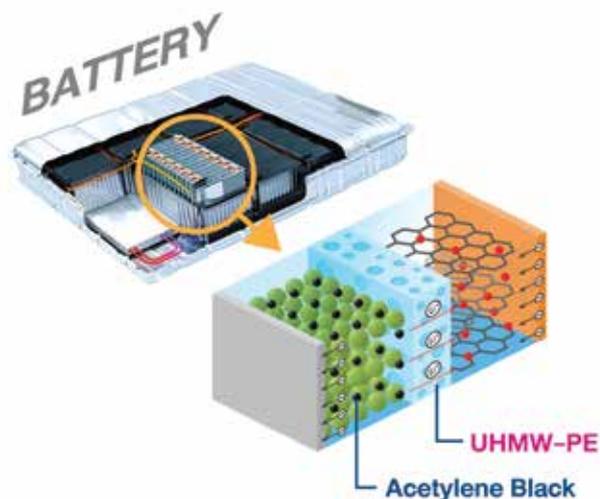
IRPC mainly uses Styrene Monomer as feedstock for its EPS, with Pentane gas as the blowing agent. The company uses no ozone-depleting CFCs. EPS has the following applications:

- **Packaging**, such as shock-absorbing material in electrical appliance packaging, etc.
- **Blocks**, such as insulation blocks in the fishing industry's cold storage and modern construction to save energy consumption in cooling, soundproof against external noise, reduce the structure weight as well as lower construction cost, etc.

4. Specialty Products

IRPC stresses the importance of continuous research and development through Self-Development to cater to customers' diverse requirements in the rapidly changing economic environment. The company aims to meet customers' every need and expectation through eco-friendly approach.

- **Ultra-High Molecular Weight Polyethylene (UHMW-PE):** is an opaque white powder with as much as 10 times the molecular density than other PE varieties. It can be subject to a range of treatments, such as Compression, RAM Extrusion, and Gel Spinning, etc. Thanks to superior properties to those of iron joints and gears, UHMW-PE is suitable for a range of applications that require toughness, strength, and resistance to abrasion and chemical erosion.
- **Polypropylene Nonwoven** Polypropylene (PP) plastic pellets are developed for molding through a fiber manufacturing process. PP's quality providing that its density is lower than other plastic types, leads to a part which uses less raw materials and is lightweight. It also saves energy in a manufacturing process because of its low melting point. Therefore, it is popular to be manufactured for daily-life or single-use products such as disposable diapers, face masks, surgical gowns, veils, wet wipes, hospital bedspreads, and industrial shoe covers.



- **Paralene:** is a bio compound polystyrene plastic, consisting of 20 per cent natural materials to reduce the use of petroleum-based materials in the production process. Paralene passed the FDA standard test and can be recycled just like general polystyrene plastic.
- **Chlorine Resistance Pipe:** The plastic pellets used for the production of high-pressure water supply pipes are resistant to chlorine-associated corrosion. This prolongs the service life of water supply pipes, reduces maintenance cost and ensures that drinking water is free from contaminants from corrosion.
- **Polypropylene Random Co-polymer Medical Grade:** Transparent Polypropylene (PP) pellets developed specifically for medical equipment and related applications. Certified for international standards, such as FDA US21 CFR 177.1520 of the United States, EU No. 10/2011, and European Pharmacopeia 3.1.6 as well as USP Class VI of the European Union.
- **Pim-L and Pim-AL:** Special-grade Acetylene Black products developed jointly by IRPC and the NSTDA specifically for use as a Carbon Conductive Additive in lithium-ion battery applications.
- **Post-consumer Recycled Compound:** is made with used plastics that have been modified and thus have properties comparable to virgin plastic pellets. Available in PP and PS, this type of compound can help solve plastic waste problems and reduce environmental impact.

Domestic Polymer Producers and Capacities in 2022

Product	Company	Capacity (Unit: Thousand Tons)	%
HDPE	IRPC Plc	120	6
	Thai Polyethylene Co., Ltd.	1,000	52
	PTT Global Chemical Plc	800	42
	Total	1,920	100
PP	IRPC Plc	775	33
	HMC Polymers Co., Ltd.	830	36
	Thai Polypropylene Co., Ltd.	720	31
	Total	2,325	100
ABS	IRPC Plc	180	66
	Ineos ABS (Thailand) Co., Ltd.	95	34
	Total	275	100
EPS	IRPC Plc	48	100
	Total	48	100
PS	IRPC Plc	120	33
	Siam Polystyrene Co., Ltd.	150	42
	GC Styrenics Co., Ltd.	90	25
	Total	360	100

Feedstock Procurement

The main feedstock for IRPC's production is crude oil. The company procures most of the crude oil from the Middle East through PTT and purchases some crude on the open market. In addition, the company also procures crude from domestic sources, which offer lower prices and transportation costs. Crude oil from abroad is transported by large crude oil tankers to the deep seaport located

in the same area as IRPC's refineries and production complex and fed into the company's production process, making feedstock management more efficient.

In 2022, IRPC's purchase of crude oil as feedstock accounted for 81% of its total raw materials. Sources of its crude oil are as follows: Middle East (Saudi Arabia, UAE, etc.) 73%, the Far East 5%, domestic sources 4%, and from other regions 18%.

Feedstock Purchased in 2022

Feedstock	Volume		Value		% of Value ⁽¹⁾	
	Metric Ton	%	Million Baht	%	Domestic	Overseas
Crude oil	8,335,489	80.86%	231,966	78.31%	3.36%	96.64%
Diesel	472,652	4.59%	18,435	6.22%	100.00%	0.00%
Natural gas	460,755	4.47%	10,128	3.42%	100.00%	0.00%
Jet Fuel	311,594	3.02%	11,346	3.83%	100.00%	0.00%
Light naphtha	151,907	1.47%	4,094	1.38%	30.50%	69.50%
Benzene	99,535	0.97%	3,480	1.17%	100.00%	0.00%
Biodiesel B100	78,436	0.76%	3,778	1.28%	100.00%	0.00%
Propylene	50,240	0.49%	1,736	0.59%	33.29%	66.71%
Ethanol	37,134	0.36%	1,273	0.43%	100.00%	0.00%
Acrylonitrile	23,001	0.22%	1,372	0.46%	100.00%	0.00%
Others	287,524	2.79%	8,608	2.91%	82.13%	17.87%
Total	10,308,267	100.00%	296,216	100.00%	22.45%	77.55%

Notes: ⁽¹⁾ Share of value of crude oil is by source, while those of other feedstocks are by supplier country.

Privileges under Investment Promotion Certificates

IRPC has been granted promotional privileges from the Board of Investment under the Investment Promotion Act B.E. 2520 for the following activities: Production of Compounded Plastic, Combined Heat and Power (“CHP”) Project, the Propylene (“PRP”) Project, EBSM Upgrading for ABS Specialties (“EBSM”) Project, Multi Product Pipeline (“MPPL”) Project, Polypropylene Resin (“PPE”) Project, Polypropylene Compound (“PPC”) Project, High Pressure HDPE Compound Project, project to improve production efficiency for energy efficiency of the refinery (“UHV”), the Floating Solar Project, and the PP Meltblown Project, which can be summarized as follows:

(1) Exemption from import duties and taxes for raw materials and essential materials, including machinery approved by the Board of Investment.

- (2) Exemption from corporate income tax on net profits derived from the promoted business operation for a period of 5–8 years, from the date of earning income.
- (3) the promoted business operation for a period of 5 years from the date of expiration of the benefits under (2), and
- (4) Double deduction from taxable income of the costs of transportation, electricity, and water supply for 10 years from the date of earning income from the promoted business operations.

In 2022, IRPC recorded revenue from sales (according to the separate financial statements) from business operations under investment promotion privileges, totaling Baht 19,687 million, a decrease of 85 per cent from the previous year. Of this, domestic sales accounted for Baht 12,597 million and overseas sales Baht 7,090 million.



Market Overview and Industry Outlook

Crude Oil Market and Situations in 2022

Dubai Crude price averaged USD 96.3 per barrel in 2022, a steep climb from 2021 by approximately USD 27 per barrel. Although the average price surged, oil prices fluctuated greatly. Initially, the OPEC Plus adopted a policy to gradually increase production in line with the steady rise in oil demand in the aftermath of COVID-19 pandemic. After the outbreak of war between Russia and Ukraine on February 24, 2022, the market expected Russia's oil and gas exports to be hit with devastating impact from Europe and US economic sanctions. Crude prices shot up and peaked at USD 120 per barrel in June 2022. By early Q3, prices began to settle lower on recession fear following widespread high inflation around the world. Central banks hiked interest rates in response. The Federal Reserve announced 7 consecutive rate increases, totaling 4.25 per cent to a range of 4.25-4.50 per cent. The US released its Strategic Petroleum Reserve (SPR) to dampen oil prices to cushion impact of runaway inflation. Throughout the year, up to 200 million barrels of oil from the SPR had been released, cutting back the oil reserve to about 380 million barrels, the lowest level in 40 years. Meanwhile, prices continued to decline in Q4 due to COVID-19 resurgence in China, pushing back the recovering demand. The closing oil prices in December

were at the lowest of 2022 at approximately USD 77 per barrel. In addition, the war between Russia and Ukraine resulted in an extremely high crude premium, directly affecting the cost of crude oil that the company purchased as feedstock for its oil refining business.

Crude Oil Price Forecast for 2023

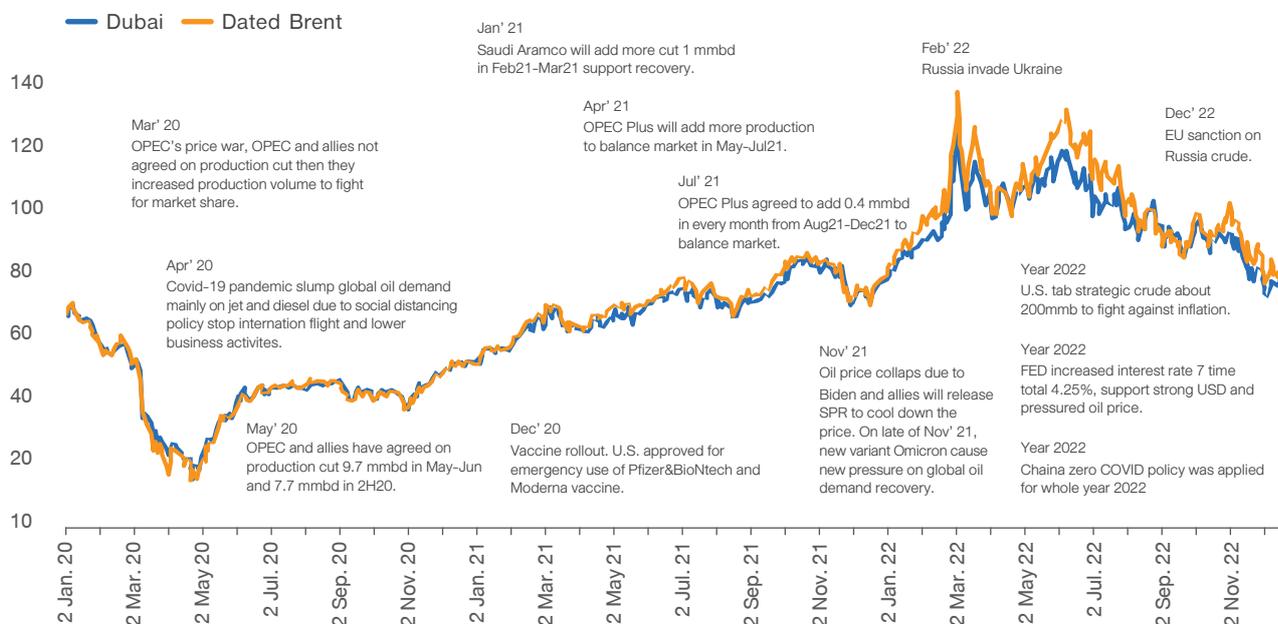
Dubai crude spot price will likely move in the USD 85-95 per barrel range, buoyed by optimism over the lifting of COVID-19 restrictions by countries around the world. Oil demand is expected to increase, especially in China, the world's single biggest net oil importer, which is expected to drive crude oil prices. Oil supply is expected to remain tight as the spare capacity of the OPEC Plus amounts to only 3-4 million barrels per day. US production is expected to rise gradually as US shale oil producers focus on maximizing profits rather than boosting capacity as in the past. US production is expected to reach 13 million barrels per day, which is the highest pre-COVID-19 level. In addition, the US crude oil stocks remain at an extremely low level, posing a risk in the event of a supply disruption.

Issues that must be closely monitored include rising demand after China lifted COVID-19 restrictions, high inflation that could lead to a recession, and the impact of Europe and US economic sanctions against Russia, as well as the direction the Russian-Ukrainian war takes.

Factors Affecting the Price of Crude Oil in 2022

Crude Oil Price

(Unit: USD/bbl)



Source: Platts & Reuters

Petroleum Market and Situations in 2022

The Fuel Consumption Situation

The overall situation of fuel consumption in 2022 averaged out at 151.16 million litres per day, a 13.50% increase compared to the same period of 2021 - The diesel fuel consumption rose by 15.70% The civil aviation fuel or jet fuel (Jet A1) consumption rose by 91.60% The fuel oil consumption rose by 15.70% The LPG consumption rose by 5.90% and the NGV consumption rose by 8.90% The gasoline consumption rose by 3.90% while the kerosene consumption dropped to 15.90% - gave a broad overview of a continuously growing need for fuel consumption from foreign tourists interested in travelling to Thailand as well as Thai people travelling across cities more, particularly around the end of the year which was time to celebrate the New Year festival.

The gasoline consumption in 2022 averaged out at 30.16 million litres per day, a 3.90% increase compared to the same period of 2021. The consumption of gasohol 91, gasohol 95, and gasohol E85 rose by 7.02 million litres per

day, 16.28 million litres per day, and 0.83 litres per day respectively; while the consumption of gasohol E20 and gasoline dropped to 5.50 million litres per day and 0.52 million litres per day respectively.

The diesel consumption in 2022 averaged out at 73.05 million litres per day, a 15.70% increase compared to the same period of 2021, as a result of an aid measure to freeze its price not exceeding 35 Baht per litre as part of a measure to reduce an exercise tax rate of diesel fuel until May 20, 2023, and the use of fuel fund mechanism in order to alleviate trouble of people and the private sector under the circumstances of the fluctuations in energy prices worldwide. The high-speed diesel B7 consumption rose by 63.88 million litres per day and the diesel base rose by 6.70 million litres per day. Meanwhile, the regular high-speed diesel consumption dropped to 2.29 million litres per day and the high-speed diesel B20 consumption was 0.19 million litres per day because a minimum proportion of blending biodiesel with high-speed diesel was the same in every fuel type.

The diesel consumption in December, 2022, averaged out at 77.91 million litres per day, a 1.20% increase compared

to the same period of 2021. The diesel consumption in the electricity industry was 5.38 million litres per day, a 179.70% increase compared to the same period of 2021, as a result of generating electricity instead of expensive natural gas.

The civil aviation fuel or jet fuel (Jet A1) consumption in 2022 averaged out at 8.95 million litres per day, a 91.60% increase compared to the same period of 2021, because a number of tourists interested in travel to celebrate the New Year festival, particularly in December, led to a positive trend in a need for the civil aviation fuel consumption.

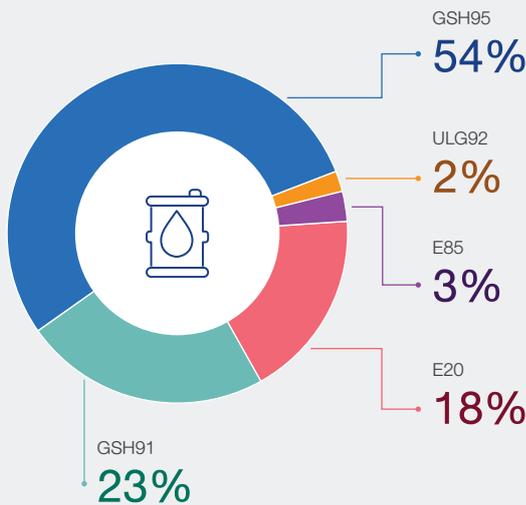
The LPG consumption in 2022 averaged out at 17.49 million litres per day, an 5.90% increase compared to the same period of 2021, because the increasing consumption in all sectors. The transportation sector accounted for 2.19 million kilograms per day, a 25.70% increase. The industrial sector accounted for 2.03 million kilograms per day, a 8.60% increase. The petrochemical sector accounted for 7.54 million kilograms per day, a 3.90% increase, and the

household sector accounted for 5.74 million kilograms per day, a 1.60% increase.

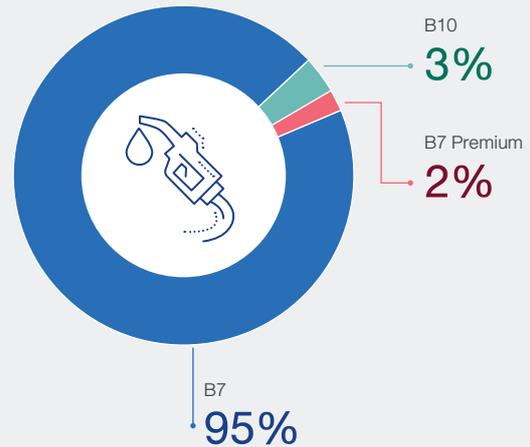
The importation of fuel in 2022 averaged out at 991,268 barrels per day, a 10.40% increase compared to the same period of 2021. The importation of crude oil accounted for 913,297 barrels per day, a 5.80% increase. The value of crude oil imports accounted for Baht 104,790 million per month, a 72.70% increase, for the importation of refined petroleum products (gasoline base, diesel base, fuel oil, aviation fuel or jet fuel, and LPG). It increased to 77,971 barrels per day. The total value of imports was calculated as Baht 7,412 million per month.

The exportation of refined petroleum products in 2022 covered gasoline, diesel, fuel oil, aviation fuel or jet fuel, kerosene, and LPG. The number of exports accounted for 159,414 barrels per day, a 21.50% decrease. The total value of exports was calculated as Baht 20,155 million per month, a 33.10% increase.

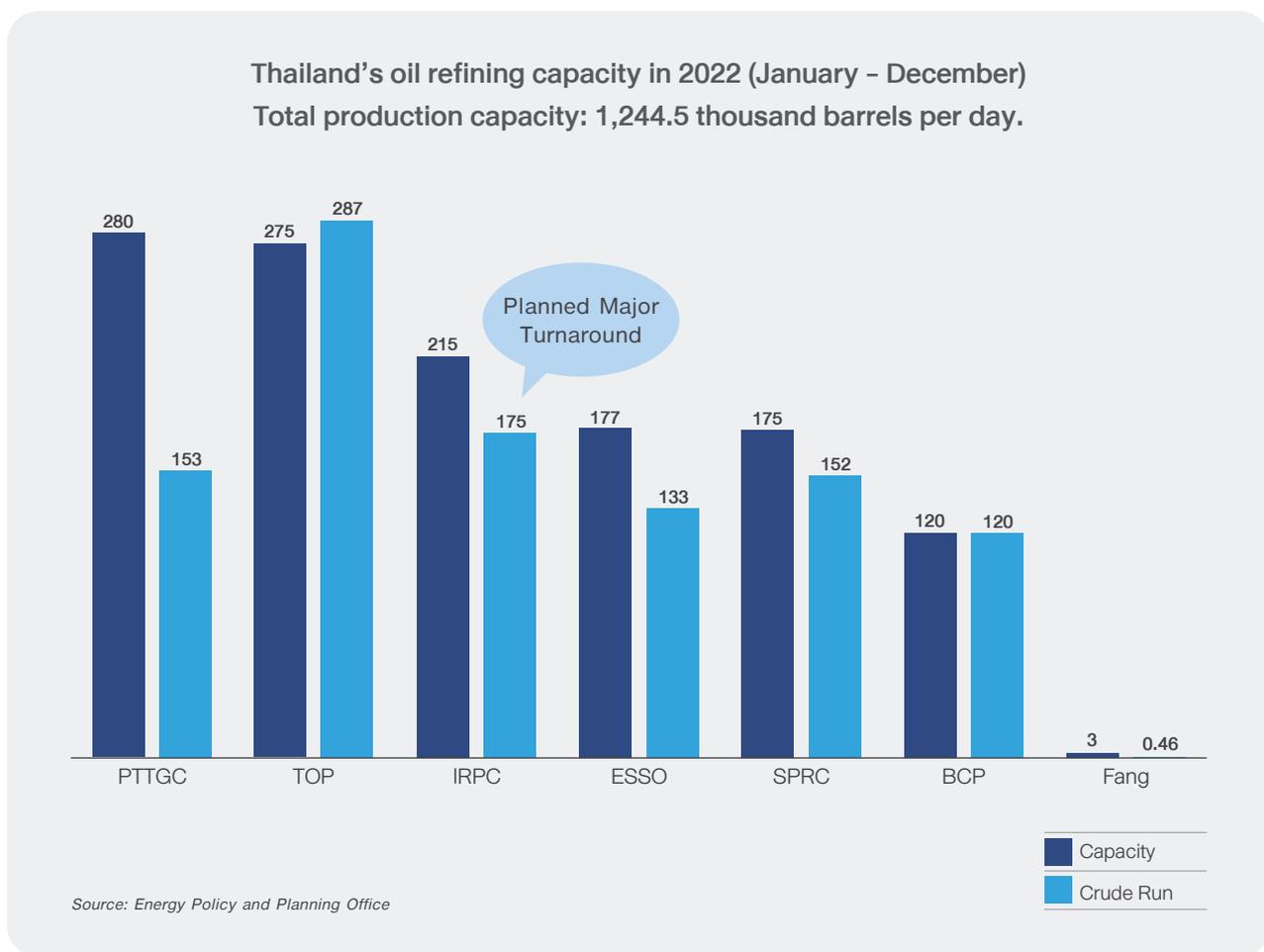
Proportion of gasoline consumption



Proportion of high-speed diesel consumption



Source: Department of Energy Business - January - December 2022



Major operators in Thailand's oil industry include PTT, Esso, Bangchak, Shell, Chevron, and others, with domestic market share as follows:

Operator	Domestic market share
1. PTT	39.6%
2. Bangchak	10.9%
3. Esso	10.5%
4. Thai Oil	7.0%
5. Shell	6.7%
6. IRPC	4.2%
7. Others small operators	21.1%

Source: Department of Energy Business (January - December 2022)
 IRPC's domestic market share in which only sales of products under self-distribution were calculated - excluding sales to Section 7 traders.

Petroleum Industry Forecast 2023

PTT Prism Experts, together with the Petroleum Refining Industry Club, forecast that the overall 2023 energy situation will continue to be volatile as the result of geopolitical uncertainty and the use of fiscal policies to try to stabilize the global economy. The average Dubai crude price is projected at USD 85-95 per barrel, down from 2022's USD 99 per barrel, due to economic recovery that is expected by the second half of 2023 while Russia's oil supply may disappear from the open market following Europe's total embargo on Russian oil in late 2022. In the meantime, OPEC Plus is expected to cooperate to stabilize oil prices. It remains to be seen if other producers are capable of increasing production to make up for the shortfall in supply from Russia, while the possibility of lifting oil embargo on Iran and Venezuela can become a game changer to boost crude oil supply to the market.

Source: Webinar 2022, The Annual Petroleum Outlook Forum: Thriving amid Global Energy Volatility towards Sustainable Future

Petroleum Business

Distribution Channels

IRPC focuses on producing fuels that meet the demand of its customers, in compliance with the standards of the Ministry of Energy. It also emphasizes distribution through the most profitable channels. The price of IRPC's fuels corresponds to the market situation. The company works closely with its subsidiaries to devise the most beneficial marketing and sales strategies.

IRPC's Customers and Distribution Channels are as follows:

- Transportation operators, public transport operators, construction companies, among others, as well as sale to IRPC subsidiaries.
- Wholesales/Jobber, large and small, for distribution to other direct-sale operators and retailers.
- Section 7 Traders, large and medium traders with their own oil depots who distribute the fuels through their own networks and distribution channels to the end users.
- Exports, categorized into maritime exports to key markets in Asia, such as Singapore, Cambodia, and Vietnam, as well as overland exports to countries in Indochina, like southern China, Cambodia, Laos, and Myanmar. In 2022 IRPC's export sales accounted for 37 per cent of its total sales.
- Bunker, which refers to sales of Automotive Diesel Oil (ADO) to ships docking at IRPC's terminals.
- Fishery, which refers to sales of green diesel to the association of fishing fleet operators in territorial waters.

Channel	%
1. Wholesale	18%
2. Exports	37%
3. Section 7 Trader	42%
4. Industry	3%

Source: Petroleum Business Department, IRPC Public Company Limited

Competition Strategy

IRPC's primary sales strategy is to emphasize the quality of its clean petroleum products manufactured through processes that meet high standards backed by good services via advanced real-time order processing system, PDA on Mobile, on the IRON platform. In addition, the company strives to increase market share and sales volume while maintaining suitable marketing margins. Services provided by IRPC to its customers are as follows:

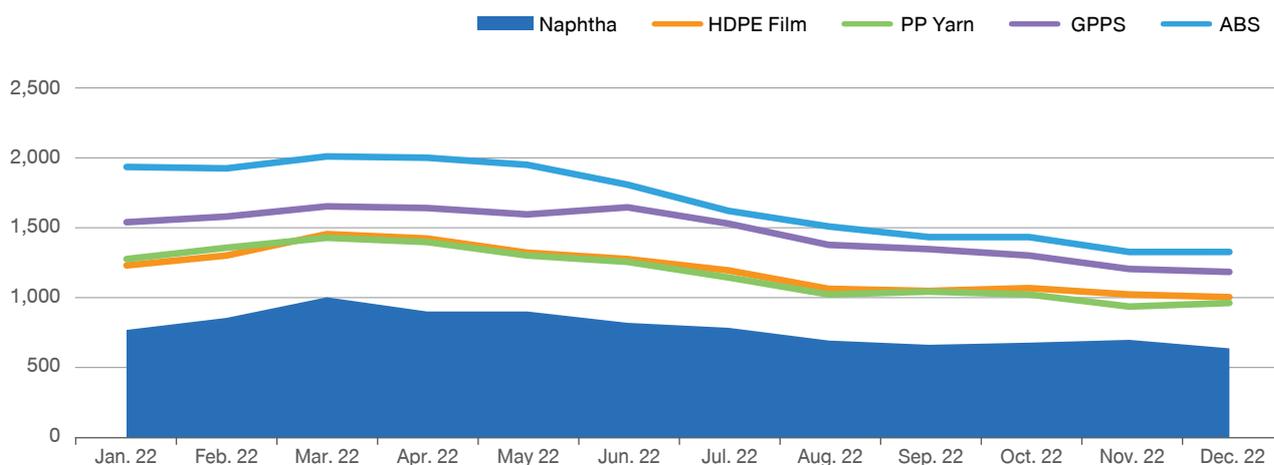
- **Oil Depots** IRPC operates 6 oil depots to cater to customers in all parts of the country, with round-the-clock services at Rayong and Phra Pradaeng depots and additional fuel distribution point at IRPC Surat Thani Depot in Surat Thani Province to expand customer services to middle and lower southern regions.
- **Transportation** IRPC operates fuel tanker trucks throughout the country, along with tanker vessels and berthing terminals for maritime customers.
- **Service Personnel** Customers have access to dedicated teams of sales agents, sales coordinators, and sales services department, along with ticketing services for processing of sales orders from customers through SAP software, which allows online data to be updated on real-time basis to ensure accuracy and standardize processes, leading to enhanced efficiency and eliminating redundancies. Executives and operating staff at all levels can use the data obtained for further analysis, decision-making and management. IRPC has also introduced the IRPC Oil on Net via the IRON platform developed to manage the distribution and sales of petroleum products electronically. IRON combines IRPC's sophisticated supply chain management with its total business solution approach to respond to customers' requirements for transaction convenience and augment IRPC's business efficiency. With continuing development, the system will be expanded in phases to cover the company's other sales channels.
- **Quality Inspection** IRPC's technical staff provides solutions and relevant knowledge to customers. They also inspect the quality of products and services at all stations and depots to ensure quality that customers can trust.

Petrochemical Market and Situation in 2022

The petrochemical industry in 2022 registered a paltry growth rate of less than 1 per cent, which was even lower than those of the preceding two years when an uptick in demand was observed when the COVID-19 situation eased up. The low petrochemical demand in 2022 was attributed to impacts from the protracted Russian-Ukraine war, causing energy and food prices to increase sharply leading to high inflation throughout the world. Central banks in many countries, particularly the US, EU countries and the UK, adopted tighter fiscal policies and hiked interest rates to record levels, ushering in sluggish growth trends. The increase in interest rates by the US Federal Reserve also result in weakening of Asian currencies against the USD. To make the matter worse, the Chinese government's Zero-COVID policy and strict travel restrictions measures, leading to periodic lockdowns in the country's key economic cities from April 2022, posed impediments to the manufacturing and transportation sectors. This also dampened China's domestic consumption while at the same time the demand for manufactured goods in the world market fell as consumers' purchasing power declined and households reined in their spendings. Nevertheless, the eventual lifting of travel restrictions by Thailand and other countries brought about a steady recovery of the service sector, especially tourism and related industries, such as food packaging and industrial segments relating to personal hygiene and medical equipment, etc. On the supply side, despite gain in additional production capacities in Asia and the Pacific, particularly in China, Vietnam, Indonesia as well as Thailand, the overall supply did not increase significantly. Most petrochemical producers cut back on their outputs as profit margins narrowed at a time when product costs associated with energy and feedstock prices edged up due to the disruption in global supply chain caused by the Russia-Ukraine war. Most producers also reduced or postponed their orders as they found themselves unable to pass on higher costs to the destination markets.

The Prices of Petrochemical Products and Polymers

(Unit: USD/Ton)



Source: ICIS

On prices of petrochemical products and plastic pellets in 2022, the average price of Polypropylene (PP) was USD 1,181/metric ton, down from the previous year by about 10 per cent. Polyethylene, in this case, High Density Polyethylene (HDPE), averaged at USD 1,203/metric ton, an increase of only 2 per cent from the previous year. The average price of standard grade Polystyrene was unchanged at USD 1,468/metric ton, while the average ABS price dropped sharply by 28 per cent from the previous year to USD 1,692/metric ton. The average Naphtha price was up by about 22 per cent. As a result, the overall product prices declined significantly.

From the abovementioned information, prices of almost all types of products were in decline throughout the year, with the exception of Q1, when prices increased, tracking the rising crude oil and naphtha prices at the outbreak of the Russia-Ukraine war before starting to decline towards the end of Q2 after China's number of COVID-19 cases spiked and Beijing reimposed lockdowns and strict travel restrictions in key cities, dampening domestic demand and put a pressure on prices in China along with Southeast Asia. The weakening of Asian currencies against the USD as a result of the US Federal Reserve's interest rate increases and the inability of most finished goods manufacturers to pass on the already rising costs to end consumers who were pulling back on purchases.

Petrochemical Industry Outlook for 2023

Demand for petrochemical products and plastic pellets is projected to grow by about 1.5-2.0 per cent in 2023 due to China's recovering demand following the lifting of COVID-19 restrictions, and the Thai government's economic stimulus measures, including public sector investment and promotion of domestic spending. China's reopening of borders is expected to benefit the service sector, particularly tourism and travel sector and related industries. Nevertheless, demand will continue to be weighed down by prevailing high inflation, causing consumers to pull back on spending. This may contribute to weakening demand for certain finished goods manufacturing segments. In the meantime, higher production costs attributed to high crude oil and energy prices as the Russian-Ukraine war drags on. The economic sanctions of Russia by the US and EU, along with rising cost of funding due to a series of aggressive interest rate hikes that may be stabilizing at high level. On the supply side of petrochemical products in the Asia-Pacific region, a steady growth is expected in China, Indonesia, Malaysia, and Thailand. Some of such growth projections may be attributed to implementation of new projects postponed from 2022. China's demand for petrochemical imports and plastic pellets is expected to drop further under its policy to expand domestic production capacities. This may lead to a supply glut in the region leading to even more intense competition.

In addition, the industry must also adapt to prepare for trade restrictions linked to climate change, as many countries

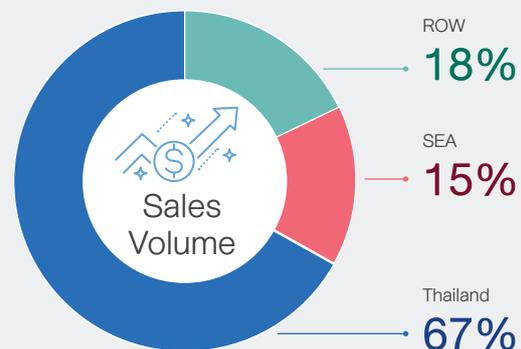
have set ambitious targets to reduce emissions of carbon dioxide and other greenhouse gases from the energy and manufacturing industrial sectors. The US and EU will be introducing rules restricting import of manufactured goods with large carbon footprint, which include petrochemicals and other products in the manufacturing supply chain. This will compel petrochemical-related business operators to make significant adjustments to comply with such climate action requirements.

Petrochemical Business

Distribution Channels

In 2022, IRPC focused mainly on the domestic market, which accounted for 67 per cent of total sales. Such sales volume was achieved through 18 authorized distributors under official distributor appointment agreements. These distributors are highly skilled, capable of providing customer services, including direct sale to a select group of reliable customers with a good credit history. This helps the company respond more quickly to customer requirements. The remaining one-third of sales were for the export markets, with emphasis on Southeast Asia or ASEAN, which registers a steady growth for plastic pellets. In 2022, IRPC exported 15 per cent of its total plastic pellet sales to this market.

2022 Petrochemical Sales by Market



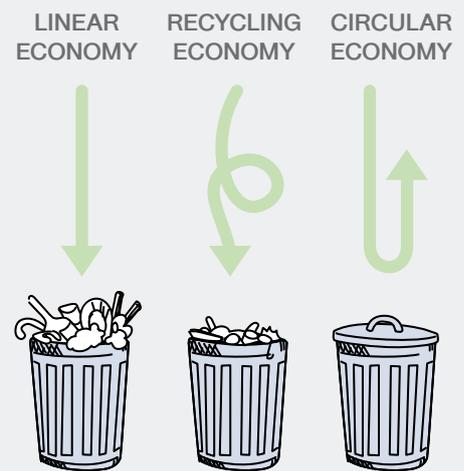
Source: Petrochemical Marketing Department, IRPC Public Company Limited

Competition Strategy

IRPC has achieved a delicate balance to address the needs of all stakeholders throughout the supply chain and consumers. With its customer-centric approach, the company seeks to understand and take into consideration the entire customer journey. IRPC sees itself as a Solution Provider that walks the customer through sales presentation, customer services, consultation on raw material selection, production, use case testing, product development, problem-solving and a range of after-sale services to increase efficiency and quality to the finished goods as well as to ensure customer satisfaction and convenience.

IRPC focuses on developing new market in industrial segments with high growth potential, such as those relating to medical and healthcare, automobile, specifically electric vehicles, electronics, and appliances, etc.

The company has also implemented various projects based on the sustainability concept to ensure operational efficiency through resource management, reduction of waste output, Re-material, Make Use Return as part of the effort to conserve depleting natural resources and make waste disposal redundant. In 2022, the company cooperated with PTTOR through the retail shop business and FIT Auto by bringing waste, such as coffee grounds, used aluminum foil coffee pouches from Café Amazon, or used plastic battery cases, motor oil containers, etc. as raw materials to produce environmentally friendly plastic products, such as furniture, tools, or decorative items. This is our way to take responsibility for the production process and to foster environmentally friendly consumption, including developing supplies use in the retail shops using biodegradable materials to reduce the burden of environmental management.



In addition, IRPC's petrochemical operations cooperated with GEPP Sa-Ard to organize training sessions on waste separation for the working group of the Mirror Foundation, including volunteers and staff members who are the elderly and the homeless. The purpose is to enable the working group to sort different types of waste correctly in a more systematic manner, which leads to increased efficiency and value of plastic waste before being fed into the recycling process.



Price Strategies

Prices of plastic pellets are linked to a range of external factors, from the costs of feedstocks, like crude oil, naphtha, and monomers, to market conditions, demand and supply, domestic, regional, and global competition, product properties and government policies, etc. IRPC prices its products based on these factors to ensure that the price is competitive, aligned with the market positioning of each product, and suitable for the geographical distribution area at any given time.

Product Strategies

IRPC produces a wide range of plastic pellet products, such as HDPE, PP, PS, EPS, ABS and SAN. The company also operates plants to manufacture color compounds and to inject composites within an industrial complex where plants manufacturing diverse types of plastic pellets are located. As all manufacturing plants are under the management of IRPC Group, customers are provided with the added convenience and flexibility to ensure their exacting specifications, such as those for the manufacture of electrical appliances or automotive parts, are met. In addition, the company also pays attention to product research and development to design plastic pellet properties to meet the needs of new market requirements and to solve customers' problems.

Product and Service Quality

IRPC's plastic pellet products are designed and developed to ensure suitability for use in the manufacture of parts and components in accordance with the required characteristics, functions, and specifications of the products, and in compliance with any given standards. Quality checks and quality controls extend across the entire production process, from the moment the feedstocks arrive and during the production process, to product inspection and testing before delivery to the customer.

IRPC has continually developed and improved its internal processes in order to comply with the requirements of various standards that are widely accepted and required by customers, such as Quality Management Standards (ISO 9001), Environmental Management Standards (ISO 14001), Occupational Health and Safety Management System (ISO/OHSAS 18001), Quality Management System for the Automotive Industry (ISO/TS 16949). In addition, IRPC also provides after-sales services to provide technical advice, logistics options, solutions to problems, recommendations on

plastic pellets suitable for use cases, production techniques, etc. The company also received the Standard for Corporate Social Responsibility (CSR-DIW) from the Department of Industrial Works for its plants manufacturing Ethylene, Polyethylene, Polypropylene, Polystyrene pellets.

Communication and Marketing

IRPC has devised a marketing communication plan to promote its plastic pellet products under the brand "POLIMAXX" for sustainable growth. The aim is to create top-of-mind awareness among select groups of customers and consumers. Such marketing communication is conducted through popular offline and online channels, including social media platforms, POLIMAXX FB Fanpage, Instagram and TikTok, to promote products, build customer relations and positive brand and corporate image.

In 2022, the company updated POLIMAXX Branding under the concept "Make Greater Things" for better living based on our conviction that innovation can be a good thing for everyone provided that the delicate balance to coexist with the Earth is achieved and maintained. Special attention needs to be paid to the potential adverse impact of the use of materials and energy both between business partners and customers and the environment in the short and long term. POLIMAXX seeks to reassure both existing customers and to reach out to new customers, enabling customers and partners to expand their businesses, manufacturing products with distinctive properties for product differentiation while providing solutions for a good and eco-friendly life. The newly designed POLIMAXX logo is characterized by a modern outlook that conveys creativity and eco-friendliness. The two-tone logo, with




World Changer

Deep Ocean Blue

representing the environmental World Changer mindset that tells the story of the manufacture of plastic pellets that meets exacting standards with zero impact to the environment.



Energy

Energetic Orange

full of vitality denoting a sense of fun, adventure, and boundless creativity.

IRPC has also organized marketing events to foster close relationships and promote good corporate image with customers, the society and communities, such as **'THAILAND'S BEST MEDICAL MASK DESIGN CHALLENGE'** in quest of the best face mask prototype for Thai people targeting students and members of the public, publicity campaign for IRPC's new products, including PP Spunbond and PP Meltblown, as well as providing a full range of services. Seven student teams were selected to participate in the design competition to create new face mask designs, evaluated by a panel of judges led by a top creator, Mr. Atom Pakon from Atompakon Channel, who has an impressive portfolio of creative works as a painter and writer, together with experts from Vajira Lab for Society and partners from POLIMAXX.



POLIMAXX WEBINAR 2022 'Exploring the Future of the Thai Economy' A web seminar to inform customers and the general public about the updated POLIMAXX branding to help them understand the new direction of the petrochemical industry as well as global economic trends and Thai economic outlook for 2022 and the changing direction of Blockchain technology that will transform financial transactions and industry sectors as a guideline for adjusting business operations to correspond with current and future situations.



'WITH LOVE AND CONNECTION' A fun-filled event to spread happiness and joy as well as to make a lasting impression on IRPC's domestic distributors, complete with live music by well-known entertainers, party games and sumptuous banquet.



Trade show booth at K-FAIR 2022 “The World’s No.1 Trade Fair for Plastics and Rubber” in conjunction with Click Plastics, our trade partner in Germany, at Messe Dusseldorf, Germany on October 19-26, 2022, to expand the customer base around the world as well as communicating the concept of Make Greater Things for better living.



“POLIMAXX: GROW TO GREATER MAKE GREATER THINGS TOGETHER”

To officially announce the updated “POLIMAXX” branding and to unveil the mascot “Nong MAXXI,” representing the inventor who can turn every bright idea into a business opportunity, ready to take off in the fascinating petrochemical world in search for innovations that make our world a better place.

Customer Appreciation Events “The Emerald of Andaman” for domestic distributors and customers and “IRPC-Luxury Trip in Phuket” for domestic customers to thank them for their longstanding trust and loyal support for the company’s



petrochemical products throughout 2021-2022, and to strengthen good relationships between customers and the company’s executives.

Marketing and Competition in Power and Utilities Business

The power and utilities business has been adversely affected by the outbreak of Russia-Ukraine war, driving up power and steam production costs significantly. Under the government's policy, power producers are subject to price control on the electricity rates they charge to industrial users. Thus, power producers had to bear the cost of electricity generation that was higher than the rate they charge to consumers. The steam production for industrial users bore the brunt of rising production cost due to the sharp increase in natural gas prices as the result of supply shortage attributed to the Russia-Ukraine war. The impact from such conflict is being felt far and wide, triggering high inflation throughout the world. IRPC's customers have also been affected by the steam price increase.

According to IRPC's forecast, the power and utilities business is expected to recover in 2023 as the government decided to spend more on power subsidies for industrial users than the previous year. As for other market conditions, the adverse effects from the protracted Russia-Ukraine war will continue to be present. However, the company has closely monitored the global situation and deployed the entire range of risk management mechanisms to deal with uncertainty in 2023.

Marketing and Competition in Port and Storage Tank Businesses

The COVID-19 pandemic situation eased up in 2022 as vaccination rollout reached most of the population. The economic recovery began in earnest and a number of large industrial plants became operational in this region. Imports and exports rapidly resumed growth, contributing to increased maritime traffic and greater demand for port and storage tank services.

Port Business

Positive factors relating to the government's investment in infrastructure projects, as part of an economic stimulus package to ensure a strong recovery. COVID-19 has been brought under better control as mass vaccination gathered momentum. The country's tourism and the service sectors were expected to stage a solid comeback, encouraging more investments.

Storage Tank Business

IRPC is in the process of upgrading storage facilities to accommodate additional types of products. The company's investment plan calls for an upgrade in pipelines and storage tanks to better utilize existing assets. Once completed, the storage facilities will be able to provide external customers with storage tanks for crude oil, special-grade diesel as well as primary chemical products.

In 2022, the storage tank business has benefited from the Department of Energy Business' decision to raise crude oil reserves to 4 per cent, since October 15, 2022 and liquid petroleum gas (LPG) reserves to 1 per cent since January 1, 2023. This led to an increase in demand for storage tanks for legal reserves.

Marketing and Competition in Property Management Business

In 2022, The Cabinet passed a resolution approving no change for land and building tax rates. In Q2 of 2022, the company has paid land and building taxes in full.

As for the development of the WHA Industrial Estate Rayong in collaboration with WHA Industrial Development Public Company Limited (WHAID), the project development experienced a setback in 2020 due to COVID-19 pandemic. This caused a delay in the implementation of the public hearing process. As a result, the project development plan has been delayed.



Operating Assets

Major Fixed Assets

The major fixed assets used in IRPC and its subsidiaries' operations consist of refineries, petrochemical plants, equipment, machinery, and land. As of the end of 2022, the net property, plant, and equipment was worth Baht 111,432 million, as detailed below:

(Unit: Million Baht)

	Property, plant, equipment (cost)	Net value	Obligation
1	Machinery and piping systems	153,355	None
2	Buildings and building improvements	41,710	None
3	Land and land improvements	11,795	None
4	Tools and factory equipment	3,537	None
5	Furniture, fixtures, and office equipment	1,324	None
6	Vehicles	671	None
	Total	212,392	
Add	Assets under construction and assets under installation	9,646	
Less	Accumulated depreciation	(109,995)	
	Allowance for impairment	(611)	
	Total property, plant, and equipment	111,432	

Investment Property

At the end of 2022, IRPC's net investment property, consisting of property and buildings that were not major operating assets, after depreciation and allowance for impairment, totaled Baht 939 million.

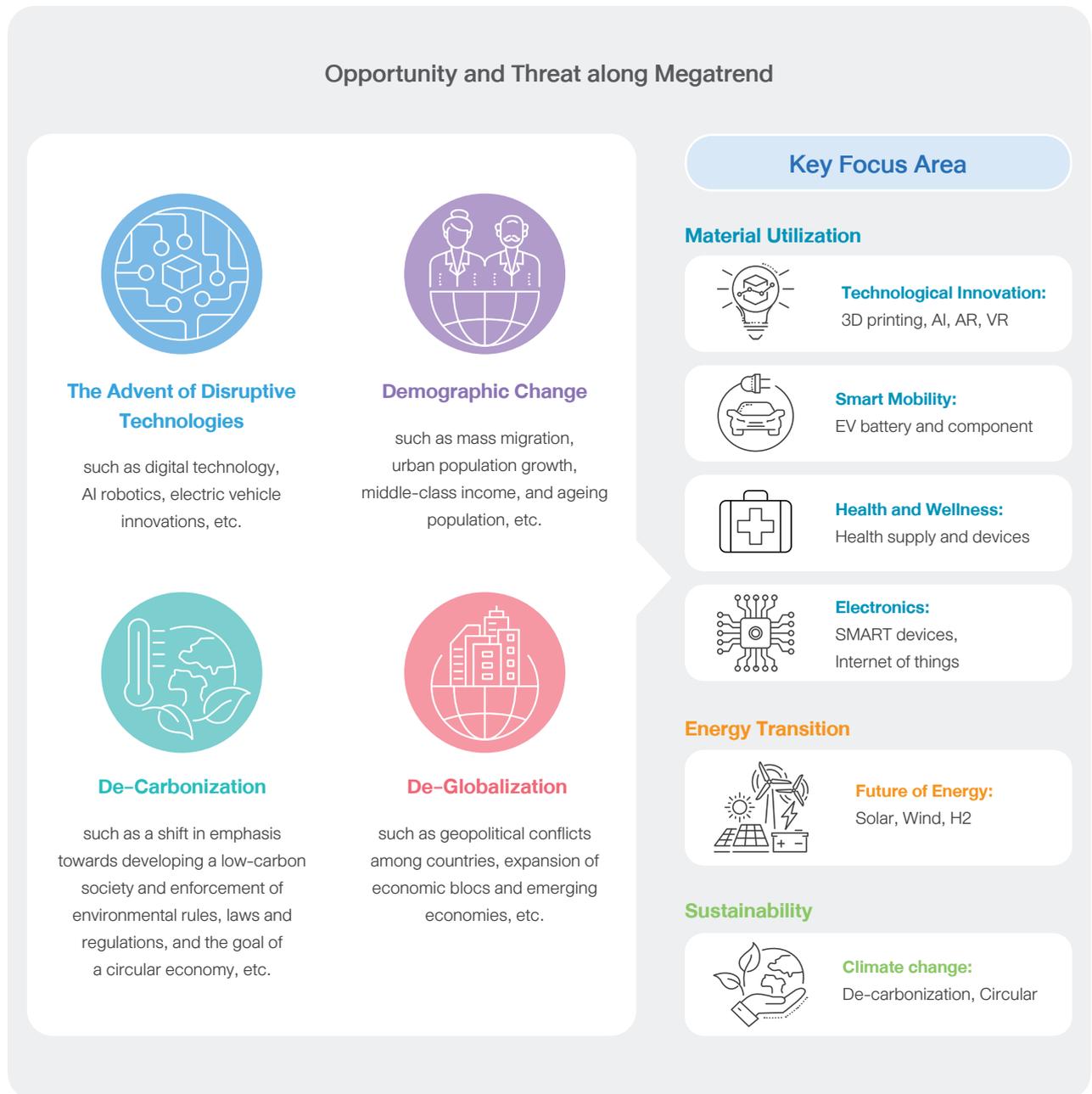
Intangible Assets

At the end of 2022, IRPC's net intangible assets totaled Baht 695 million, consisting of:

1. Net computer software fees of Baht 567 million with amortization periods of 5-10 years.
2. Net dredging expenses of Baht 128 million. This is a sea channel dredging to get the deep sea port ready for cargo ships. Amortization periods were spread over 10-20 years.

Strategic Projects

As the global economy has rebounded from a rock-bottom base in the aftermath of COVID-19 pandemic, further recovery is being weighed down by uncertainty due to a number of factors. Chief among them is the Russia-Ukraine war and rising inflation. Nevertheless, from a long-term perspective, the following Megatrends will continue to move inexorably forward, changing the way we live and do business:



To live up to its vision and mission, IRPC has devised a strategic framework and business direction with an emphasis on Core Uplift, based on expertise in its existing businesses with the current value chain and diversify into Adjacent Businesses and to be on the lookout for Step Out Businesses. All this with the aim to drive growth under the new vision and mission to transform IRPC into an innovative company that provides Sustainable Material and Energy Solutions.

Our approach to growth is focused on developing innovation and creativity to meet the needs of customers and partners through material and energy innovations as follows:

- **On Material Solutions** such as Advanced Materials, Medical, Health & Life Sciences and the Circular Economy.
- **On Energy Solutions** such as Future Energy and Energy Storage.

IRPC's investment guidelines for future growth focus on collaboration with partners, customers, and business allies, both domestic and international, through JV, M&A, New S-curve, Start Up, as well as management guided by good governance, taking into account the environment, community, society, and expectations of all stakeholders.



Guidelines for driving strategies in alignment with IRPC's vision are detailed below:

1. **Petrochemical and Beyond** This strategy calls for exploration of new opportunities beyond the Existing Stream, namely petrochemical business, infrastructure, and utilities, and move towards New Streams, such as Health and Life Science and Advanced Materials by stepping into the new Ecosystems or extending the existing business downstream.
2. **Reenergize Resilient Refinery** With focus on energy business management to achieve Resiliency, with capability to respond and deal with volatility and decrease in fossil energy demand in a timely manner, and to maintain competitive edge and profitability as long as the overall oil energy business remain viable.
3. **Innovation Business Growth** With emphasis on new businesses, expansion of existing business scope by diversifying into 5 business segments, namely Health and Life Science, Advanced Material, Circular Business, Future Energy, and Energy Storage, using existing knowledge, adding new expertise and seeking collaboration with business partners.
4. **Sustainability** To conduct our business in parallel with adherence to the 3 C's, or Climate Change, Circular Economy, and Creating Shared Value, which are the pillars underpinning sustainability, through Carbon Inclusive Investment.
5. **Enablers** The company has determined key factors to drive the strategies to achieve results as follows:
 - 1) To revamp budget planning to accommodate investment in new businesses.
 - 2) To apply digital technology to manage and optimize work processes with a view to improving efficiency and safety.
 - 3) To restructure workforce and step up preparedness for personnel development for future growth.



The implementation of our sustainability action focuses on achieving 3 goals, namely

Climate Change: IRPC has set the target to reduce GHG emissions by 20 per cent from the 2018 base year's levels in 2030, to achieve Carbon Neutrality by 2050, and Net Zero emissions by 2060.

Circular Economy: The company focuses on creating Eco-Solutions by transforming and managing waste to create value.

Creating Shared Value: The company aims to increase the True Value that will be delivered to stakeholders.

Key Strategic Projects

IRPC implements three strategic approaches: Core Uplift based on existing internal strength and expertise to expand into Adjacent Businesses in a different value chain, while also on the lookout for Step Out Businesses to drive the company's growth guided by the new vision and mission to transform IRPC into an innovative and sustainable company that offers Material and Energy Solutions. Key strategic projects in 2022 are as follows:

1. Strengthen IRPC Project

by using the Recovery Transformation Service (RTS) investment project management system to improve work processes, focusing on cross functional systems and project tracking tools, including effective personnel management structure leading to an increase in investment project results (ROIC), thereby reducing opportunity loss, improving efficiency of inventory management and tax management through projects eligible for investment promotion incentives and privileges.

2. Specialty Product Project

IRPC aims to increase the proportion of Specialty Products in its product portfolio from 20 per cent in 2021 to 55 per cent in 2030. In 2022, the company exceeded the 22 per cent goal. In addition, the company stresses the importance of product development to increase added value, such as PP Medical Grade products, for which the company has been granted EU and US quality standard certification. The company has also developed PP Compound in collaboration with Mytex to gain entry to the electric vehicle industry. Specialty products for specific industries, such as PPR pipes are in the product testing stage, while HIPS is pending preliminary study to develop extra-strength grade of products that can withstand high impact targeting electrical appliance manufacturers, and HDPE 100 RC pipes pending product certification, etc.

3. Nonwoven Fabric Production Project

IRPC has established Innopolymed, a joint venture between the company holding 60% stake and Innobic (Asia) with 40 per cent, to build a Nonwoven fabrics factory, to gain entry to the Medical Consumables market. The factory became operational in 2022.

4. Ultra Clean Fuel (UCF) Project

To produce Euro 5-compliant diesel to meet the government's new emission standards as well as to improve IRPC's competitiveness in domestic and foreign markets that require higher quality diesel. The Board of Directors has approved the Final Investment Decision (FID) in July 2021. The project is currently under construction and expected to be completed in January 2024.

Financial Strategies

IRPC aims for the efficiency in financial management, namely reasonable and suitable financial structure, funding and financial costs that is able to support the company's operations and investment projects. This also includes complete, correct, and up-to-date information disclosure to shareholders, analysts, investors, financial institutions and the general public on a regular basis. The major financial strategies in 2022 are listed below:

Short-term Loans:

- Renewal of loan agreement between IRPC and PTT Public Company Limited for efficient management of financial liquidity between companies in PTT Group, with a borrowing loan limit of Baht 10,000 million and Baht 1,500 million in lending amount.
- Renewal of Baht 32,340 million Domestic Letter of Credit (DLC) with local financial institutions.

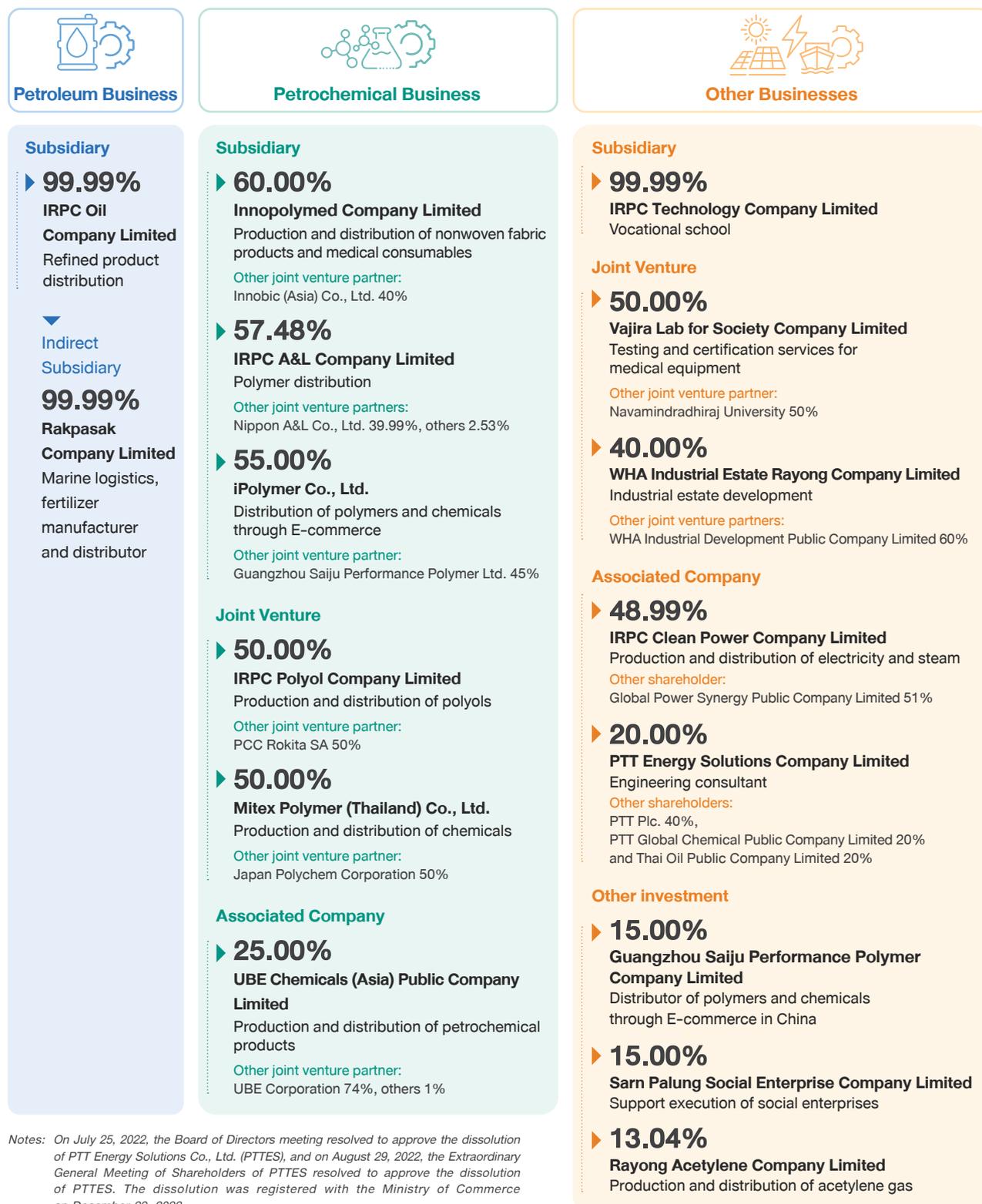
Financial derivatives procurement

Procurement of financial derivatives is one way of structuring foreign-currency finances with loans/ debentures/ derivatives in order to balance the foreign-currency profit (Natural Hedge).

Group Shareholding Structure

Business Structure and Shareholding

IRPC Public Company Limited



Notes: On July 25, 2022, the Board of Directors meeting resolved to approve the dissolution of PTT Energy Solutions Co., Ltd. (PTTES), and on August 29, 2022, the Extraordinary General Meeting of Shareholders of PTES resolved to approve the dissolution of PTES. The dissolution was registered with the Ministry of Commerce on December 29, 2022.

Significant Subsidiaries, Joint Ventures, and Associated Companies

Subsidiaries

Company	Business Type	Shareholding proportion	Paid-up capital (Unit: Million Baht)
IRPC Oil Company Limited Address: 555/2 Energy Complex, Building B, 7 th Floor, Vibhavadi Rangsit Road, Chatuchak Subdistrict, Chatuchak District, Bangkok Tel. 0-2765-7000, Fax 0-2765-7001	Refined product distribution	99.99%	2,000
Rakpasak Company Limited Address: 555/2 Energy Complex, Building B, 7 th Floor, Vibhavadi Rangsit Road, Chatuchak Subdistrict, Chatuchak District, Bangkok Tel. 0-2765-7000 Fax 0-2765-7001 <i>Notes: Subsidiaries of IRPC Oil Co., Ltd.</i>	Marine logistics, fertilizer manufacturer and distributor	99.99%	30
IRPC Technology Company Limited Address: 309 Moo 5, Sukhumvit Road, Choeng Noen Subdistrict, Mueang Rayong District, Rayong Province Tel. 0-3802-2835-7	Vocational school	99.99%	750
Innopolymed Company Limited Address: 555/2 Energy Complex, Building B, 6 th Floor, Vibhavadi Rangsit Road, Chatuchak Subdistrict, Chatuchak District, Bangkok Tel. 0-2765-7000, 0-2765-7158	Production and distribution of nonwoven fabric products and medical consumables	60.00%	282
IRPC A&L Company Limited Address: 555/2 Energy Complex, Building B, 9 th Floor, Vibhavadi Rangsit Road, Chatuchak Subdistrict, Chatuchak District, Bangkok Tel. 0-2765-7508, 0-2765-7510, 0-2765-7511, 0-2765-7577	Distribution of polymers	57.48%	10
iPolymer Co., Ltd. Address: 555/2 Energy Complex, Building B, 9 th Floor, Vibhavadi Rangsit Road, Chatuchak Subdistrict, Chatuchak District, Bangkok Tel. 0-2117-3994, 065-717-8856	Distribution of polymers and chemicals through E-Commerce	55.00%	120

Joint venture

Compan	Business Type	Shareholding proportion	Paid-up capital (Unit: Million Baht)
IRPC Polyol Company Limited Address: 555/2 Energy Complex, Building B, 7 th Floor, Vibhavadi Rangsit Road, Chatuchak Subdistrict, Chatuchak District, Bangkok Tel. 0-2765-6666, 0-2765-7000 Fax 0-2765-6677, 0-2765-6701	Production and distribution of polyols	50.00%	370
Mitex Polymer (Thailand) Co., Ltd. Address: 100/60 Sathorn Nakorn Tower, 29 th Floor, North Sathorn Road, Silom, Bangrak, Bangkok Tel. 0-2267-1854	Production and distribution of chemicals	50.00%	120
Vajira Lab for Society Co., Ltd. Address: 3 Khao Road, Vajiraphayaban Subdistrict, Dusit District, Bangkok Tel. 0-2244-3952-4	Testing and certification services for medical equipment	50.00%	28
WHA Industrial Estate Rayong Company Limited Address: 777 WHA Tower, Floors 23 rd - 25 th , Moo 13, Debaratana Road (Bangna-Trad), Km. 7, Bang Kaeo Subdistrict, Bang Phli District, Samut Prakan Province Tel. 0-2719-9555	Industrial estate development	40.00%	710

Associate Companies

Company	Business Type	Shareholding proportion	Paid-up capital (Unit: Million Baht)
IRPC Clean Power Company Limited Address: 299 Moo 5, Sukhumvit Road, Choeng Noen Subdistrict, Mueang Rayong District, Rayong Province Tel. 0-3892-1333 Ext. 4810-4813	Production and distribution of electricity and steam	48.99%	3,362
UBE Chemicals (Asia) Public Company Limited Address: 98 Sathorn Square Building, Office Tower, 18 th Floor, North Sathorn Road, Silom Subdistrict, Bang Rak District, Bangkok Tel. 0-2206-9300 Fax 0-2206-9310	Production and distribution of petrochemical products	25.00%	10,739

Company	Business Type	Shareholding proportion	Paid-up capital (Unit: Million Baht)
PTT Energy Solutions Company Limited ⁽¹⁾ Address: 888 Map Chalood-Laem Son Road, Huai Pong Subdistrict, Mueang Rayong District, Rayong Province Tel. 0-3897-8300, Fax 0-3897-8333	Engineering consultant	20.00%	150

Other investment

Company	Business Type	Shareholding proportion	Paid-up capital (Unit: Million Baht)
Guangzhou Saiju Performance Polymer Ltd. Address: G314, No. 201, Kezhu Road, New and Hi-tech Industrial Development Zone, Science City, Guangzhou, China, 510000 Tel. 020-38033614	Distribution of polymers and chemicals through E-Commerce in China	15.00%	8.9 (Million Yuan)
Sarn Palung Social Enterprise Co., Ltd. Address: 555/1 Energy Complex Building A, 10 th Floor, Vibhavadi Rangsit Road, Chatuchak Subdistrict, Chatuchak District, Bangkok Tel. 0-2537-2971	Support execution of social enterprises	15.00%	2.5
Rayong Acetylene Company Limited Address: 2/3 Moo 14, Bangna-Trat Road, Km. 6.5, Bang Kaeo Subdistrict, Bang Phli District, Samut Prakan Province Tel. 0-3862-1680, 0-3861-9577	Production and distribution of acetylene gas	13.04%	115

Notes: Only operating companies are shown.

⁽¹⁾ On July 25, 2022, the Board of Directors meeting resolved to approve the dissolution of PTT Energy Solutions Co., Ltd. (PTTES), and on August 29, 2022, the Extraordinary General Meeting of Shareholders of PTES resolved to approve the dissolution of PTES. The dissolution was registered with the Ministry of Commerce on December 29, 2022.

Relationship with Businesses of the Major Shareholders

IRPC's major shareholder is PTT Public Company Limited (PTT), a fully integrated petroleum and petrochemical business operator with upstream to downstream supply chain through PTT's own and others' business through its subsidiaries, namely, petroleum exploration and production, oil refining, and petrochemical businesses. Currently, PTT is the major shareholder of Thailand's three refineries, comprising PTT Global Chemical Public Company Limited (45.18 per cent), Thai Oil Public Company Limited (45.03 per cent), and IRPC Public Company Limited (45.05 per cent). In petroleum and petrochemical business operations, IRPC has transactions and cooperates with PTT and its subsidiaries. For example, IRPC purchases most crude oil through PTT for efficiency enhancement and cost reduction, manages part of oil and/or product price hedging through PTT, and receives and provides financial assistance for mutual liquidity management. In addition, IRPC has transactions associated with the trade in feedstocks, petroleum products and petrochemical products, with the PTT Group of companies.

Shareholder

List of the top 10 shareholders of the Company as of the book closing date October 5, 2022 are as follows:

Number	Shareholder	Number of shares	Shareholding (per cent)
1.	PTT Public Company Limited ⁽¹⁾	9,206,674,600	45.05
2.	Thai NVDR Company Limited ⁽²⁾	1,602,967,325	7.84
3.	Siam Management Holding Company Limited	613,020,000	3.00
4.	Social Security Office	402,936,400	1.97
5.	SOUTH EAST ASIA UK (TYPE C) NOMINEES LIMITED	257,906,145	1.26
6.	Mr. Siphot Saphaweechaikul	182,500,000	0.89
7.	STATE STREET EUROPE LIMITED	173,114,262	0.85
8.	N.C.B. TRUST LIMITED-POLUNIN DEVELOPING COUNTRIES FUND, LLC	125,451,693	0.61
9.	BNP PARIBAS NEW YORK BRANCH	104,976,000	0.51
10.	Mr. Worapong Asawanives	90,889,200	0.44

Notes: ⁽¹⁾ PTT Public Company Limited as a major shareholder of the Company took part in formulating the Company's management and operating policies, which have been approved by the Board of Directors. As of December 31, 2022, there are 4 directors or executives of PTT Public Company Limited out of the total 15 directors of the Company.

⁽²⁾ Thai NVDR Company Limited is a subsidiary of the Stock Exchange of Thailand, which operates business by issuing Non-Voting Depository Receipt (NVDR) securities listed on the Stock Exchange of Thailand. Such securities are for sale to investors and the proceeds from the sale of NVDR are then invested in Thai underlying securities that are listed on the Stock Exchange. Investors who are NVDR holders are entitled to benefits, such as dividends, rights to subscribe to new shares just like shareholders of a listed company, but do not have voting rights at the shareholders' meeting. To learn more about investors in Thai NVDR Co., Ltd., go to: www.set.or.th

Risk Management

Risk Management Policy and Plans

In response to uncertain circumstances brought on by external and internal factors, IRPC has stepped up preparedness in tackling difficult situations that may arise by giving priority to enterprise-wide risk management. This efficient and effective tool wards off threats and mitigates adverse impacts as the company continues on its quest for new business opportunities to achieve sustainable growth. The company has put in place a risk management structure with the creation of the Risk Management and Internal Control Committee, consisting of senior executives and chaired by the President and Chief Executive Officer. The Hedging Committee was also established to monitor and analyze market movements, hedge against price volatility of crude oil, petroleum and petrochemical products, shipping rates as well as risks associated with financial transactions. In addition, the Board of Directors has also appointed the five-member Risk Management Committee to provide supervisory oversight and give advice on the enterprise-wide risk management to make sure the company's principal risks stay within the predetermined appetite. To inspire the confidence of all stakeholders, the Risk Management Committee ascertains that the company's risk management is in compliance with ISO 31000: Risk Management - Principles and Guidelines and COSO - Enterprise Risk Management together with the Principles of Good Corporate Governance, Internal Control System, Business Continuity Management System, Anti-Corruption Guidelines, Sustainability Management, and Operational Excellence Management System.

At IRPC, risk management is promoted as an integral part of the corporate culture. The company instills in its workforce a risk management mindset. Executives and personnel are expected to have good working knowledge and understanding of risk management systems relevant to their lines of work to achieve the set objectives. They identify, continually monitor progress, improve, review risk management measures, and submit reports to relevant committees accordingly. Risk management

knowledge must be disseminated through all available channels. The company has also fostered Governance, Risk Management & Internal Control, and Environmental, Social and Governance (ESG) to enhance risk management efficiency of enterprise risk management.

Risk Factors Facing IRPC's Businesses

Summary of Risk Management

Price Volatility Risk

The highly volatile crude oil prices in 2022 were driven by extraordinary market conditions, especially the Russia-Ukraine war from February, drawing varied responses around the world. Many European countries have imposed sanctions to stop oil imports from Russia, which has been banned from certain international financial networks. Oil-producing OPEC and OPEC Plus adjusted their outputs. China remained in lockdown for much of 2022. All these factors caused supply chain disruption, swayed investor sentiments, which in turn caused oil prices to fluctuate and pushed price premium to unusual height, putting pressure on low petrochemical spread due to falling demand and excess supply. Such factors also influenced the quarterly results. To mitigate impacts, IRPC has undertaken the following risk management approach:

- Closely monitored and analyzed crude oil price movements triggered by events around the world, conducted price projections, and reported to the management to keep them informed on a regular basis, or called an urgent meeting as needed to ensure effective and timely response.
- Procured new crude oil types as feedstock for production to cushion against impact of price volatility on production cost as well as to maximize benefits to the company.

- Managed inventories of crude oil, petroleum, and petrochemical products at optimal levels to prevent impact from stock loss.
- Entered derivative contracts with set targets on price, volume, and period for risk management that were appropriate for and consistent with IRPC's business plan under the supervision of the Hedging Committee and the Risk Management Committee.

Operational Risk

IRPC did not compromise on employees, personnel and stakeholders' life, safety and wellbeing or the need to prevent serious environmental impacts. The company has thus implemented operational risk management encompassing the production and auxiliary processes that have a great bearing on all stakeholders, such as loss of production. Such risk management consists of risks to the life and safety of employees within the company's premises, risks to the environment and community, etc. The company's approach to operational risk management is as follows:

- Reduced risk of accidents in the workplace that could result in loss of life or property damage and the corporate image or operating results. IRPC has consistently promoted a culture of safety and safety awareness through the Strengthen Safety campaign, consisting of activities to enhance communication, deliver safety messages, build safety knowledge and understanding along with strict enforcement of safety regulations. Other safety awareness campaigns included Goal Zero – One Day Safety at Work project, Safety Walk & Talk project. In addition, the company has also introduced the Process Safety Management, Incident Management System (idMS) to analyze the root cause of incidents in order to develop the optimal safety solutions.
- Mitigated risk arising from COVID-19 pandemic even as the country began easing restrictions. IRPC has put in place and maintained operational risk management oversight to ensure enforcement of COVID-19 risk assessment and the use of rapid antigen test kits (ATK), and to set up Bubble Zone as well as work from home arrangement. Such measures were enhanced by additional guidelines for planned maintenance to minimize downtime or disruptive events that could threaten business continuity.
- Enforced plant reliability to ensure high efficiency, smooth production processes, and prevented unplanned disruptions that may affect the delivery of products to customers as well as lessened impacts on safety, environment, or corporate image. To minimize risks, IRPC has also introduced Design Integrity Improvement to ensure the reliability of the production process to efficiently and effectively deliver products according to the predetermined production plans.
- Controlled environmental risks arising from the emission of volatile hydrocarbons from the production process, which may adversely affect the health of workers and communities around the production complex. IRPC has established guidelines to reduce environmental risks by imposing enterprise-wide environmental management under ISO 14001 Environmental Management System, ISO 50001 Energy Management System, along with strict compliance with current laws and regulations as well as relevant standards.
- Prevented risk of community or public grievances arising from the company's operations. In 2022, IRPC implemented planned maintenance, including activities that could lead to complaints, litigation or disputes with surrounding communities or even public protest. The company has consistently taken proactive measures, including public communication, information dissemination to promote mutual understanding and build good relationship with communities surrounding its production complex. In addition, the company has made positive contribution to the society by operating its businesses with a high level of corporate social responsibility.
- Ensured business continuity and built confidence among all stakeholders by developing a risk management system that meets the ISO 22301:2019 Business Continuity Management System to mitigate impact from threats to business continuity, such as natural disasters, cyberattacks or COVID-19 pandemic, etc., that could otherwise cause serious business disruption.

Financial Risk

Foreign Currency Exchange Risk

The exchange rate volatility of the Baht against the USD directly and indirectly affected IRPC's revenue and expenditure to a considerable extent. The company's petroleum and petrochemical products as well as procurement of feedstocks, mainly crude oil, are settled in Baht while still being tied to USD-linked world market prices as is the case of project loans.

The Company has adopted a risk management approach using natural hedge techniques to mitigate risks associated with exchange rate fluctuation by structuring its foreign currency-denominated loans and debentures proportional to income in foreign currencies. This risk management activity comes under the oversight, approval and monitoring of the Risk Management Committee to ensure it conforms to the risk management policy and remains within the company's risk appetite. The company also engages in FX swaps to reduce its exchange rate risk exposure associated with export revenue in USD and USD-denominated expenditure on feedstocks.

Funding & Liquidity Risk

IRPC has devised a capital spending plan for ongoing business expansion and thus incurred a repayment burden for loans and maturing debentures. The company needs to secure adequate capital to meet the obligations at a reasonable cost of funds. The ability to obtain external funding depends on factors, such as operating results, financial status, credit rating of the company, petroleum, and petrochemical industry outlook as well as economic climate and money market conditions, domestic and international, etc. The company may be exposed to liquidity risk unless it continues to find external funding to maintain adequate working capital.

IRPC's risk management approach seeks to ensure adequate capital to fund its business plan. Capital is structured to keep key financial ratios at an appropriate level under good corporate governance while the company

closely monitors factors affecting or related to financing options or its ability to secure funding at reasonable costs. At present, IRPC's credit lines from financial institutions consist of a short-term loan of Baht 21,305 million for use as working capital, and a credit line of Baht 10,000 million that IRPC can borrow under a loan agreement with PTT, and a credit line of Baht 1,500 million that IRPC can lend to companies within the PTT Group for liquidity management.

Capital Projects Risk

IRPC stresses the importance of strategic investment projects, taking into account all aspects of risk. Special consideration is given to assessing the risks of new businesses within the company's appetite framework. In 2022, a landmark project, Ultra Clean Fuel (UCF), to upgrade diesel quality from Euro 4- to Euro 5-standard compliance as required by the government in 2024. There are other potential projects being studied as part of the exploration of investment opportunities for synergy and diversification into new businesses. The company has since developed capital projects risk as follows:

- To establish supervisory oversight with a view to rapidly develop competitive advantage while accelerating investment decision-making on new business opportunities for diversification.
- To develop marketing and sales plans to accommodate product line extensions with suitable sales channels, marketability, and sufficient market demand.
- To provide needed resources, such as personnel, financing, construction sites and utility systems, to support and drive projects to successful completion with a high level of efficiency.
- To put in place progress tracking system and processes so that problems that arise can be solved promptly.

People Enable Risk

IRPC has implemented a strategic human resource management alongside technology-driven organizational capability development to build the preparedness of the workforce to support the company's vision and spur growth while producing talented personnel with professional integrity that reflect the company's core values through the following management approach:

- To design and develop an improved corporate culture and cultivate positive behaviors that correspond with the new vision in line with today's Mega Trends through the G3 concept (Good, Great, Growth to Success).
- To improve work processes for enhanced efficiency, introduce digital systems to improve efficiency, speed, and overall business competitiveness.
- To develop knowledge management system and add appropriate skills and expertise required to keep pace with the rapidly changing work processes, including new skill sets and knowledge necessary to drive businesses according to corporate strategy.
- To build a workforce that is sufficient in number and range of capabilities through recruitment, selection, and leadership development, using human resource management system and tools suitable for the company's operations.

Policy and Regulatory Risk

IRPC is fully committed to honesty, transparency, and fairness in conducting its business in accordance with good corporate governance principles. Prevention of risks associated with regulatory non-compliance pertaining to Personal Data Protection Act (PDPA), Oil Fuel Fund Act, oil reserves requirements, tax laws, labor laws, etc., is of utmost importance. Non-compliance may affect the company's business operations in terms of liability to punitive fines, litigation, or even revocation of licenses. The company has therefore established risk management guidelines as follows:

- To establish a digital system in conjunction with the creation of a database of laws, regulations and acts relating to the business operations of the company and affiliates. Such a system not only facilitates analyses of critical regulatory changes and makes them accessible to users who need them for planning and implementation.
- To renew its partnership in Thailand's Private Sector Collective Action Coalition Against Corruption (CAC), and to conduct corruption risk assessment and establish guidelines for reducing such risk accordingly.
- To communicate and raise awareness of the importance of regulatory compliance through the company's website to ensure all personnel pay close attention to their duties according to the law or face punitive actions for negligence.
- To conduct data breach response drills involving relevant departments or work units to ensure preparedness to respond effectively to data breach incidents in a timely manner.

Digital Security Risk

Cyberattacks have become a global problem that is expected to grow in magnitude and frequency. Such malicious attempts include ransomware attacks and theft of data for sale. Cyberattacks have the potential to cause serious business disruption, data breach or other damaging consequences. Most cyberattacks take the form of phishing mail and delivery of malware to the targeted computer network. IRPC has adopted proactive measures to prevent and reduce the likelihood of cyberattacks. The company's cyber security system has been subjected to rigorous testing using cyberattack modeling analysis techniques to ensure system readiness and the capability to mitigate the impact on its digital systems and to quickly recover from a damaging cyberattack. The digital security risk management guidelines are as follows:

- To achieve certification to ISO 27001: Information Security Management System, which refers to IT security management system standard that meets relevant specifications, laws, regulations.

- To conduct an annual drill in accordance with the Disaster Recovery Plan in the event of a cyberattack or a disaster, causing system failure or equipment damage.
- To establish an effective and continually developing Security Operation Center (SOC) to prevent, monitor, detect, analyze, and respond quickly to cybersecurity incidents, along with the creation of a body of knowledge for personnel to learn about effective cybersecurity.
- To develop IT operations manual on response to cybersecurity incidents and provide training, disseminate knowledge to, promote awareness among employees on the safe use of computer accessories and software as well as e-mails to protect themselves from computer viruses, malware, or other forms of cyberattacks, with IT support staff on hand to give advice, provide training, issue alerts as well as solving problems for all employees.

Emerging Risk

IRPC has analyzed ever-changing external factors and risk trends that may pose threats to the company in the next 5-10 years. These may take the form of political, economic, social, environmental, legal, technological risks, etc. IRPC is well prepared to take on such challenges while pursuing new opportunities as they present themselves.

Risk Management Guidelines

1. Energy Technology Risk for Vehicles Risk of a shift in consumer preference from internal combustion engine vehicles in favor of electric vehicles or those powered by other renewable energy, with improved technologies at lower price points. Diminishing EV range anxiety coupled with incentives offered by the government and the promotion of Thailand as a regional base for EV manufacturing, are driving electric vehicle demand. This will result in declining sales of IRPC's fuel and lubricant products.

Risk management measures The company has therefore formulated a long-term risk management plan with the strategy to gradually move away from petroleum products towards higher value-added petrochemicals, targeting Health & Life Science and Advanced Material segments along with emerging opportunities to tap into the plastic automotive parts and components that will raise the total added value of the company's product lines.

2. Climate Change Risk: The increase in frequency and magnitude of natural disasters in recent years is linked to climate change, attributed mainly to human activities, particularly greenhouse gas emissions. At the latest summit of the United Nations Convention on Climate Change (COP27), Thailand delivered a progress report on the implementation of its long-term climate strategy. The Thai government reiterated its commitment to achieving Carbon Neutrality by 2050 and Net Zero Greenhouse Gas Emissions by 2065.

Risk Management Measures To meet Public sector's policy and achieve national and international goals, as a part of Private Sector who has responsibilities and awareness of climate change risk, IRPC has targeted following goals: 20% reduction of CO2 emissions by 2030, Carbon Neutral by 2050 and Net Zero emissions by 2060, including studies on the application of Carbon Pricing in assessing the cost-effectiveness of future projects, putting in place measures to reduce GHG emission intensity, such as improving energy efficiency in its production processes, thereby reducing fuel combustion. IRPC has piloted a voluntary assessment as per the Carbon Footprint Organization (CFO) assessment guidelines in collaboration with the Department of Industrial Works and Thailand Greenhouse Gas Management Organization. (TGO), and implemented projects using solar panels to generate electricity, along with stepping up preparedness to export its products to countries that impose carbon tax under the Carbon Border Adjustment Mechanism (CBAM) in Europe.



Business-Driven Sustainability

Key Sustainability Performance



E: Environmental

S: Social (Society and Stakeholders)

G: Governance

Zero Hazardous Waste in Landfill

Reduction in energy consumption by more than **8.5** million gigajoules per year

Absolute Greenhouse Gas Emission, both Scope 1 and Scope 2, of the company at **3.685** million tons of carbon dioxide equivalent, which is on target.

Goals

To achieve Carbon Neutrality by 2050

To achieve Net Zero emissions by 2060

Satisfaction score from the society and surrounding communities at **99** per cent, was higher than 2021

Customer satisfaction score at **92** per cent, was higher than 2021

Employee engagement score at **87** was higher than 2021

No lost time accidents of employees and contractors

No material operational non-compliance was detected.

100% of employees have submitted their conflict of interest disclosure.

“Excellent” CG Rating for 14th Consecutive organized by the Stock Exchange of Thailand (SET) and the Thai Institute of Directors

Performance assessment of the Board of Directors and Sub-Committee by an independent appraiser, comparable to the criteria of CGR of listed company was rated **“Excellent”**

Awards and Recognition

Member of
Dow Jones Sustainability Indices
Powered by the S&P Global CSA



Sustainability Management Policy, Strategies and Goals

Sustainability Management Policy

IRPC Group's Sustainability Management Policy has been established as a guideline for sustainable management practices of the company, in alignment with internationally accepted standards, along with a strategy to develop operational practices that take into consideration Environmental, Social and Governance Enhancement. The policy is also in conformance with the United Nations Sustainable Development Goals. The first edition of the sustainable policy was announced in 2015, and has been continually updated. In 2021, the sustainability policy was amended to expand the scope of sustainability management in the case of overseas operations. The current policy and its guideline continue to be relevant and applicable to new emerging issues in 2022.

Key Points of the Sustainability Management Policy

Sustainability Management Policy of IRPC Public Company Limited and Subsidiaries (IRPC Group)



Implement business transformation towards low-carbon society along with environmentally friendly operations that use resources wisely, while controlling and reducing impact of business to ecosystem and biodiversity as well as mitigating impact of and adapting to climate change.

Operate business with responsibility, taking into account the importance of upholding human rights, labor rights, safety, and hygienic standards, and maintaining good working environment, along with continuous human resource development to ensure employees improve and acquire new capabilities and needed skills. Make full use of the corporate expertise to create shared values and improve the quality of life of the community to grow sustainably.

Comply with the principles of good corporate governance, act with integrity, obey the law, honor commitments and requirements of the country we operate in, as well as following international best practices. Establish public disclosure to ensure operational transparency, implement risk management, adapt to changes in a timely manner, identify suitable opportunities for sustainable business growth, mitigating impact of business operations throughout the entire supply chain, and adopt a balanced approach to stakeholder engagement.

Sustainability Strategy

IRPC has set sustainability goals and strategies or 3C's Strategy, which consists of 3 pillars, namely C1: Climate Change Strategy, C2: Circular Economy Strategy, and C3: Creating Shared Value Strategy

<p style="text-align: right;">Low Carbon +</p>  <h3 style="text-align: center;">Climate Change</h3> <p style="text-align: center;">Support Low carbon society and sustainable roadmap to net zero</p> <hr/> <p>Commit to reduce emissions</p> <ol style="list-style-type: none"> 1. 20% by 2030 2. Carbon Neutrality 2050 3. Net Zero by 2060 <hr/> <p style="text-align: center;">Focus on adapting and reducing the impact of global climate change.</p> <hr/> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>7 AFFORDABLE AND CLEAN ENERGY</p> </div> <div style="text-align: center;">  <p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p> </div> <div style="text-align: center;">  <p>13 CLIMATE ACTION</p> </div> </div>	<p style="text-align: right;">Living +</p>  <h3 style="text-align: center;">Circular Economy</h3> <p style="text-align: center;">Create Living + for all stakeholders through waste minimization and Eco solution business and services</p> <hr/> <p>Build ECO-Solutions by</p> <ol style="list-style-type: none"> 1. Maintain Zero waste to landfill 2. Waste Utilization > 95% in 2040 3. Waste to value <hr/> <p style="text-align: center;">Target to reduce the impact of soil waste, strive 3R of waste management in factories and aim to drive the joint value with customers and partners.</p> <hr/> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>6 CLEAN WATER AND SANITATION</p> </div> <div style="text-align: center;">  <p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p> </div> </div>	<p style="text-align: right;">Recognition +</p>  <h3 style="text-align: center;">Creating Shared Value</h3> <p style="text-align: center;">Honors and awards from positively impact the health and wellbeing of people through our products and business</p> <hr/> <p>Uplift sustainable values to Stakeholders by increase 20% of True Value in 2030</p> <hr/> <p style="text-align: center;">Create to boost values to stakeholders</p> <hr/> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>2 ZERO HUNGER</p> </div> <div style="text-align: center;">  <p>3 GOOD HEALTH AND WELL-BEING</p> </div> <div style="text-align: center;">  <p>4 QUALITY EDUCATION</p> </div> </div>
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IRPC's Sustainability Strategic Framework

IRPC is committed to the mission "To create material and energy innovation for better living" in accordance with the sustainable development guidelines by adhering to principles and practices based on social responsibility by promoting stakeholder engagement and to build trust through operational excellence, transparency, and continuous innovation and technology development. This is to ensure the business grow steadily and sustainably in all 3 dimensions: environmental, social and governance, that correspond with the Sustainable Development Goals. To this end, the Sustainability Strategic Framework and Goals have been established as follows:

Strategic Direction	Short-term/Long-term Operational Goals	Performance Index	Support for UN SDGs
<p>“Low Carbon Plus”</p>  <p>Climate Change Management</p>	<p>Short-term Goals</p> <ul style="list-style-type: none"> Reduce greenhouse gas emissions by 20% from the 2018 base year in 2030 <p>Long-term Goals</p> <ul style="list-style-type: none"> Carbon Neutrality by 2050 Net zero emissions by 2060 	<ul style="list-style-type: none"> IRPC Group's greenhouse gas emissions at 3.685 million tons of carbon dioxide equivalent, was within the target range. Review the selection of the base year and long-term targets of IRPC Group's GHG emission control. Review of Energy Intensity Index goal setting 	
<p>“Living Plus”</p>  <p>Circular Economy management model</p>	<p>Short-term Goals</p> <p>Maintain zero waste to landfill policy</p> <p>Long-term Goals</p> <p>Create added value from both Post Industrial Recycled (PIR) and Post Consumer Recycled (PCR) into the recycling process.</p>	<ul style="list-style-type: none"> Sales of environmentally friendly products 	
<p>“Recognition Plus”</p>  <p>Creating Shared Value</p>	<p>Short-term Goals</p> <p>Increase the proportion of social investment projects (Commercial initiatives) for sustainable development of the community's quality of life.</p> <p>Long-term Goals</p> <p>Increase shared value creation per stakeholder by 20% by 2030.</p>	<ul style="list-style-type: none"> Value of social impact created by social investment budget.* Goal set for zero human rights complaint <p><i>Notes: * Corporate KPIs</i></p>	

Corporate Sustainability Assessment

IRPC attaches great importance to the management of eco-efficiency of manufacturing processes and its constant improvement, along with respect for human rights, enterprise-wide innovation and workforce development, climate change adaption as well as water management, occupational health and safety standards, and quality of life of the community and customer relationship management, etc. All these measures, put in place to ensure maximum effectiveness, coupled with dedication of the management and personnel to good governance principles and sustainable development policy, contributed to the Company being recognized and selected as a member of the 2022 Dow Jones Sustainability Indices (DJSI) under the Emerging Market category, in the Oil & Gas Refining and Marketing sector for the 9th consecutive year, and was ranked in the Bronze Class in the Sustainability Yearbook 2022, which are testament to our business acumen guided by IRPC sustainable development policy, good corporate governance as well as our commitment to maintain a delicate balance in economy, society, environment and the best interests of stakeholders to drive growth and prosperity for all.



irpc
SHAPE WHAT'S GOOD
FOR TOMORROW

Member of
**Dow Jones
Sustainability Indices**
Powered by the S&P Global CSA

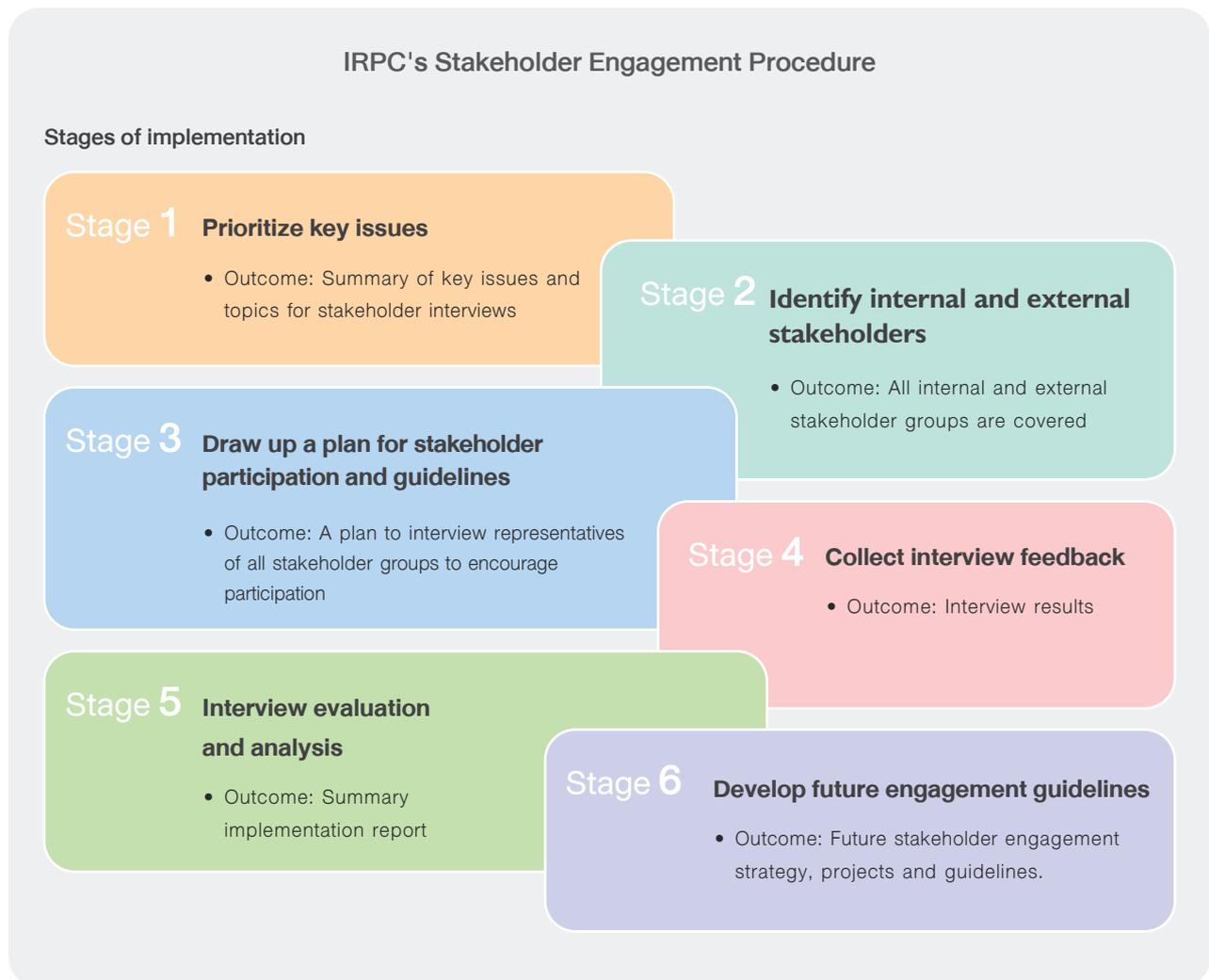
9 ปีแห่งความภาคภูมิใจ IRPC ติดอันดับ DJSI ดัชนีความยั่งยืนระดับโลก

กลุ่มอุตสาหกรรม Oil & Gas Refining & Marketing

พร้อมสร้างสรรค์นวัตกรรมวัสดุและพลังงาน
ควบคู่ไปกับการสร้างสมดุลเพื่อสังคมและสิ่งแวดล้อม
"IRPC สร้างสิ่งที่ดีเพื่ออนาคต"

Managing the impact on stakeholders in the business value chain

IRPC conducts internal and external stakeholder engagement every year to understand each stakeholder group's views, interests, expectations, and concerns, especially from the economic, social, and environmental perspectives. The business unit responsible for engagement with each stakeholder group identifies stakeholders and draws up IRPC's stakeholder engagement procedure. In addition, the company reviews the formats of stakeholder engagement activities and channels on an annual basis, to reassure stakeholders that the company provides them with the opportunity to participate in such activities to express their opinions freely and transparently as appropriate.



IRPC stands ready to move towards a stable and sustainable future, acutely aware of stakeholder expectations. The Company has regularly organized consultative sessions to engage all stakeholder groups. On the strategic direction of its operations, IRPC holds consultations with public sector agencies, shareholders as well as interviews with key stakeholders on economic, social, and environmental issues. Each relevant business unit tasked with engaging a specific stakeholder group, provides a briefing to monthly management committee meetings. Findings from stakeholder engagement sessions form the basis of sustainability materiality assessment and the annual corporate strategic planning.

Outcome of Stakeholder Hearings

Key Stakeholders	Engagement Approach (Frequency)*	Engagement Objective	Issue of Interest	Action Guidelines	Implementing Unit
Shareholders/ Investors	<ul style="list-style-type: none"> Domestic and international roadshows (quarterly online channels) Analyst meetings (quarterly online channels) Conference calls (quarterly online channel) Site visits (annual) News and Public Relations (Monthly) 	<ul style="list-style-type: none"> Opportunities for investors to ask questions about IRPC Build confidence in the organization and investment Access to accurate information Protect the rights of shareholders that they are entitled to according to the regulations. 	<ul style="list-style-type: none"> Improve competitiveness and follow the business direction in accordance with the new vision Organizational risk management, both short-term and long-term Sustainability actions, particularly to achieve Net Zero Target 	<ul style="list-style-type: none"> Actions to increase production capacity and seek new businesses to correspond with current situations Presentation of enterprise risk management information Answer investors' questions regarding sustainability 	Office of Corporate Affairs/ Investor Relations
Employees	<ul style="list-style-type: none"> Employee engagement survey (annual) Announcement of news and measures during COVID-19 (weekly or more frequently as needed) CEO Townhall 	<ul style="list-style-type: none"> Measure and strengthen corporate culture and desirable behaviors Measure performance of human resource management Inform about health and safety measures during COVID-19 	<ul style="list-style-type: none"> Organizational values and desirable behaviors Employee engagement Human resource management and development Improve business competitiveness and follow business direction in accordance with the new vision 	<ul style="list-style-type: none"> IRPC DNA Development Guidelines Human resource management excellence Make improvements to correspond with engagement factors Actions to increase production capacity and seek new businesses to correspond with current situations 	Human Resources and Organizational Capabilities
Customers/ Consumers	<ul style="list-style-type: none"> Online customer seminar (annual) Customer satisfaction survey (annual) Activities to strengthen relationships between customers and the company, such as holiday gifts, sporting events, seminars, thank you parties (annual) 	<ul style="list-style-type: none"> Awareness of customer needs and suggestions Keep track of updated product information and expectations Develop a good relationship between customers and the company 	<ul style="list-style-type: none"> Updated product information and IRPC's expectation Details of relevant laws and market trends Product Development Plan 	<ul style="list-style-type: none"> Guidelines for exchanging knowledge, sharing of knowledge in business and ESG Notify relevant units about customers' requirements, expectations and concerns and develop relevant action plans Guidelines for notifying product progress 	Commerce and Marketing

Key Stakeholders	Engagement Approach (Frequency)*	Engagement Objective	Issue of Interest	Action Guidelines	Implementing Unit
Customers/ Consumers	<ul style="list-style-type: none"> Online communication channels, such as Webinar, Microsoft Team, electronic news 	<ul style="list-style-type: none"> Exchange knowledge with customers Collect customer information and keep the information up to date 	<ul style="list-style-type: none"> Requirements and expectation of products, such as eco-friendly products Improve business competitiveness and follow business direction in accordance with the new vision 	<ul style="list-style-type: none"> Strategies to respond to customer needs, such as water use strategies and sales strategy Actions to increase production capacity and seek new businesses to correspond with current situations 	Commerce and Marketing
Suppliers	<ul style="list-style-type: none"> Training prior to ESG audit (annual) Supplier satisfaction survey (annual) Supplier performance assessment (annual) 	<ul style="list-style-type: none"> Clarify objectives of ESG audit Take into consideration supplier satisfaction with IRPC's procurement process 	<ul style="list-style-type: none"> Provide suppliers with knowledge regarding key ESG requirements Encourage supplier engagement and ensure satisfaction throughout the supply chain Become a partner to grow business together Business operations that respect human rights 	<ul style="list-style-type: none"> Integrated Supply Chain Management through digital system Guidelines for exchanging knowledge, sharing of knowledge in business and ESG requirements 	Procurement
Community, Society and Environment	<ul style="list-style-type: none"> Communicate with the community before/during/ after social project implementation Organize public hearings (every time an Environmental Impact Assessment (EIA) report is prepared) Conduct community satisfaction survey (annual) Provide complaint channels 	<ul style="list-style-type: none"> Inquire about community's needs and problems Provide information and promote understanding of construction projects Gather information on community's concerns, demands relating to construction projects Build confidence and acceptance of construction projects and the company 	<ul style="list-style-type: none"> Community's needs and problems Concerns, suggestions for construction projects Management of the adverse effects of global warming, such as flood and drought 	<ul style="list-style-type: none"> Strategies for implementing social responsibility and environmental stewardship through actions, such as social projects Strategies for implementing mitigation measures specified in Environmental Impact Assessment (EIA) Report 	Social enterprise and community relations

Notes: * Due to the COVID-19 pandemic, activities to engage certain stakeholder groups have been postponed as necessary or switched to online events.

IRPC Materiality Assessment

IRPC gathers materiality assessment results relating to stakeholders, regulations set out by government and domestic and international organizations, such as SASB, SustainAbility, World Economic Forum, UN Sustainable Development Goals and NSTDA, etc. The Company takes these into consideration along with corporate risks, sustainability policy, business operations, and results of the analysis and review of the previous year's operations, to identify and prioritize issues affecting sustainable business operations in accordance with the GRI Reporting Principles for Defining Report Content.

Identifying important issues for IRPC

IRPC selects corporate material issues relevant to corporate's vision, mission, and strategy; for example, standard of sustainability management requirements and guidelines, Megatrends, involved international risks, comparable companies' material, etc. Furthermore, stakeholders' expectation and concerns derived from value chain analysis by internal department in charge, and stakeholders' feedback from Annual Survey are also taken into this consideration.

Disclosure of sustainability performance

To demonstrate transparency, build understanding and establish reliability to stakeholders, IRPC prepared this sustainability report by applying the Reporting Principles for Defining Report Content (GRI Standards) consisting of Sustainability Context, Materiality—reflect the reporting organization's significant economic, environmental, and social impacts or substantively influence the assessments and decisions of stakeholders, Completeness, and Stakeholder Inclusiveness. Additionally, to ensure the quality of information in a report, including its proper presentation, the Reporting Principles for Defining Report Quality has been applied. These principles include Accuracy—being sufficiently accurate and detailed for stakeholders to assess the reporting organization's performance, Balance—reflecting positive and negative aspects of the reporting organization's performance, Clarity—making information available in a manner that is understandable and accessible to stakeholders, Comparability—presenting in a manner that enables stakeholders to analyze changes in the organization's performance over time, and that could support analysis relative to other organizations, Reliability—being able to be checked to establish the veracity of its contents and the extent and Timeliness—report is provided on a regular schedule so that information is available in time for stakeholders to make informed decisions. In summary, this is an approach of the preparation of this sustainability report that is internationally accepted. In addition, an external independent assurer has been engaged to verify the report to ensure accuracy and completeness according to the GRI Sustainability Reporting Standards as well as build trustworthiness to stakeholders in information presented.



IRPC Materiality Assessment Result



▲ Sustainable Value Creation Material Issues

- Focus on creating value for sustainable growth
- Set a top-down approach and long-term strategic, direction and target, to be deployed into the business plan at corporate level
- Set lagging KPIs, long-term targets, and a clear roadmap

Disclosed in this report

★ Enabling Material Issues

- Manage similarly to managing the Sustainable Value Creation Material Issues as it was a crucial issue which enhances the effectiveness of the Sustainable Value Creation management

Disclosed in this report

● Business Fundamental Material Issues

- Focus on the value creation, risk mitigation and productivity improvement
- Integrate into the corporate management systems and assign relevant units to take responsibility for material issues at the corporate level
- Set leading indicators and medium-term target.

Disclosed on the company's website

Sustainability material issue	Sub-issue	Scope of impact	Supporting the Sustainable Development Goals	Topic location	
				One Report	Website
Sustainable Value Material Creation Material Issue					
Climate Change	<ul style="list-style-type: none"> Water use risk management. Air emissions 	<ul style="list-style-type: none"> IRPC and subsidiaries Customers/Consumers Employee Community, Society and Environment 		Climate Change Management	Climate change management, climate, energy and water resource management;
Innovation	Innovation and Product Development	<ul style="list-style-type: none"> IRPC and subsidiaries Customers/Consumers 		Innovation and specialty products	Innovation for sustainability
BCG Economy	Circular Economy	<ul style="list-style-type: none"> IRPC and subsidiaries Customers/Consumers 		BCG Economy Management Approach	BCG Economy Management Approach
Creating Social Value	<ul style="list-style-type: none"> Local Communities Indirect Economic Impacts 	<ul style="list-style-type: none"> IRPC and subsidiaries Community, Society and Environment 		Creating shared values for society	Social well-being
Enabling Material Issues					
Digital Enterprise Transformation	<ul style="list-style-type: none"> Cyber Security 	<ul style="list-style-type: none"> IRPC and subsidiaries Shareholders/Investors Employee Customers/Consumers Partners 		Digital Enterprise Transformation	Cyber security
Eco-efficiency in the production process	<ul style="list-style-type: none"> Energy Air emissions Waste Compliance with environment 	<ul style="list-style-type: none"> IRPC and subsidiaries Shareholders/Investors Employee Customers/Consumers 		<ul style="list-style-type: none"> Eco-efficiency in the production process Performance 	Eco-efficiency in the production process.
Human Resources Management	<ul style="list-style-type: none"> Strategic Workforce Planning Training and development of employees' potential 	<ul style="list-style-type: none"> IRPC and subsidiaries Employee 		<ul style="list-style-type: none"> Human Resources management and development Performance Summary 	Human Resources management
Biodiversity	<ul style="list-style-type: none"> Biodiversity Impact Assessment Projects that promote biodiversity 	<ul style="list-style-type: none"> IRPC and subsidiaries Community, Society and Environment 		<ul style="list-style-type: none"> Biodiversity 	Biodiversity

Sustainability material issue	Sub-issue	Scope of impact	Supporting the Sustainable Development Goals	Topic location	
				One Report	Website
Human rights	<ul style="list-style-type: none"> Human rights policy and related policies. Implementation of human rights projects 	<ul style="list-style-type: none"> IRPC and subsidiaries Shareholders/Investors Employee Customers/Consumers Community, Society and Environment 		<ul style="list-style-type: none"> Human Rights Operations Performance Summary 	<ul style="list-style-type: none"> Human Rights Operations
Business Fundamental Material Issues					
Code of Conduct	<ul style="list-style-type: none"> Corporate policy and governance 	<ul style="list-style-type: none"> IRPC and subsidiaries Shareholders/Investors Employee Customers/Consumers Partners 			Good Corporate Governance
Good Corporate Governance	<ul style="list-style-type: none"> Organizational structure Good corporate governance Anti-corruption Public policy 	<ul style="list-style-type: none"> IRPC and subsidiaries Shareholders/Investors Employee Customers/Consumers Partners 			Good Corporate Governance
Risk and Crisis Management	<ul style="list-style-type: none"> Risk Management Crisis Management New risks and new risk management measures 	<ul style="list-style-type: none"> IRPC and subsidiaries Shareholders/Investors Employee Customers/Consumers Community, Society and Environment 		Risk and Crisis Management	Risk and Crisis Management
Occupational health and safety	<ul style="list-style-type: none"> Occupational health and safety Machine stability and safety in the production process 	<ul style="list-style-type: none"> IRPC and subsidiaries Employee Community, Society and Environment 		<ul style="list-style-type: none"> Occupational health and safety Performance Summary 	<ul style="list-style-type: none"> Occupational health and safety
Customer Relationship Management	<ul style="list-style-type: none"> Consumer safety Marketing and product labeling Retention and care of customer information 	<ul style="list-style-type: none"> IRPC and subsidiaries Customers/Consumers 		<ul style="list-style-type: none"> Relationship management and customer engagement Performance Summary 	<ul style="list-style-type: none"> Relationship management and customer engagement
Compliance with relevant rules and regulations		<ul style="list-style-type: none"> IRPC and subsidiaries Shareholders/Investors Employee Customers/Consumers Partners 			Good Corporate Governance
Sustainable Supply Chain Management	Green purchasing	<ul style="list-style-type: none"> IRPC and subsidiaries Customers/Consumers Partners 			<ul style="list-style-type: none"> Value Chain for Sustainability

Sustainability Strategy Focus

Supported by IRPC Sustainability Strategy

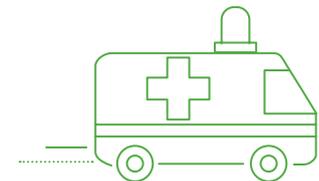
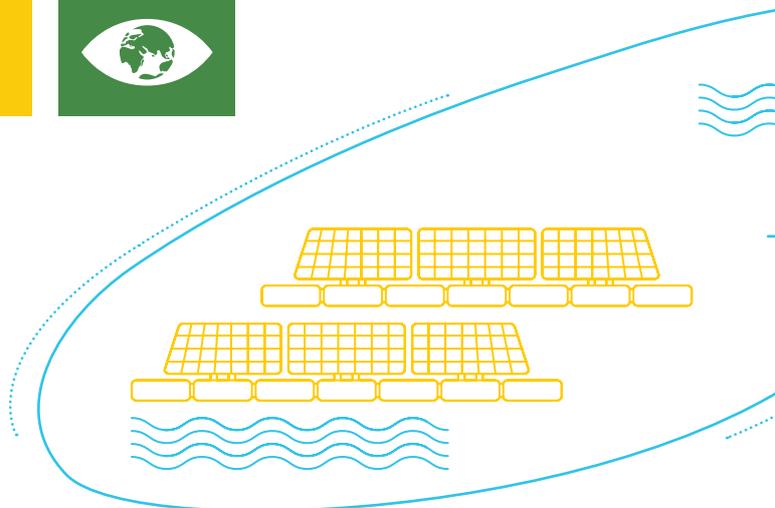
Climate Change Management
“Low Carbon +”



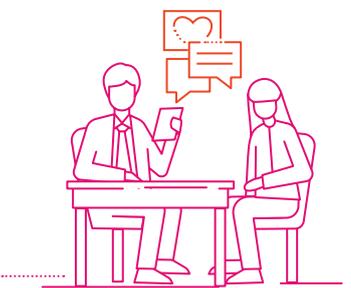
Circular Economy
“Living +”



Creating Social Value
“Recognition +”



Supported by IRPC Policies and Activities



- Human Rights Policy, Diversity and Inclusion Policy, Awareness raising and related activities
- Target: Zero case on human rights violation

- Suppliers awareness raising and audits on ESG issues/ Sustainable Supplier Code of Conduct
- Target: 100 per cent of suppliers passed ESG audit

Supported by IRPC Activities and Awareness





- Comprehensive water management, such as water risk management, efficient use of water, raising awareness of water, build employees cooperation including creating knowledge understanding and sharing water with the community
 - Empowering agricultural communities facing water scarcity problems to be able to cope with the effects of drought and improve the quality of life of Agricultural communities
 - Study the project on the use of renewable energy which is clean energy, such as Floating Solar Power, as well as the long-term goals of the index IRPC's energy efficiency (Energy Intensity Index: EII) to reduce and use energy efficiently
 - Develop and execute strategies climate change Reduce greenhouse gas emissions by 20 per cent by 2030

- Allocate budget for research and development recruiting personnel with knowledge and abilities at the doctoral level to do research and development and promote culture and Knowledge of innovation in the organization and seeking innovative new business opportunities, supporting research grants research personnel
- Set targets for the implementation of greenhouse gas emissions, scope 1 and 2, related air pollution emissions, Volatile Organic Compounds from the incinerator and significant spills improving the process of investing in projects to achieve goals, including the adoption of the 3Rs principle in the production process

- Promote health and education for the community around IRPC industrial park through the project to create shared values for society
- Provide technical and professional education to youth through IRPC Technology with a strategy to develop Quality of education according to international standards, emphasizing excellence in vocational capacity building in petrochemical and energy and other fields that meet the needs of the country

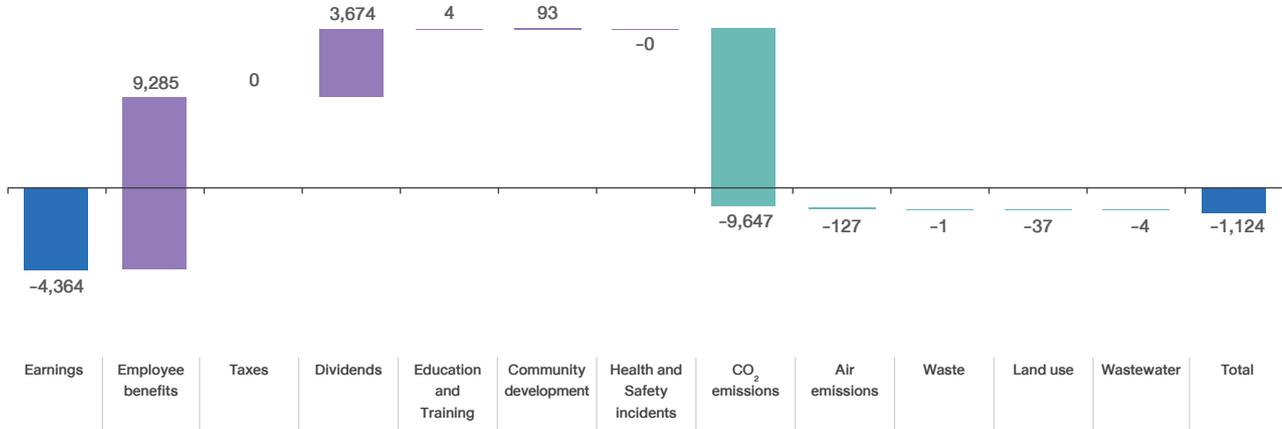


- Expressing a position in not participating in any case of corruption creates a transparent management system and free from Corruption and bribery in all activities
- Target: 100 per cent of employees declared conflict of interest report Zero complaints related to corruption and bribery



Impact Measurement & Valuation

Outcome Reporting year - 2022



unit: MTHB



Sustainability Management in Economic Dimension

Innovation and Product Development

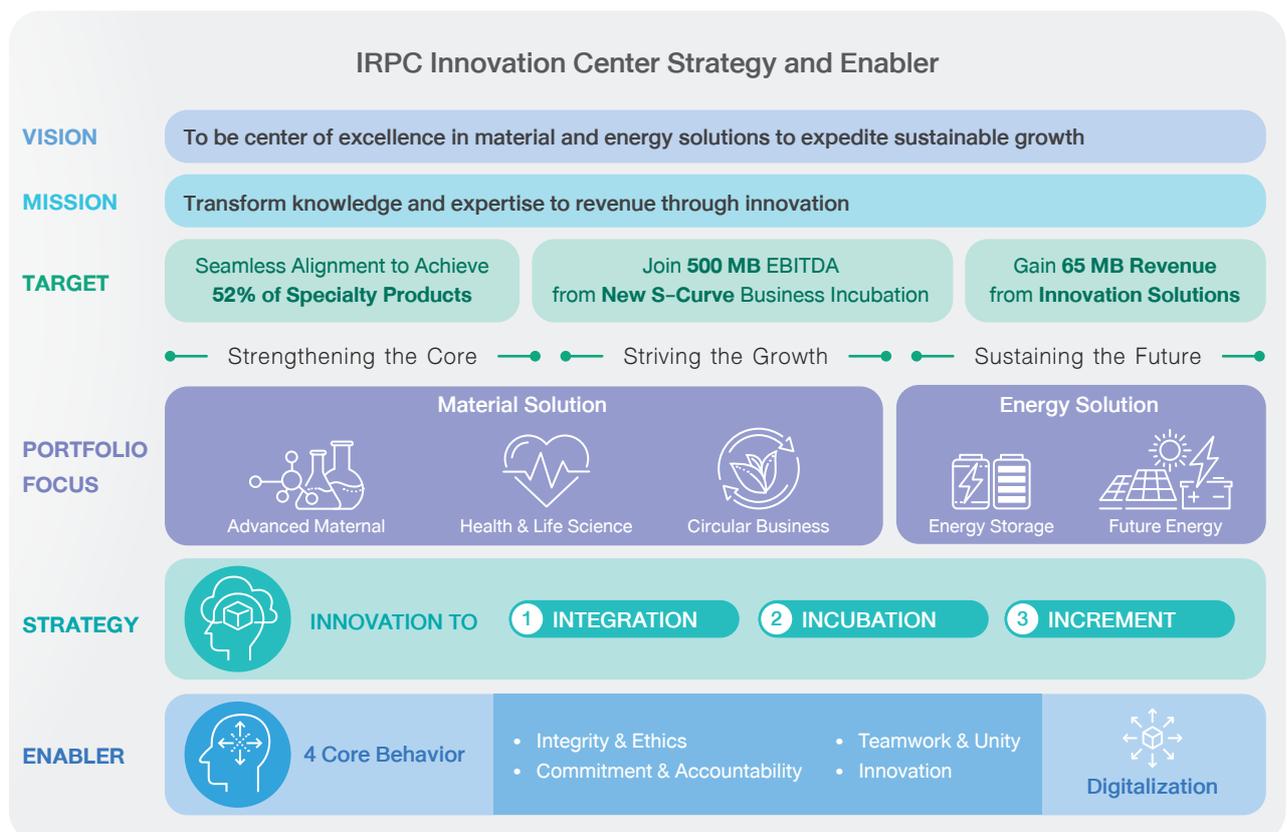
Opportunities and Challenges

In the aftermath of the COVID-19 pandemic, simmering trade war and Russia-Ukraine war and interest rate hikes to curb high inflation, the global economy and international community have been hard hit by adverse impacts amid bleak outlook. Innovation has become a key strategy used by many companies struggling to maintain or improve competitive edge and to ensure sustainable growth. IRPC was no exception. Ever mindful of the importance of innovation, the company has made innovation the main strategy enabling the company to achieve objectives and goals in accordance with its vision and mission. In addition, innovation is also recognized as the main driver of economic, environmental and social sustainability. Therefore, innovation is seen as a strategy that can create business opportunities and sustainability for the company, as well as offering solutions to meet the needs of stakeholders, improve the quality of life of the community, the betterment of the society at large and protect the environment.

Strategy and Goals

IRPC Innovation Center operates under the framework that consists of 3 components: 1. Core Uplift 2. Expansion to Adjacent Businesses, and 3. Step Out Businesses in quest of new opportunities. Such strategic framework is in alignment with the IRPC's vision "To be the center of excellence in material and energy innovations to expedite sustainable growth," in line with the company's strategy with an emphasis on the research and development of innovations in Advanced Materials, Health and Life Sciences, Circular Business, Future Energy, and Energy Storage.

The company's innovation management is subject to supervisory oversight of the Innovation Management Committee (IMC), chaired by the CEO and President, while vice presidents, and executives in charge of relevant departments serve as members. The IMC is tasked with supervising innovation development in terms of policies, procedures and resource allocation with a view to fostering sustainable growth of the company.

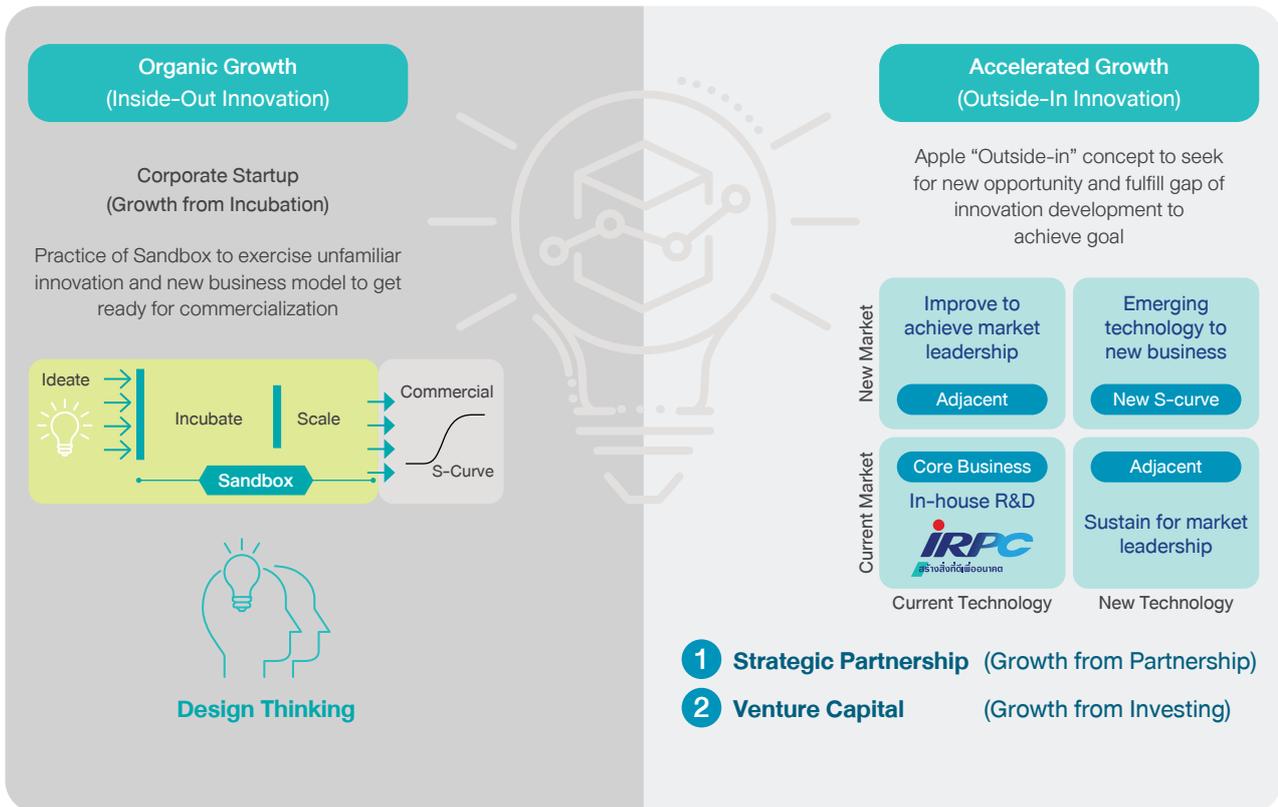


The Innovation Center operates under the “INNOVATION TO”

strategy consisting of 3 pronged approaches as follows:

1. INNOVATION TO INTEGRATION: Research and development to achieve Core Uplift and Adjacent Business innovations to add value to become Specialty Products that contribute to improved competitiveness. The focus is on 5 core industries, namely Automotive, Electric and Electronics, Packaging, Construction, and Medical and Hygiene, through Digital Innovation Process to enhance coordination between R&D, sales and marketing, and production to ensure speed, transparency and traceability.

2. INNOVATION TO INCUBATION: Innovation research and development strategy aims to identify Step Out Businesses in quest of new business opportunities for the company. This is done through the De Novo Program, a fundamental research phase to assess innovative ideas at the Proof of Concept phase. Having passed the Proof of Concept phase, such innovations move forward to Prototypes Development phase and onto market testing, Manufacturing, Integration and Delivery phases. This can be implemented under 2 paths: Path 1 Sandbox Program, which is the incubation of the company's innovation under the new business ecosystem similar to incubation of start-ups, or Inside-out Innovation, and Path 2 Open Innovation & Technology Investment, or to develop new businesses by means of Outside-in Innovation through investment in Venture Capital or start-ups in order to gain access to technologies that can be used to develop the company's new businesses.



3. INNOVATION TO INCREMENT: This approach calls for implementation of human resource development strategy aimed at Reskill and Upskill to enhance the capabilities of the company's analytical and testing laboratory to meet internationally accepted standards. Digital system

is applied for use in innovation development using the body of knowledge of the company's personnel, and the use of latest analytical testing equipment that meet the international standards to generate new revenue streams for the company.

Materiality Assessment

In 2022, the Innovation Center and analytical testing center employed 313 research and development personnel, accounting for 6.9% of the company's workforce. The center had a budget of Baht 252 million at its disposal for innovation development, personnel development, and resources with which to create added value and to ensure the company's competitive edge under its innovation-driven strategies.



Intellectual Property IRPC owns 3 types of intellectual property:

- Registered Copyrights



Totaling 13

Comprising
8 Computer Programs,
4 Music and Lyrics,
and One Publication

- Trademark

Totaling 175 Items

Registered In
26 Countries and the
European Union



- Patent

Totaling 19 Items

Registered In
26 Countries
 and 25 Others
 Pending Registration,
Covering Production
Processes of
Polymers, Petroleum,
and Chemical
Products



Proportion of Researchers
 with a PhD.



17%

of all R&D Personnel

R&D Effectiveness

1.1 Times



of incremental margin of new product aged
 3 years per R&D investment in that year

Performance Indicator	Target 2022	Performance 2022	Target 2023
Total sales of plastic pellet products (Million Baht)	995,039	995,039	980,000
Sales of specialty plastic pellet products (Million Baht)	238,810	219,871	323,400
Proportion of sales of specialty plastic pellet product to total sales of plastic pellet products (per cent)	24.00	22.10	33.00



Project Implementation

Amid daunting challenges of 2022, the IRPC Innovation Center saw through 9 innovation research and development projects in Core Uplift and Adjacent Business categories resulting in commercial products ready for launch in the market. The successful R&D projects together created an added value of Baht 42.5 million. Among those innovative products are acrylonitrile-butadiene-styrene (ABS) SR302 6F40 suitable for sheet extrusion that can be used in the manufacture of refrigerator cabinets. This type of ABS has good mechanical properties and meets international food and drug standards. Another new product high-density polyethylene (HDPE) C2936 B026 for the production of cable spacers with high voltage resistance, the first to be approved and certified by the Provincial Electricity Authority, etc.

In addition, the Innovation Center initiates new R&D projects continually and systematically in order to develop and add more high-grade specialty products to the company's portfolio. At present, there are many projects in the R&D pipeline worth up to Baht 300 million, at varying stages of development.

To push through innovation R&D to create a Step Out Business in De novo Research, consisting of 5 programs: Nanomaterials

and Nanocomposites, Materials for Advanced Battery, Materials for Electronics, Advanced Materials and Chemicals, and Advanced Devices. Currently, most of the projects are in the analytical testing laboratory level for technical feasibility or technology Readiness Level, TRL Level 4.

At present, there are 6 R&D projects in the Sandbox stage, namely ZnO Micronutrient Fertilizer, Conductive Ink and Graphene, 3D Printing, Silver Nano, Technology Enablement for Solar Energy and Chemical for protective coating. Details and progress statuses of some of the projects are as follows:



In 2022, ZnO REINFOXX Fertilizer or "White Bear Fertilizer" generated sales volume of 10,000 liters, following awareness campaign among farm owners and operators through hands-on approach putting the product to use to actually see results. IRPC established a learning center and integrated agro-tourism at Yai Da Garden "Jae Boonchuen," or IRPC Smart Farming, as a demonstrative project for learning that benefits the community and farmers throughout the country in a sustainable manner. A new ready-to-use product has been launched under the trade name "Ready Bear" to add convenience to users.



The 3D Printing project based on innovation R&D that has been tested by target customers before being launched as a new product is the 3D Printing filament under the name "Ultramo" that is of comparable quality to similar imported product but can be priced competitively. This product will be ready for launch in the first quarter of 2023 through online and offline channels. This represents another step towards a new B2C (Business-to-Customer) business model.



Product Features

High Quality

"No bubbles, high precision, and no warping"

High Toughness

"Impact resistance, which can print strong and durable parts"

Eco-Friendly Material

"Non harmful & Little odor"

The Innovation Center has conducted R&D of Silver Nano as key active ingredient with antibacterial and antifungal properties that can be applied for the manufacture of personal care, home care and pet care products as well as for medical application. A product testing by the customer has been completed and the product is expected to be available for sale in 2023. The product can compete with imported products in terms of price and quality.

Ag Silver

สุดยอดคุณภาพเงิน
ระดับนาโนเทคโนโลยี

เพิ่มพื้นที่
ผิวสัมผัส

เพิ่มประสิทธิภาพ

ใช้สำหรับ
กำจัดเชื้อโรค
ไวรัส
แบคทีเรีย
และเชื้อรา

The Innovation Center has signed a Memorandum of Understanding with the Faculty of Medicine, Chulalongkorn University to jointly research and develop medical device innovations that can lead to commercialization. Products that have already been launched include a topper that helps relieve symptoms of acid reflux under the name “PAKPING” pillow. In addition, the Innovation Center has also collaborated with leading institutions, such as Vidyasirimedhi Institute of Science and Technology (VISTEC), Chiang Mai University, Faculty of Architecture, Chulalongkorn University and PTT Group companies, etc. Such collaboration shortens development time and thus the time to market.

In implementing IRPC's strategy to gain access to Start-up ecosystem as investor, the Innovation Center joined the Decarbonize Thailand Start-up Sandbox project, a knowledge exchange space to accelerate Thailand's Net Zero goal while also developing and customizing solutions for new products and services to meet market demand through collaboration with the world's leading start-ups. IRPC has cooperated with Thai Carbon and Krosslinker to develop product prototypes that have already passed analytical testing in the laboratory.

Through collaboration between IRPC and the Faculty of Medicine Vajira Hospital Navamindradhiraj University to establishing Vajira Lab for Society Co., Ltd. as an analysis and inspection center for medical personal protective equipment to meet standards. In 2022, Vajira Lab for Society was certified by the Thai Industrial Standards Institute (TISI) and has since opened for services.

The Innovation Center has adopted a digital system for use in analytical testing at IRPC's Analytical and Laboratory Center and developed personnel to gain international expertise. Thus, improving analytical testing capability to provide faster, more accurate and with higher precision. This inspires trust among the company's customers. The digital system enables the company to effectively conduct quality control at all stages of the production process from quality inspection of feedstock to quality assurance of its products. In addition, the Analytical

and Laboratory Center saw the opportunity to earn additional income by offering analytical testing services to external customers by fully utilizing its personnel's skills and expertise as well as cutting-edge specialized equipment and tools at its disposal to deliver testing results that meet high standards. In 2022, the Analytical and Laboratory Center generated a total of Baht 13 million from analytical testing services.

IRPC's strategy places a priority on innovation research and development with a view to improving the company's competitiveness and sustainable business operations. In 2022, the company received merit recognition in the category of “Innovative Organization” for large organization at the “National Innovation Day 2022” from the National Innovation Agency (Public Organization). This is in recognition of the company's unwavering undertaking to develop innovations from its knowledge base, experience, and expertise to add value to materials alongside constant improvement in energy efficiency and the use of alternative energy of the future. The company is also known for its ability to consistently offer solutions that meet the needs of modern society in the quest for a good life and healthy living environment. Guided by its lofty vision, IRPC strives to excel in every endeavor it makes while building the body of knowledge as well as adopting new ways of thinking to transform the way it does business and diversify beyond the petroleum and petrochemicals to be able to meet the needs of more diverse customer base and greater number of customers throughout the world through collaboration with business partners.

For addition information on IRPC's
innovation research and development,
please visit:
<https://innovationcenter.irpc.co.th/>



Digital Transformation

Digitalization is one of the key success factors enabling IRPC to capitalize on new business opportunities by applying Machine Learning (ML), Artificial Intelligence (AI) and new technologies in its business operations.

IRPC's Digital Framework focuses on 2 principal areas:

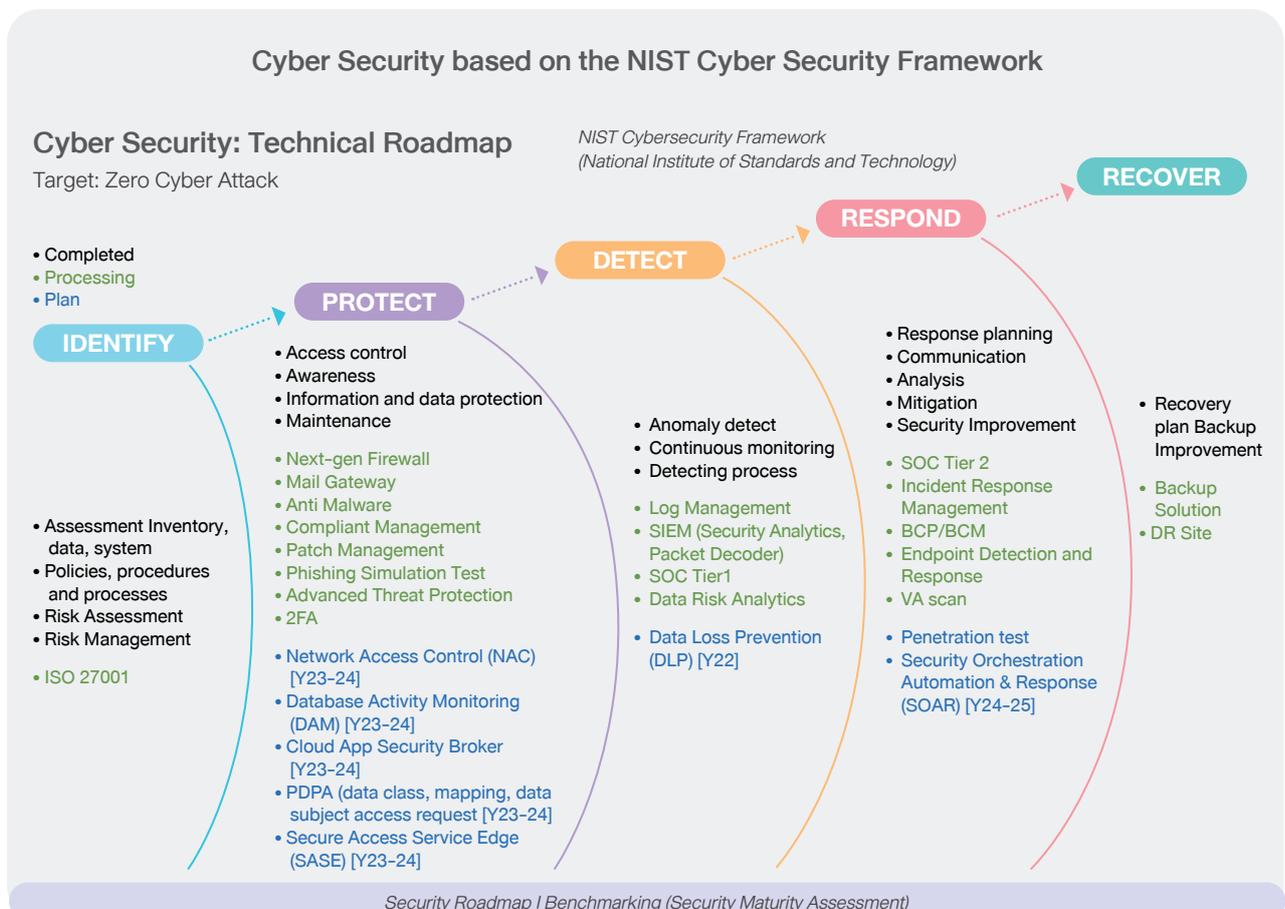
1. Cyber Security aims at strengthening defense against cyber attacks to ensure that the company can operate safely
2. Data Analytics to develop and improve the efficiency of data analysis and decision-making by employees at all levels in order to generate more revenue for the company

Implementation Approach

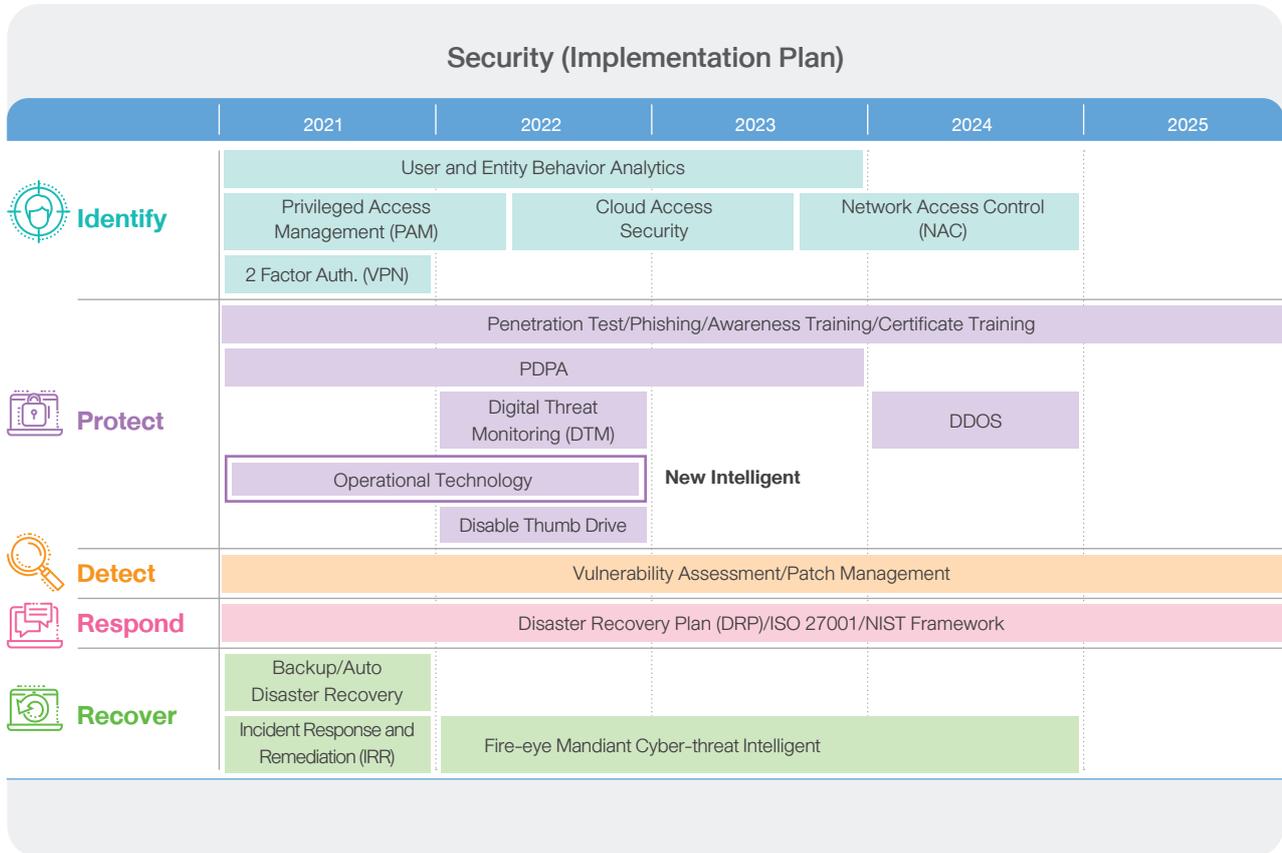
1. Cyber Security

IRPC implements Cyber security based on ISO 27001 standard for cybersecurity management systems in combination with the NIST Cyber Security Framework, which consists of 5 core functions:

1. **Identify:** Promote better understanding within the enterprise to manage cyber security risks that threaten systems, assets, data, and capabilities
2. **Protect:** Develop and implement appropriate safeguards to ensure delivery of critical infrastructure services
3. **Detect:** Develop and implement appropriate activities to identify cyber security incidents
4. **Respond:** Develop and implement appropriate activities to tackle cyber security incidents detected
5. **Recover:** Develop and implement appropriate activities to maintain a contingency plan to ensure flexibility and recoverability of any capability or service compromised by a cyber security incident



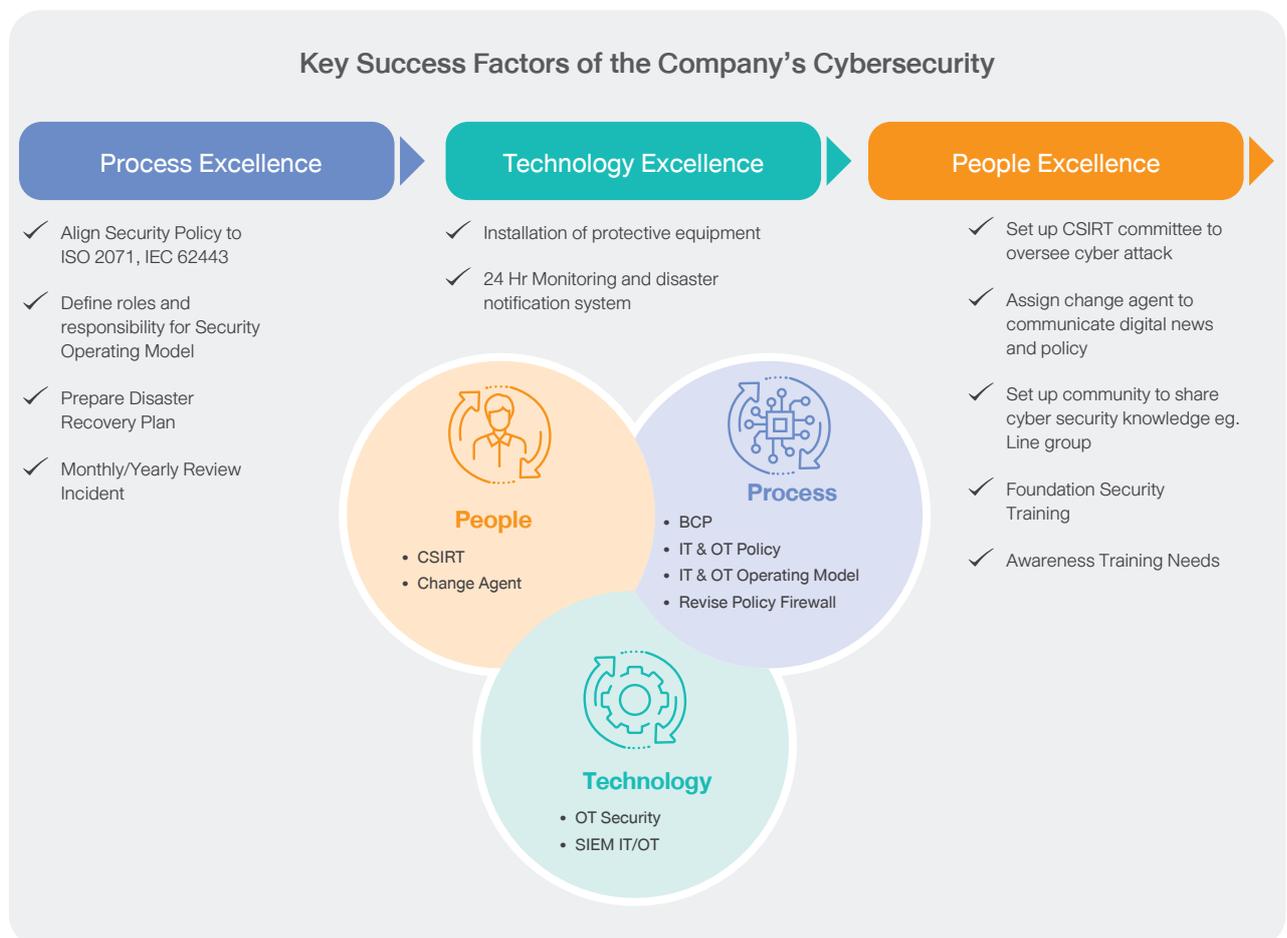
IRPC's Cyber Security Roadmap is based on components of the NIST Cyber Security Framework. The Company has already put in place cyber security work plan for 2021-2025, applying modern technologies to upgrade its cybersecurity operations, for example, Operational Technology, which is an innovative technology to help protect and secure the company's operational processes.



IRPC is the first company in the PTT Group to deploy Operational Technology (OT) to safeguard against cyberattacks. OT detects and manages industrial/manufacturing processes, assets, and equipment. The company plans to expand OT to other companies within the PTT Group in the future.

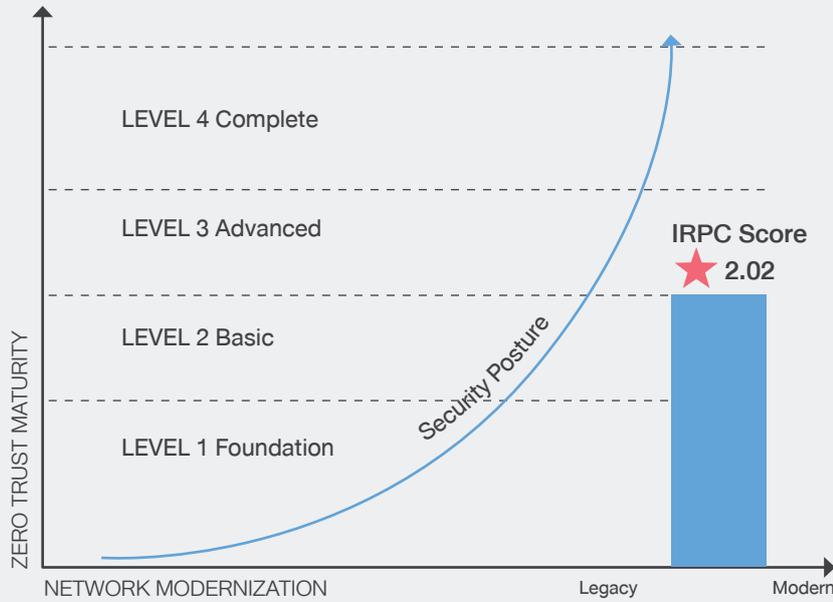
Key success factors of IRPC’s Cyber Security are as follows:

- 1. Process Excellence:** Cyber security policy formulated in accordance with international standards, such as ISO 27001, and the role of the security operating model clearly defined, along with the introduction of disaster recovery plan and establishment of monthly review of cybersecurity incidents
- 2. People Excellence:** Set up a CSIRT committee to oversee cyber security operations and appoint IT Security agent to help manage Cyber Security issues in the same direction throughout the organization, including creation of an IT Security team to monitor and manage incidents 24 hours a day
- 3. Technology Excellence:** Installation of equipment for threat prevention and 24-hour surveillance and add Change Management to help employees acquire knowledge, have understanding and realize the significance of Cyber Security and to follow the same guidelines as Data Security Protection, consisting of Confidentiality, Integrity, and Availability.



Cyber Security Assessment and Benchmarking

Information security maturity scorecard



Source: Assessment by Accenture, EA Project 2022

The below analysis shows that IRPC has risk exposure in Application, Data and Automation



Year 2023: Security Roadmap Benchmarking (Security Maturity Assessment)

In 2022, An Enterprise Architecture project was implemented. Under the project, the information security maturity under Zero trust maturity was conducted, which returned an assessment score of 2.02, deemed within the acceptable standard. In order to cover the entire 8 domains that require assessment. A higher score may be achieved from assessment of Application Data and Automation. A Security roadmap is being planned and Security maturity assessment will be conducted in 2023, with a target set for Level B.

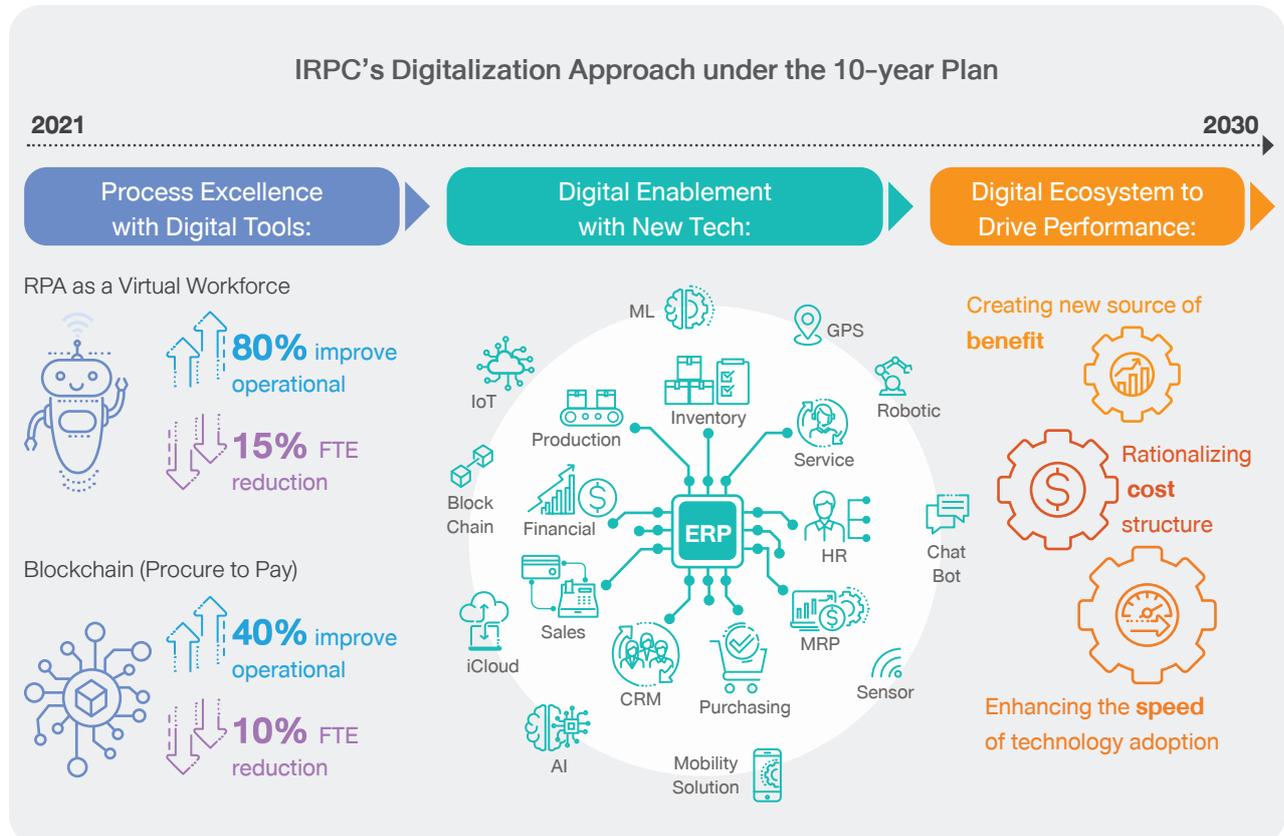
2. Data Analytic

consists of 2 components as follows:

- IRPC 4.0 has been implemented since 2018. By 2021, the company has generated more than USD 68 million in revenue.
- The Advanced Analytics project launched in 2020, which has the opportunity to generate income from the use cases of employees studying Data Science and BIA for the company in 2021-2022 in the amount of approximately Baht 76 million and Baht 25 million, respectively.

IRPC's 10-year digitalization covering the 2021-2030 period consists of 3 components:

- 1. Process excellence with digital tools:** Implementing Robotic Process Automation, or RPA, to increase operational efficiency by 80%, equivalent to about 15% of the workforce. Blockchain Technology has also been adopted in payment processing, improving efficiency by 40%, equivalent to 10% of the workforce
- 2. Digital enablement with new tech:** Adopting modern technology in the company's business operations, such as IoT, iCloud, etc.
- 3. Digital ecosystem to drive performance:** Shifting the workplace ecosystem towards digitalization to drive better performance which enables the Company to generate new revenue streams, better manage cost structures and speed up technology adoption

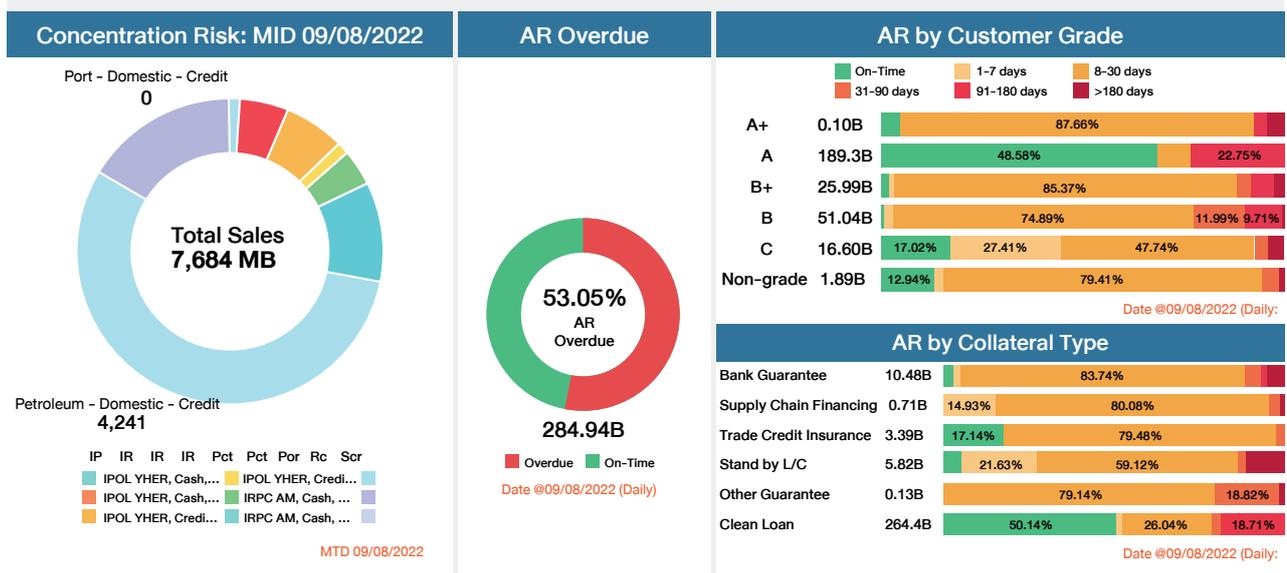


To instill an Analytical Mind, employees need to first develop necessary skills that correspond to their job functions and scope of responsibilities, along with their willingness to receive training. Planned skill development through the Business Intelligence Analyst (BIA) & Data Scientist (DS) projects, have already been underway over a period of 5 years from 2020 to 2024

Highlight of Analytic projects

Use case using Machine Learning

Trade Credit Scoring (CAF)



M/L (Credit Assessment Guideline) to manage customer credit scoring

Advance analytic for DCC plant (PRO | CCM)

It is a prediction and uses the Average Boiling Point (ABP) of Feed DCC obtained from Data Science to calculate the Product Yield of DCC in order to adjust the LP Model to be more accurate and accurate.

Predictive maintenance Power Transformer for RCDD plant (PRO)

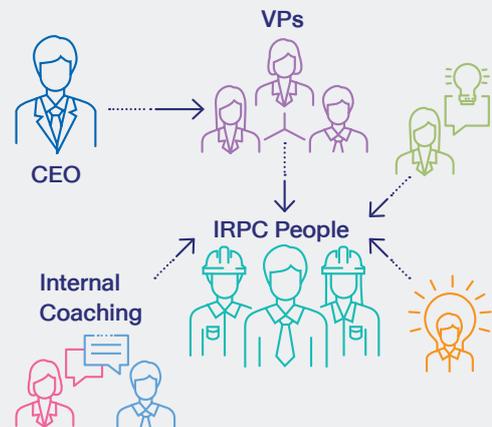
It is a prediction of the voltage regulator in the transformer to reduce the risk of breakdown of the power transformer.

Ongoing Projects

Developing Advanced Analytics Capabilities

This project aims to improve data analysis capability based on statistical principles and present information through visualization. The objective is to produce data scientists and business intelligent analysts who learn to analyze data to make forecasts and identify use cases that may impact or benefit the organization.

Launched in 2019, the project is still ongoing, with the aim to produce 300 Business Intelligent Analysts and 30 Data Scientists by 2024. At present, there are 174 business intelligent analysts and 44 data scientists, totaling 218 who have generated more than 100 use cases.



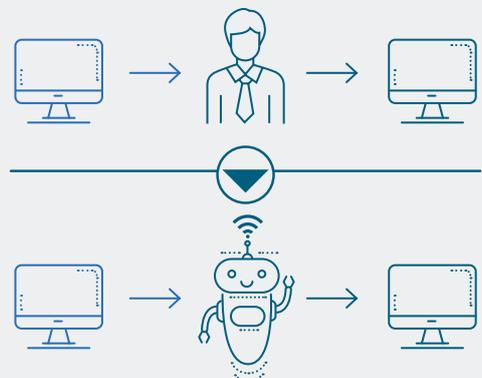
NOAH Work Smart A

To support the implementation of the NOAH project, which seeks to substitute systems or processes for workers in a smaller workforce, the Work Smart A project was launched to improve, provide tools or methods to shorten time or reduce steps in work processes to streamline work. In 2022, 14 initiatives were made to reduce FTE (fulltime equivalent) and improve operational efficiency.

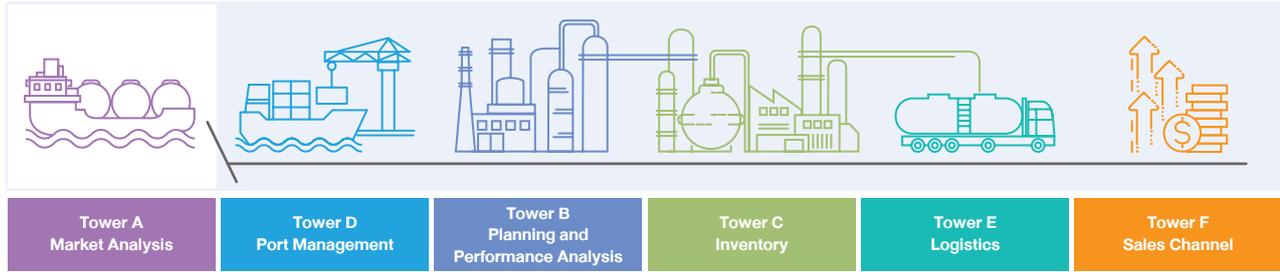


RPA (Robotic Process Automation)

This is one of the initiatives made in Work Smart A project that seeks to substitute automation for human workers tasked with repetitive work processes on a regular basis. A pilot was introduced in the finance and accounting work processes with repetitive tasks that must be performed on a regular basis. Some of these tasks had to be performed late into the night. Having successfully implemented the pilot, robotics has been introduced to all business units which are able to use robotics to handle more than 150 work processes and reduced human workers by more than 75 FTE.



Control Tower



provides executives with enhanced visibility of operational overview. There are six control towers currently in use at IRPC:

Tower A Market Analysis: An overview of the purchase of crude oil, prices, and costs to support decision-making on crude oil selection and hedging of oil price risk in crude purchased and crude price movements influenced by events to maximize gross profit

Tower B Planning and Performance Analysis: An overview of production plant status, production planning, forecasting prices, production output and production efficiency, revision of production plans, efficiency analysis to help executives make better decisions across the supply chain, reducing the time it takes to process data manually

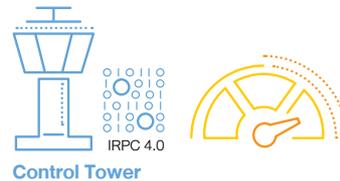
Tower C Inventory: An overview of reserved feedstocks for petroleum and petrochemical production and price forecasts and market trends, analyzing pricing and timing of product sales. This allows for better planning, execution, and pricing, reducing losses from slow/dead stocks

Tower D Port Management: An overview of port and shipping management to increase supply chain security for high-value customers and to reduce costs

Tower E Logistics: An overview of transport efficiency, transportation management, analyzing pricing and timing of product sales. This allows for better planning, execution, and pricing, reducing operational costs

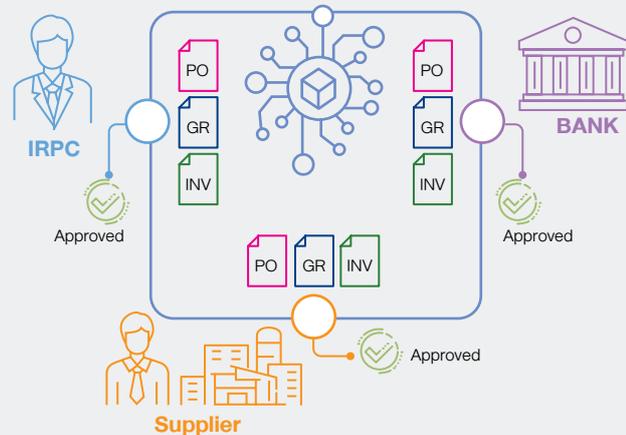
Tower F Sales Channel: An overview of sales of petroleum and petrochemical products to maximize overall sales

Data from these control towers can be integrated and Data Analytics techniques can be applied, and the outputs presented on a Dashboard.



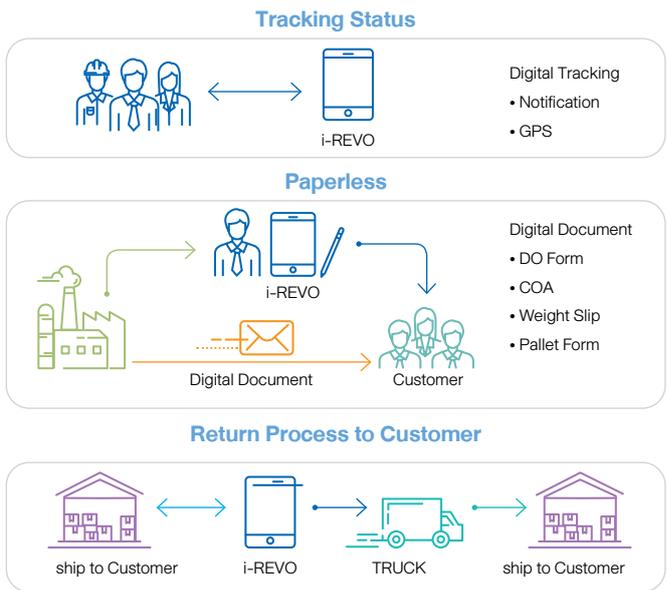
Organizational Adaptation through Innovation and Technology management Blockchain for Procure-to-Pay (B2P)

IRPC has deployed Blockchain technology to its procurement, billing, and payment processes to improve competitiveness. Capitalizing on innovation and Fintech, the company is able to increase efficiency in financial transactions. By using the same payment platform, the company is able to effectively control counterparty risk and legal risk. Blockchain technology offers high security and enables the company to monitor and review data throughout the process. More than 1,000 of IRPC's suppliers have expressed interest in using this system.



i-REVO

This refers to the use of tablets for transportation and logistics management to increase efficiency in product delivery and ensure customer and supplier satisfaction. This electronic-based management system on tablets replaces paper-based system, which requires a large number of documents being sent back and forth between warehouses, shipping companies, suppliers, and customers, and it takes time to process as everyone waits for the required documents. The i-REVO provides a real-time system that can do everything on the tablets, thus saving time and increasing efficiency.



Rotating Predictive Maintenance

This project harnesses the power of 6,000 sensors surrounding the Rotating Machine to retrieve data for analysis and predict an impending failure before the alarm goes off. Thus, preventing damage and opportunity loss. The system was developed into iPredict Platform, which benefits from IRPC's earlier project, Developing Advanced Analytics Capabilities, to produce Data Scientists who produced models for maintenance management. This platform combines various predictive models relating to maintenance work, capable of integrating spare of failure agent that occurs



Digital performance measurement goals align with both strategies:

On Cyber Security,
the Long-Term Goal is

▶ **Zero**
Cyber Attack Incident
from 2020-2030

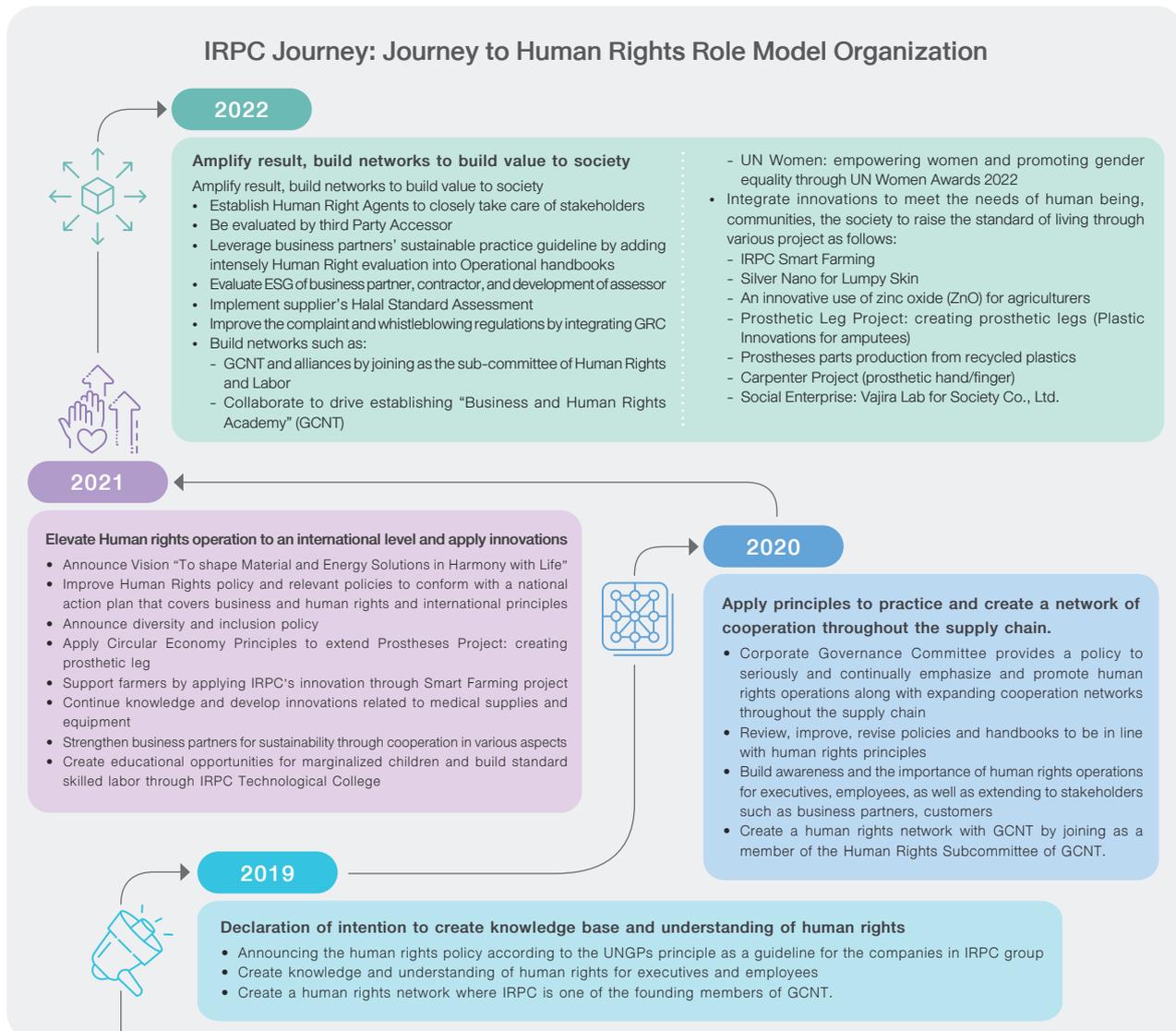
On Data Analytic,
the target is to increase
the 2020 revenue from
USD 80 million
three folds to
▶ **USD 240 million**
in 2030, and the substitution of
technology for human workers from
70 FTE in 2020 to 210 FTE in 2030.

IRPC and Human Rights Promotion Activities

IRPC is fully aware of the importance of human rights. As an organization whose business operations throughout its value chain has the potential to give rise directly and indirectly to violations of human rights. In addition, the requirements of human rights practices are becoming more stringent. Therefore, IRPC must be prepared to live up to its responsibility and meet the expectations of stakeholders in upholding human rights standards. Indeed, IRPC aims to become a corporate role model in human rights practices by adhering to the principles of human rights throughout the value chain of our business operations. Our commitment to human rights forms the basis for our ethical business conduct and a wide range of activities that we implement to promote human rights in 2022.

IRPC has formulated human rights strategies and plans with the aim to prevent human rights complaints from IRPC's operations and to encourage cooperation with various agencies in implementing human rights projects in accordance with the UN Guiding Principles on Business and Human Rights (UNGP). In 2022, IRPC bolstered its strategy to push through significant human rights promotion projects. The company also assigned persons to take charge of determining the direction of human rights activities and to develop a concrete enterprise-wide policy to manage human rights issues, promote human rights practices consistently as well as to expand cooperation network throughout the supply chain to raise awareness that respect for human rights is an integral part of business operations. It is the duty of personnel at all levels, from the Corporate Governance Committee, the CEO and President, senior executives, and employees in all units in the organization to uphold human rights.

IRPC Journey: Journey to Human Rights Role Model Organization



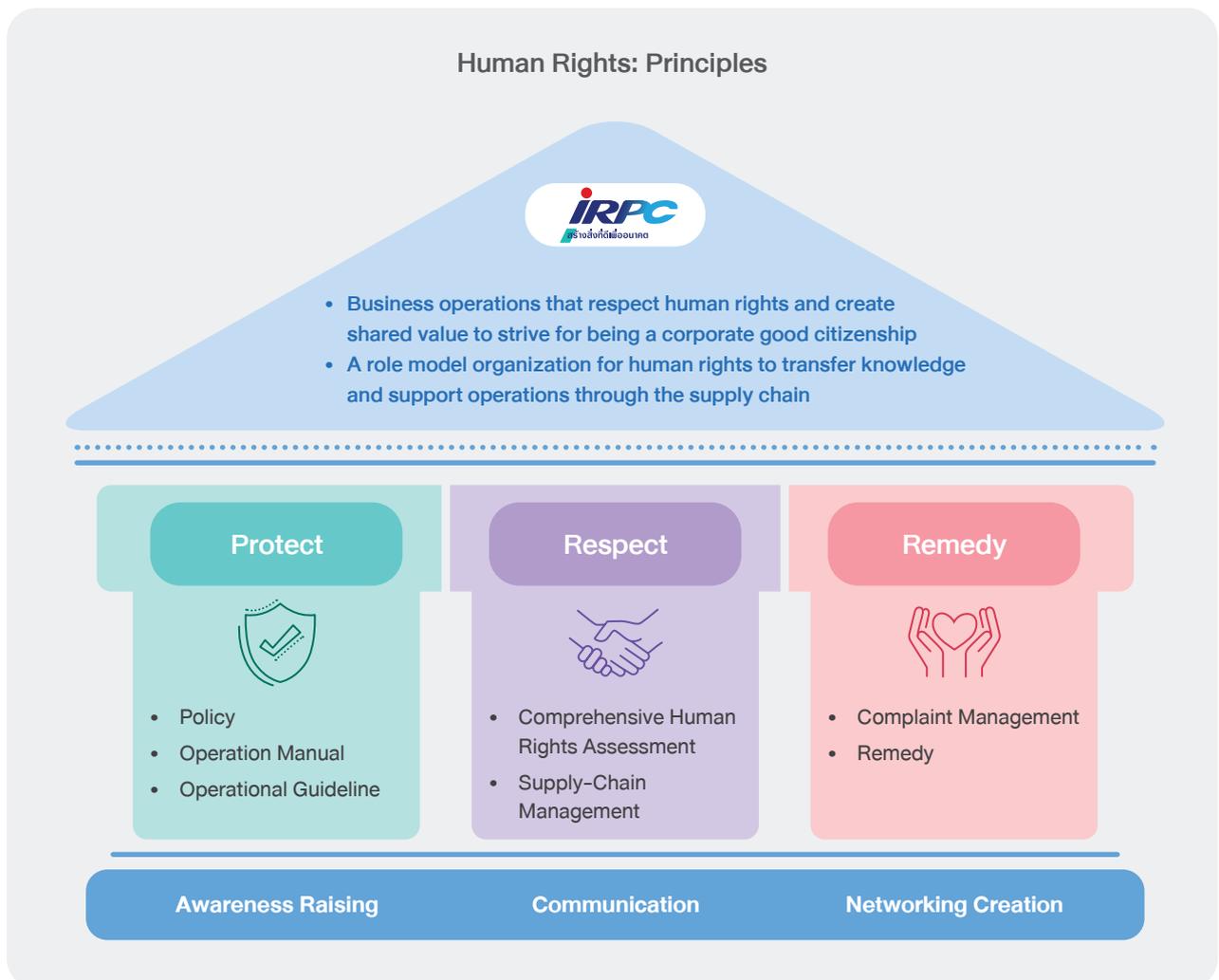
Human Rights Management Process

IRPC has formulated a strategy of embedding respect for human rights in all processes throughout the value chain, based on 3 principles: Protect, Respect and Remedy. The strategy must be advanced through effective communication, an awareness campaign and strong networking.

- Protect means applying human rights protection principles to the organization with the emphasis on supervisory oversight through the policies of IRPC and its subsidiaries. IRPC’s human rights policy must be communicated to all personnel in the organization, including suppliers, business partners and joint ventures. The Human Rights Management System handbook and Human Rights Risk Assessment Guideline must be published and distributed

to prevent human rights violations. In addition, roles and responsibilities on human rights issues are assigned to the Board of Directors, departments, and work units to ensure all stakeholders they interact with are covered. These include the Board of Directors, Corporate Governance Committee, Risk Management Committee, the Management, and organization development unit, etc.

- Respect means respect for human rights that can be measured through Human Rights Due Diligence and human rights management in Supply Chain Management.
- Remedy means remediation in case of human rights violations through complaint channels, witness protection and rehabilitation and remediation for persons impacted by human rights violations.



PROTECT

Human Rights Policy and Manual

IRPC has adopted the United Nations Universal Declaration of Human Rights (UDHR), International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work and UN Guiding Principles on Business and Human Rights as the basis of its human rights practices in its business operations, encompassing respect for labor rights, women's rights, children's rights and human dignity, including civil liberties and equality of persons protected

under Thai and international laws to enforce human rights and prevent human rights violations from IRPC operations throughout the supply chain.

For more information on human rights policy, please visit:



RESPECT

Human Rights Risks and Impact Assessment

IRPC reviews human rights risk in accordance with the "Human Rights Risk and Impact Assessment Methodology" throughout the value chain, consisting of IRPC's business operations and those of affiliated companies in which IRPC has or has no controlling interest and critical suppliers' business operations, covering all geographical areas in the industrial zones and on the premises of all 5 oil depots, namely Chumphon Oil Depot, Ayutthaya Oil Depot, Phra Pradaeng Oil Depot, Rayong Oil Depot and Mae Klong Oil Depot. Such risk assessment also applies to new investment projects. In 2022, IRPC engaged an independent external consultant to conduct human rights risk assessment and used the assessment results to analyze and draw up a set of measures to mitigate, rehabilitate and remedy human rights violations. According to the assessment findings, no salient issues were detected. However, there were risks within appetite, involving occupational health and safety of personnel working in the industrial zone, safety of communities surrounding the industrial zone and contractors working in the industrial zone as well as issues relating to working conditions of employees and contractors. IRPC has implemented measures to reduce risks, supervised and given priority to the implementation of such measures consistently. It has laid out work plans and set targets in developing online self-assessment on human rights to be completed in 2023.

IRPC operation area

100%



engaged human rights assessment.

New investment projects

100%



engaged human rights risks assessment through public opinion and related agencies.

Businesses with and without IRPC management control (including those who hold IRPC shares more than 10%)

100%



have human rights assessment.

Critical Feedstock Supplier

100%



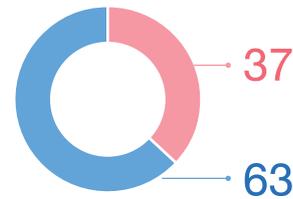
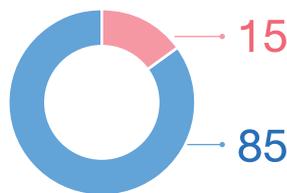
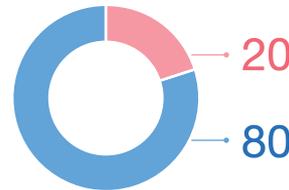
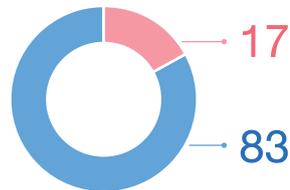
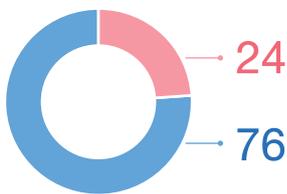
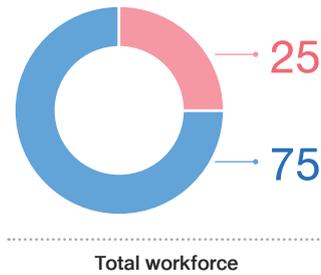
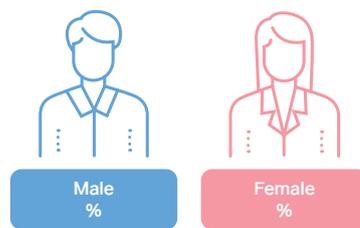
have human rights assessment.

Good Labor Practices

IRPC places importance on respecting employees' human rights and raises awareness of human rights through training and workshops. The company have continually improved welfare benefits for employees, including healthcare, as well as promoting good working conditions and work

environment, including measures to moderate negative attitude towards supervisors or prevent discrimination by supervisors. This can be achieved through a 180-degree assessment. In addition, IRPC is also committed to promoting career advancement of female employees by constantly monitoring the proportion of female executives in the organization on a yearly basis.

Performance



Notes: * Revenue generating entities include commerce, marketing, accounting and finance, innovation, strategies, planning and corporate business development

Number of Employees by Ethnicity

Ethnicity	% of employees in all positions	% of employees in Management
1. Thai	99.87	99
2. German	0.03	0.015
3. Japanese	0.05	0
4. Singaporean	0.03	0.015



Human Rights Policy Training for Employees

100%

Diversity at IRPC

IRPC and its affiliates promote diversity and inclusion in our workforces in order to improve our operations and the ability to achieve the goals set out in our strategies. The Diversity Policy prescribes non-discrimination of gender, age, race, culture, or religion, and encourages inclusivity among personnel across the organization. The company has announced the diversity and inclusion policy and its intention to create a culture of respect for diversity among personnel at all levels, including supporting and promoting diversity in all positions at the company. This is to ascertain that personnel at all levels are treated equally throughout the organization.

Freedom of Association

IRPC supports employees' rights to organize labor unions, which is clearly stated in the employee relations policy, with the aim of creating a channel for union members and senior management to discuss matters of mutual interest, including the company's business direction, workforce restructuring in response to economic situations, human resource development, employees' career path and welfare benefits. The senior management have always taken an interest in listening to employees' views and feedback on these matters. Both sides meet on a quarterly basis. In addition, employees may also make known their opinions through various channels, including employee satisfaction survey, etc.



At IRPC, there are a total of 7 labor unions, and **75%** of employees are union members. In 2022, the company received a total of 3 suggestions from labor unions and **3 cases have been resolved.**

Human Rights Risks in Supply Chain Management

IRPC communicates its human rights policy to critical suppliers and encourages them to strictly comply with the policy and practices. The company also assesses the suppliers' compliance with human rights principles in accordance with the code of conduct on human rights and labor rights section of the sustainable procurement handbook. The company also

checks the qualifications and age of contractors before allowing them to enter work sites to prevent the use of child labor. Training is also provided to instill in them a safety mindset to ensure safe working environments. In addition, suppliers are required to participate in seminars on ESG disclosures, including self-assessment by filling out questionnaire prior to ESG Onsite Audit.

REMEDY

Complaint Handling Process

IRPC has set guidelines for creation of complaint channels and efficient complaint handling process, including assigning a person to take responsibility for handling complaints as well as notifying the complainants of the decisions made to resolve their grievances.

Whistleblowing and Complaint Channels



E-mail:

auditor@irpc.co.th



Mail:

Chairman of the Audit Committee
IRPC Public Company Limited
555/2 Energy Complex, Building B, Floor 6th,
Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok 10900



Postal Office:

PO Box 35,
Sun Tower Building
Postal Office,
Bangkok 10900

For more information on Complaint Handling Process, please go to www.irpc.co.th

... In 2022, IRPC
received no complaints
 on human rights violations.

2022 Human Rights Model Organization Award

IRPC received the 2022 Model Organization for Human Rights Award from the Minister of Justice at the annual event organized by the Department of Rights and Liberties Protection, Ministry of Justice, to encourage public and private sector organizations, state enterprises and businesses of all sizes to apply human rights principles as an integral part of their management and operations at all levels. This is to ensure people respect one another's human rights and to prevent human rights violations against any personnel, customers, or consumers in order to reduce risks of violation or complaints arising from human rights violations.



Human Resource Management

IRPC believes that an organization's growth depends on the quality of its personnel. Therefore, the company has made it a policy to constantly improve and modernize the management and human resource development to correspond with fast-changing technology in line with the internationally accepted standards as well as to foster desirable behaviors among its employees to strive to be GOOD (good with responsibility), GREAT (great sense of business acumen) and GROWTH to success (freethinking, accountability leading to success): G3, and to make employees the main driving force to transform IRPC into a High Performance Organization. In 2022, IRPC redoubled its efforts to improve human resource management to develop effective workforce and prepare them to take on this important role that will propel the organization forward on a pathway towards stable and sustainable growth as well as to raise IRPC's competitive edge to the next level ready to take on competitors in the same industry sector, domestic or international.

Materiality Assessment

Good human Resource Management and the creation of new corporate values are key contributing factors to ensure IRPC's strategy will lead to the fulfillment of its vision and goals. The human resource strategy consists of 3 components as follows:

People Readiness

Strategic Workforce Planning (SWP), a systematic analytical process for workforce planning in line with all business strategies to ensure that the company has at its disposal appropriately skilled personnel well attuned to existing and future business plans.

Talent Pool

Human resource development to get employees ready to support the company's strategies and business plan include:

- 1.1 Create a management pool and to develop their readiness to succeed retiring executives in strategic positions, such as Line positions and executives in strategic positions whom IRPC assigns to assume positions under secondment in accordance with IRPC Group way of conduct with the following annual goals:

- ▶ **2022:** Succession Plan N-1/N-2 & N-3
- ▶ **2023:** Succession Plan N-4 & Review : Succession Plan N-1/N-2 & N-3
- ▶ **2024:** Complete Succession Plan for all levels below N-4

- 1.2 Expert Pool: Create a pool of specialists that are crucial for the fulfillment of the company's vision with the following annual goals:

- ▶ **2022:** Pilot Model in some areas of expertise
- ▶ **2023:** Expand the scope of work units that need to create Specialists

- 1.3 Create and develop Young Leaders pool & development program) to support growth and new businesses. Initially, 10 young leaders will be created each year for a period of 3 consecutive years.

Development

Developing executives to be ready in both business management and human resources management through the LEAD Program (for newly promoted executives) and Next program (for executive candidates) with the following annual goals:

- ▶ **2022:** Focus on education, with a test score of over 70%
- ▶ **2023:** Emphasize on presenting work portfolio that correspond to the company's vision by applying knowledge, competencies into actions through assignment or job rotation in order to prove good potential for further development and to increase work experience, with turnover of not less than 20%.

Reforming Organization

Productivity efficiency to improve work efficiency to be measured against EBITDA/Head.

Engagement

New Performance Management System a management and rewarding approach with new performance indicators for assessment and new way to determine compensation to reflect actual performance.

Engagement System Improvement Adjust mechanisms and processes for career management and a performance management system that aims to incentivize Performance-Based Pay in order to attract and retain employees with superior performance and potential for further development.

Core Value

New Core Behaviors for Driving New Visions Adjustment of core behaviors that are crucial to fulfill new visions and strategic goals with GOOD (good with responsibility), GREAT (great sense of business acumen) and GROWTH to success (freethinking, accountability leading to success): G3

Performance

In 2022, 90% of employees participated in the employee engagement assessment, the findings indicated that 87% of them were engaged. When compared with other domestic and foreign companies in the same industry, it was found that the engagement level was in the Top Quartile. This reflects positively on IRPC for making the effort to improve employee engagement by communicating its vision and strategic goals to employees at all levels that persuaded them to be more engaged.

Target



Number of employees

5,317

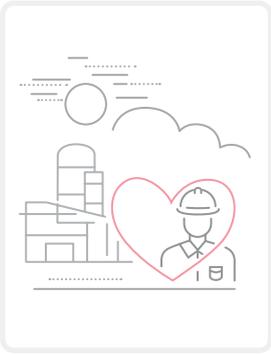
Employee training hours

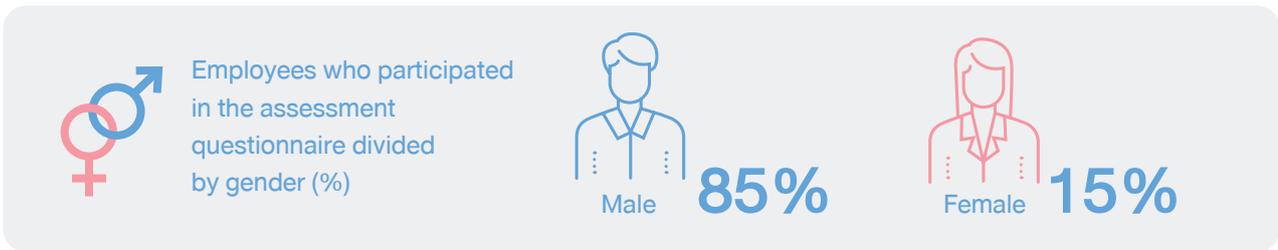
40.84 hours
per person per year

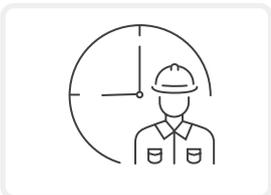


Human resource
development expenses

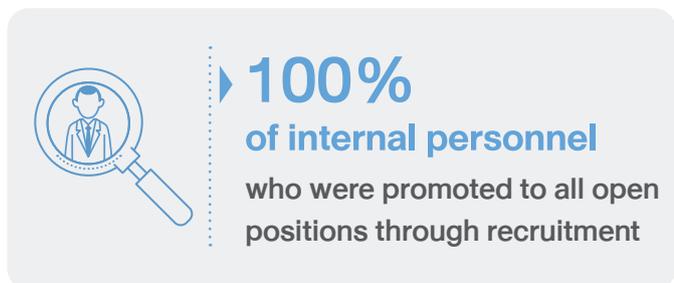
66.8 million baht

Performance Indicator	Target 2021	Performance 2021	Target 2022	Performance 2022	
	Employee engagement (%)	80	85	80	87
	Employees participating in the assessment questionnaire (%)	93	92	93	90



Performance Indicator	Target 2021	Performance 2021	Target 2022	Performance 2022	
	Average employee training (hours/person/year)	40	28	40	40.84

Performance Indicator	2018	2019	2020	2021	2022	
	Return on Investment in Human Resource Development (Million Baht)	1,477	2,077	1,566	264	291.55



Creating Social Value

IRPC recognizes the importance of creating shared value for communities and society through corporate innovation along with the expertise of personnel. It has implemented various projects that focus on improving the quality of life of the community, fostering educational opportunities for young people, promoting public health and conserving natural resources and protecting the environment. It is our sincere belief that business and the community and society at large can grow in tandem. We know for certain that when the community and society achieve a higher standard of living, the company will gain wider acceptance and be able to grow our business more sustainably. Our strategy for creating shared value is as follows:



Promote CSR to make positive social impact



Build good relationships through stakeholder engagement



Create awareness of information and facts among stakeholders through Community Communication

Project Prioritization



SUSTAINABLE DEVELOPMENT GOALS

Health & Well Being

3 GOOD HEALTH AND WELL-BEING

8 DECENT WORK AND ECONOMIC GROWTH

Education

4 QUALITY EDUCATION

Environment Friendly

13 CLIMATE ACTION

15 LIFE ON LAND



Positive impact to society and community in 2022 (Social/Environmental Benefit KPI)

- **Community > 2,500 persons** have access to public health services from mobile medical unit and clinic Pannamjai
- **35 projects** Approximately 20,000 households benefit from health promotion through activities and projects of the Health Promotion Fund.

- **> 20 activities** organized to provide livelihood training and skill development through learning centers, both online and offline.

- **> 3,400 trees** were planted around the industrial zone by volunteering IRPC employees.



Positive impact to society and community in 2022 (Social/Environmental Benefit KPI)

• 250 persons

benefit from activities for the elderly in Rayong to help them develop new skills in various fields

• > 1,000 households

received help and emergency relief from flooding in Rayong Province.

• Prosthetic Leg Project

A total of 94 prosthetic legs were produced and delivered free of charge to persons with disabilities in Rayong and nearby provinces.

• Prosthetic Hand Project

Prosthetic fingers were produced and delivered to 12 disabled carpenters and prosthetic hands delivered to 8 disabled persons.

• 6 community enterprise groups

received training and skill development to operate businesses until they start generating income.

• 373 scholarships

given to students with good grades who are in need of financial support.

• > 26,500 people

participated in training to develop new skills provided by learning centers.

• > 5 activities

organized to support environmental actions of the community, such as beach cleanup, planting trees in community forests and World Ocean Day

• 2 locations

being studied and developed into environmental conservation areas in Rayong Province.



Positive impacts to the company's business in 2022 (Business Benefit KPIs)

- 1) Organized 4 activities to promote product awareness, White Bear fertilizer and Floating Solar of IRPC.
- 2) 13 factories passed CSR-DIW standard certification, which can be used to obtain certification for other standards, such as Eco Factory, EIZ, EIT.
- 3) No complaints were filed, or public protests held that led to the suspension of the company's operations.
- 4) Cultivate volunteerism among employees, successfully persuading 1,500 employees to volunteer for activities that benefit the community.
- 5) Build public trust in the company and create brand awareness.
- 6) Innovation and knowledge development within the organization
- 7) Increase sales of the company's products
- 8) Promote GOOD, GREAT and GROWTH mindset among employees and for employee engagement.

Ongoing Projects

In 2022, IRPC implemented projects that focus on creating value for communities surrounding the industrial zone and the society as a whole. Details are as follows:

Prosthetic Leg Project

IRPC has implemented a prosthetic leg project by donating Polypropylene (PP) plastic pellets to the Prostheses Foundation under the patronage of HRH Princess Mother for the production of prosthetic legs for amputees to help improve their quality of life under the Creating Shared Value (CSV) approach. In so doing, the company was able to use its commercial products for the benefit of people with disabilities, creating shared value in the process. The project has been ongoing since 2011. IRPC has donated Polypropylene pellets to the foundation for the production of prosthetic legs delivered to persons with disability free of charge.

IRPC's plastic pellet products have been delivered for the production of prosthetic legs at the head office of the Prostheses Foundation in Chiang Mai for distribution not only throughout Thailand but also to neighboring countries, such as Malaysia, Myanmar, and Cambodia. The foundation's prosthetic leg production facilities were set up at 95 hospitals across the country. In addition, the plastic pellets were also sent to the prosthetic leg factory that the Prostheses Foundation helped set up at the military hospital in poverty-stricken Republic of Burundi, Republic of Senegal where many people lost their limbs during political unrest, and in Banda Aceh, Indonesia, where many had their legs amputated after being injured in the tsunami disaster and political unrest as well as other causes.



Between 2011 and 2022
(as of September 30, 2022),
a total of
35,955
prosthetic legs
have been produced and
delivered to people who
needed them using IRPC's
plastic pellet products.

In addition, IRPC in collaboration with the Prostheses Foundation under the patronage of HRH Princess Mother to host the 157th mobile prosthetic production workshop at IRPC Sport Complex, Rayong Province on July 17-22, 2022. The company provided financial support and the use of facilities to host the prosthetic production workshop, which made 94 prosthetic legs for persons with disability in Rayong and nearby provinces free of charge.

Prosthetic Hand Project

The Prosthetic Hand Project is a project initiated by Thai Reach Group, consisting of medical personnel and staff of Sirindhorn Hospital in Khon Kaen Province. They produced prosthetic hands with 3D printing technology, using Thermoplastic Polyurethane (TPU) and Polylactic Acid (PLA). The design of the prosthetic hand, inspired by simple mechanisms of hand puppets. Cheaply produced polymer parts and components of the prosthetic hand are held together by strings and rubber bands that can be easily repaired, reassembled when damaged or replaced when the user gains weight or their physiology changes. Thanks to the low cost of production, the Prosthetic Hand Project made it possible for the company to help society and improve the quality of life of people with disabilities, giving them quicker access to prosthetics. This corresponds to IRPC's corporate social responsibility concept of building networks to help society using its commercial products, innovation, and body of knowledge.

In 2022, IRPC conducted research and development of products for use in the production of prosthetic hands in collaboration with Sirindhorn Hospital in Khon Kaen Province. The material and chemical R&D team from IRPC Innovation Center delivered TPU and TPV Filament products to the Thai Reach Group at Sirindhorn Hospital in Khon Kaen Province for usability testing so that testing results and feedback can be used to further develop products with quality and properties best suited for the production of prosthetic hand and fingers for persons with disability using 3D printing technology.

In the meantime, IRPC has also supported Sirindhorn Hospital in Khon Kaen Province to implement the Carpenter Project: The 3D Printed Hand Prosthesis for Carpenters and Others, is a training program to transfer 3D printing technology skills for the production of prosthetic hand and fingers to public health personnel involved in care for disabled persons. IRPC also donated 10 3D printers to hospitals and education institutions in Sukhothai, Kamphaeng Phet, Tak, Phitsanulok, Petchabun and Uttaradit provinces, with disabled persons who work as carpenters at Carpenters Cooperative in Ban Kluai Subdistrict, Mueang District, Sukhothai Province as case study in the skill training project held on August 29-31, 2022 at Ban Mor Resort, Sukhothai, with 36 participants who produced prosthetic fingers for 12 disabled carpenters and prosthetic hands for 8 others.

Project to produce orthotics from recycled plastics

At present, Polypropylene is one of the main raw materials used in the production of prosthetic legs for amputees as well as other prosthetic components for persons with disabilities and patients. The production process of prosthetics generates a lot of plastic waste, creating problems for prosthetic production workshops which are required to properly dispose of such waste or recycle them. This poses a daunting challenge as such plastic waste materials tend to be chunky and hard, making it difficult to find junk buyers who will take them. Recycling such waste is also complicated. Such wastage and environmental problems need to be addressed.

To solve the problems, IRPC took the initiative to create a project to produce orthotics from recycled plastics in collaboration with Sirindhorn National Medical Rehabilitation Institute, Department of Medicine, Eastern Polypack Co., Ltd. (an IRPC customer) and other network partners, to pursue the following objectives:

1. To reduce the huge quantity of waste materials that would otherwise be disposed of.
2. To alleviate the problem of plastic waste which could adversely affect the community and the environment.
3. To create social products taking advantage of IRPC's quality products, innovation, and knowhow.
4. To help improve the quality of life of people with disabilities and patients who would not otherwise be able to afford costly prosthetics.

In 2022, IRPC took delivery of PP plastic scraps from the prosthetic production process from its network partners, namely Sirindhorn Institute, Sirindhorn School of Prosthetics and Orthotics, Prostheses Foundation and Veterans Hospital, for recycling. The recycled plastic pellets were sent to Eastern Polypack Co., Ltd. for the production of 3 mm thick plastic sheets and donated them to Sirindhorn Institute for usability testing as raw materials to test the production of Ankle, Foot Orthosis (AFO), or braces for ankle/foot for people with disability or patients with abnormal foot structure, foot deformity, muscle weakness of the lower leg, stroke patients, patients with congenital cerebral palsy, etc.

In addition, IRPC also delivered recycled PP sheets to the Prostheses Foundation to test production of orthotics for a young patient who has congenital deformity in the left foot. According to testing results, the orthotics produced from recycled plastic are functioning and effective. The Prostheses Foundation also experimented with the recycled PP sheets producing artificial limb for a dog whose leg has been amputated. The dog was sent to the foundation from the Faculty of Veterinary Science, Chiang Mai University. Thanks to the artificial limb, the dog was able to walk again.

Lam Sai Yong Model Project/IRPC Smart Farming

Lam Sai Yong Model Project was established in mid-2014 in Lam Sai Yong Subdistrict, Nang Rong District, Buri Ram Province, with the objective to apply water resource management knowledge to provide solutions for drought-stricken communities. Under the project, water storage areas were developed and effectively managed to increase water supply for irrigation during the dry season. IRPC has since introduced the Lam Sai Yong Model water resource management project to other areas, such as Ubon Ratchathani, Uttaradit, Sisaket, and Udon Thani provinces. IRPC learned that water shortage is a huge and complex problem that cannot be resolved by piecemeal measures. The company then relaunch the Lam Sai Yong Model with a new integrated management approach, encompassing the Water-Food-Energy Nexus, to bring about positive change and mitigate impact of the seasonal water shortages that tend to have knock-on effects on other aspects of the company's business directly and indirectly.

In 2021, IRPC launched IRPC Smart Farming, developed and expanded from the Lam Sai Yong Model Project by applying appropriate agricultural technology in combination with innovations in an area of 35 rai at the Center for the Development of Persons with Disabilities, Udon Thani Diocese, designated as IRPC Smart Farming project in

collaboration with the Center for the Development of Persons with Disabilities. The project provides opportunity for persons with disabilities, the elderly, including carers of bed-ridden persons with limited mobility, to learn agricultural techniques appropriate for their capabilities and conditions so that they can earn extra income and support themselves and family. The 3-year plan (2021-2023) receives support from IRPC in acquiring appropriate and simple technologies and innovations suitable for local conditions and way of life of disabled persons.

In this regard, the work principles of the late HM King Bhumibol Adulyadej the Great, Rama IX have been applied to set the vision for the project implementation. This refers to “combining agriculture techniques with technology suitable for local conditions and way of life of the community based on frugality, simplicity and maximum benefits.” Supported by education, training and guidance of experts, quality of life of persons with disabilities can be improved to enable them to make a living in farming, earn income and produce quality and marketable crops. In 2022, the company has taken the following actions:

Lam Sai Yong Model Project in Buriram Province

In 2022, IRPC implemented the improvement and restoration of Nong Yang village's water supply system project, located in Nong Yang Village, Lam Sai Yong Subdistrict, Nang Rong District, Buriram Province. The village's water supply system with a service life of more than 20 years had fallen into disrepair. Most of the equipment was damaged and water leaking all the time.

At present, 4 communities: Ban Nong Yang, Ban Nong Na, Ban Nong Sai, and Ban Khok Yai, home to more than 370 households, depended on Ban Nong Yang's water supply system for daily water consumption and irrigation of their kitchen gardens for livelihood during the dry season. The communities have been operating their own water supply system, including collection of water charges as well as maintenance/repair.

IRPC recognizes the importance of providing communities with access to clean water for consumption. Therefore, it has provided financial support and dispatched employees who are engineers from the company's central utility operations volunteering to help repair and restore Ban Nong Yang water supply system. Once the repair works had been completed and clean water supply became available again, the engineer volunteers also taught the villagers how to properly operate and maintain the water supply system by themselves.

IRPC Smart Farming Project in Udon Thani Province

In 2022, the company continued the IRPC Smart Farming project from 2021 in an area of 35 rai at the Center for the Development of Persons with Disabilities, Udon Thani Diocese, in Ban Sri Wattana, Ban Dung District, Udon Thani Province, which is an agricultural area where training is organized to provide agriculture, animal husbandry and vocational training. In addition, the project provides opportunity for persons with disabilities, the elderly, including carers of bed-ridden persons with limited mobility, to learn agricultural techniques appropriate for their capabilities and conditions so that they can earn extra income and support themselves and family. The 3-year plan (2021-2023) receives support from IRPC in acquiring appropriate and simple technologies and innovations suitable for local conditions and way of life of disabled persons. In 2022, the company has taken the following actions:

- **Implementing the IRPC Smart Farming project through employment creation under PTT's Restart Thailand project, for the second year**

As PTT has supported the government policies under the Restart Thailand project to jumpstart the Thai economy and for social development by hiring workers and new graduates (vocational certificate-Bachelor's degree) to participate in the Smile Innovation Project (Smart Farming & Smart Marketing) of PTT Group.

In 2022, three employees of Restart Thailand project under the Smart Farming skill training program were allocated to IRPC to work and help run IRPC Smart Farming project at the Center for the Promotion of Persons with Disabilities, Udon Thani Diocese, from January 1, 2022, until December 30, 2022, under the supervision of the social enterprise team (Bangkok). They were tasked with corporate reputation and business relations and other responsibilities in accordance with the policy and performance indicators determined by PTT.

- **Renovation and extension of shipping container offices**

the Center for the Promotion of Persons with Disabilities, Udon Thani Diocese, has neither dedicated office nor meeting/visitor reception room, IRPC donated shipping container offices in good condition to the Center and had them installed and implemented interior and exterior decoration as well as landscaping, complete with wheelchair ramps for person with disability. The office, meeting room and reception facilities are powered by solar energy.

- **Donating "Aiang Agriculture Spraying Drone"**

RPC donated "Aiang Agricultural Spraying Drone" with 10-liter capacity for use by the Center for the Promotion of Persons with Disabilities, Udon Thani Diocese. The objective is to help develop and enhance the capabilities of disabled farmers with the help of appropriate technology to increase productivity. The smart drone is being used for spraying fertilizers, nutrients, hormones, which are essential for crop growth. Thus, saving time and labor costs while increasing income (by offering spraying services to others for a fee). This not only provide disabled farmers with livelihood but also help build their self-esteem as operators of agricultural drone.

The Center for the Promotion of Persons with Disabilities, Udon Thani Diocese, selected two persons with disabilities to undergo training as drone operators. They learned both theoretical and practical knowledge from drone dealers. The two drone operators have since been registered as drone pilots with the Civil Aviation Authority of Thailand.

In 2022, additional training sessions were provided to the disabled drone pilots who learned more advanced skills to use the drone for different applications as well as to master different flight maneuvers so that they can more effectively control the drone spraying fertilizers, nutrients, and hormones for different crops in different growing patterns and terrains.

- **Integrated fish and poultry farming project**

IRPC has provided financial support to implement the construction of egg-laying chicken coop over a one-rai reservoir for fish farming, enabling disabled farmers to earn extra income from selling eggs and fish.

The hen house was designed in a way that allows people with disabilities in wheelchairs to work efficiently and conveniently. The chicken coop was built to accommodate chickens without being too crowded. The layout of the chicken cage is designed for easy cleaning. A nipple feeding system is installed for ease of watering and preventing the spread of germs. A sprinkler system is installed on the roof using solar energy to keep the hen house cool, reducing the mortality rate of chicken, especially during summer. In 2022, (Jan 1-Dec 15, 2022) the Center produced and sold more than 42,000 eggs.

As for the fish farm, the Center for the Promotion of Persons with Disabilities purchased 30,000 fishlings of such species as tilapia, barb, Chinese fish and catfish, and released them into the pond and raised naturally, without being fed, thus saving production cost. The fish eat chicken droppings as they fall through from the coop. In addition, installing a solar roof sprinkler system not only reduce the heat of the hen house but also increase dissolved oxygen levels in the pond. In 2022, the Center harvested and sold about 600 kilograms of fish.

- **Smart Greenhouse Vegetable Garden Project**

IRPC donated and installed a smart greenhouse vegetable garden to the Center. Inside the greenhouse, vegetables are grown in raised beds, equipped with an automatic watering system. This helps reduce daily chores of persons with disabilities. The greenhouse makes it possible to grow vegetables out of season that fetch high prices. In 2022, the Center grew salad greens (green and red oak lettuces), mustard greens, dill, coriander and spring onions. The Center harvested and sold about 280 kilograms of vegetables. During the rainy season, coriander and spring onions can be sold for Baht 100 per kilogram.

IRPC Smart Farming Project, Rayong Province

This project was initiated in 2022 by the IRPC Smart Farming working group under the name Integrated Agro-Tourism and Learning Center Project, Yai Da Garden “Jae Boonchuen” (IRPC SMART FARMING) at Yai Da Garden, Jae Boonchuen, Taphong Subdistrict, Mueang District, Rayong Province, covering an area of 30 rai, located near the company's business operations area. An agro-tourism destination, comprising mixed fruit orchard based on the sufficiency economy philosophy of the late King Rama IX as a guiding principle for the development of body of knowledge. The project received the Outstanding Award in the tourism attraction category at the 11th Thai Tourism Industry Award Presentation.

The IRPC Smart Farming Project in Rayong Province aims to develop Yai Da Garden, “Jae Boonchuen,” which is located close to IRPC's business operations area, as a learning center that is open to study visits and agro-tourism for the benefit of the community, with Yai Da Garden as the focal point for the following activities:

- Local soil sampling to analyze the nutrient content in the soil enabling farmers to select fertilizers and nutrients suitable for soil conditions
- Retail space for products of the local community
- Create employment and income for members of the community, such as jobs for local people in tourism-related services, etc.
- Area for study, testing and demonstration of Nano Zinc Oxide by combining with local wisdom

In 2022, IRPC surveyed, designed, and implement landscaping to make Yai Da Garden more attractive and suitable for study visits and agro-tourism. A 5-kW Floating Solar system was installed to generate electricity for agriculture and other facilities at Yai Da Garden during daytime.

On May 23, 2022, IRPC organized an Open House activity at Yai Da Garden “Jae Boonchuen” to publicize and promote the Smart Farming project, Yai Da Garden, “Jae Boonchuen” through television programs and various online media. The event generated public interest. As a result, groups of interested people from the public and private sectors totaling 2,600 people visited Yai Da Garden on study

We Care by IRPC Project

This is a project through which IRPC provides assistance and emergency relief to stakeholders and the society at large in the event of natural or man-made disasters, including adverse impacts from COVID-19 pandemic and flooding, etc. In 2022, the company took the following actions:

- Supplied 300 Polypropylene field hospital beds to field hospitals in Tha Ruea District, Ayutthaya Province and Rayong Province.
- Provided 250 kilograms of plastic bags for infectious waste to Tha Ruea Hospital in Ayutthaya Province
- Donated 2,700 bottles of drinking water and beverages to flood victims in Thap Ma Subdistrict, Ban Na Subdistrict and Phe Subdistrict through Rayong Disaster Prevention and Mitigation Office.
- Provided financial support for 200 survival bags for the Choeng Noen Subdistrict Tambon Administrative Organization in Rayong Province
- Delivered 1,000 survival bags for flood victims in Thap Ma Subdistrict, Noen Phra Subdistrict, Nam Khok Subdistrict and Rayong Municipality.
- Donated 4 truckloads of sand to build barriers against floodwater to Noen Phra Subdistrict Municipality, Rayong Province
- Sponsored emergency relief operations Mueang District of Rayong Province to help flood victims in Ban Suan Kaew, Tubma Subdistrict by providing basic repair services for household appliances and motorcycles damaged by flood on September 19-23, 2022, with students from IRPC College of Technology volunteering to help.
- Delivered 500 survival bags for flood victims in the area around IRPC Ayutthaya Oil Depot.
- Donated rice, dry food, and drinking water to temples in the area around IRPC Ayutthaya Oil Depot hard hit by flooding, namely Wat Bang Muang, Wat Thep Khantharam and Wat Pho En.
- Donated survival bags, adult diapers, and cooked meals to help flood victims in northern Bangkok areas, namely Chatuchak, Don Mueang, Lat Phrao, Bang Khen, Bang Sue, Sai Mai, and Lak Si districts.

Performance Indicator	Target 2022	Performance 2022	Target 2023
 Community Satisfaction (%)	 95	 99	 78



Cash Contribution
40,009,791
 baht



Time Volunteered
5,200
 hours



In-kind Giving
7.09
 million baht



Management Overhead
832,814
 baht



Charitable Donation
12,560,471
 baht



Community Investment
24,508,964
 baht



Commercial Initiatives
2,940,356
 baht

Awards of Recognition for Success
IRPC won the 1st runner-up award at “UN Women 2022 Thailand WEP Awards”
for the 2nd consecutive year



IRPC received 1st runner-up “UN Women 2022 Thailand WEP Award” in the categories of gender equality promotion through community and industrial activities, and. Community Engagement & Partnerships for the 2nd consecutive year from the United Nations Organization for the Promotion of Gender Equality and the Empowerment of Women, or UN Women.

The “UN Women 2022 Thailand WEP Awards” is the only award presentation ceremony in Thailand and Asia Pacific that seeks out role model businesses that promote gender equality and empower women. In 2022, Integrated Agro-Tourism and Learning Center Project, Yai Da Garden “Jae Boonchuen” IRPC Smart Farming was awarded 1st runner-up for IRPC’s promoting and supporting Mrs. Boonchuen Phokaew a female community leader in Taphong Subdistrict, to be recognized as a role model farmer. to inspire female farmers everywhere, both in the communities and in other provinces across the country to take note of the crucial roles played by women as a business owner and income earner for herself and the community on an equal footing with men, in line with the Sustainable Development Goals SDG1: No Poverty, SDG5: Gender Equality, SDG8: Good Job and Economic Growth

Sustainability Management in Environmental Dimensions

Circular Economy Management

The global proliferation of waste is one of the most pressing environmental issues that has yet to be brought under control. Meanwhile, the world population is expected to rise significantly in the foreseeable future, leading to even greater demand for consumption of natural resources. All this is happening at a time when the supply chain and post-consumer waste management are not nearly as efficient as they should be. The world faces the unenviable prospect of scarcity of resources and environmental disaster unless the mounting waste problem is dealt with more decisively and cost-effectively. Mindful of these common threats to our planet, IRPC has adopted Circular Economy as one of the main sustainability strategies while establishing a network of cooperation with external parties in the public, private and people sectors to tackle, prevent, mitigate, or solve such problems. To this end, the company also emphasizes the need to promote awareness, devise guidelines on how to use limited resources wisely to minimize waste and efficiently manage waste in a more sustainable manner.

Materiality Assessment

	Enterprise-level Indicators	Short-term/Long-term Indicators	Outcome
	<p>Level of indicators for measuring circular economy, according to the British Standards Institution: Framework for implementing the principles of the circular economy in organizations - Guide (BS 8001:2017)</p>	<p>Apply the principles of the circular economy in PTT Group's business operations to achieve circular economy maturity level 3 according to BS 8001:2017 by 2030.</p>	<p>Assess the level of application. circular economy principles for PTT Group based on BS 8001:2017 for self-assessment to acknowledge the circular economy maturity level.</p>
	<p>Determine management strategies based on the circular economy that maintains the 3Rs concept: Reduce, Reuse and Recycle</p>	<ul style="list-style-type: none"> • Maintain zero waste to landfill policy • Focus on building networks to bring plastic waste from the production process (Post Industrial Recycle: PIR) and to bring used plastic for recycling (Post Consumer Recycle: PCR), while using natural products for maximum benefit. 	<p>Continually add circular economy projects to increase business opportunities to produce Recycled Compound Resin, such as PP Recycled Compound, PS Recycled Compound, ABS Recycled Compound and Bio Compound.</p>

Key Performance

IRPC has continuously implemented circular economy projects which are being assessed by the circular economy maturity level of the PTT Group based on BS 8001:2017 for self-assessment to acknowledge the level of circular economy maturity level for the second consecutive year, including the implementation of projects throughout the value chain to bring waste plastic from the production process (Post-Industrial Recycled) and recycled plastics (Post-Consumer Recycled) through cooperation with KFC for the third consecutive year, expanding to 21 branches in order to reuse the plastic as much as possible including the implementation of the project according to the 3Rs principle (Reduce, Reuse, Recycle) in order to make the most efficient use of resources.

Major Initiatives



IRPC developed products that reduce the use of limited resources, including

- **Joint project with Daiso**

Bio-based products include Polypropylene Grade W1561RW, or Polypropylene (PP) compound with 30% Thai wood pulp powder, an industrial waste, as substitute for natural wood. The plastic compound is used to manufacture lightweight plant pots that look like wooden ones. The product received certification US FDA 21 CFR 177.1520 certification (Olefin Polymers), Regulation (EU) No. 10/2011



- **Joint project with KFC**



IRPC has collaborated with Thaiworldware Polyproducts Co., Ltd. to manufacture cutlery products based on Bio-based Polystyrene PK150B20 for use in KFC restaurants, by mixing High Impact Polystyrene (HIPS) with 20% starch content. Thus, increases the use of natural products while reducing non-renewable materials. The products received US FDA 21 CFR 177.1640 (Styrene Polymers), Regulation (EU) No 10/2011

- **Joint projects with Amazon**

As for construction material and decorative products, IRPC developed R-MAXX L-Cement made from plastic mixed with cement, which can be easily injection-molded instead of cast-molded. Such compound, strong, durable with cement-like textures, can be used for the manufacture of a wide range of decorative items, leading to cooperation between IRPC and PTTOR to produce such as attractive lamp shades and plant pots that blend in well with Cafe Amazon's Green Concept decor.





REUSE

“We Care by IRPC” Project

As the crisis brought on by COVID-19 pandemic continued to play out, shortage of hospital beds for patients became a severe problem for many health care establishments. To help alleviate the problem to make sure patients receive timely treatments, IRPC collaborated with partners, including Success Plast Co., Ltd., manufacturer and distributor of corrugated plastic sheets, and RMC Intergroup Co., Ltd., a manufacturer and distributor of PP BOARD, under “We Care by IRPC” project to provide beds for field hospitals and isolation centers for patients awaiting treatment. POLIMAXX Polypropylene PP resin was used in the production of field beds, with properties, such as strength, durability, waterproof, maximum load capacity of 200 kilograms, that can be regularly cleaned and disinfected and repeatedly used for patients for up to two years. These waterproof, lightweight beds can be safely cleaned to remove bodily fluids and then disinfected by disinfectant solutions or heat treatment, do not take up much space, is easily moved, assembled, and can be recycled safely.



RECYCLE

IRPC, as a sustainable petrochemical and oil refining operator, gives utmost priority to management of our environmental impact, focusing on optimization of resources and reduction of production waste by creating an Eco Solution Model for plastic waste management from the production processes to the end of product life to ensure efficient recycling in a closed loop operational system that does not allow post-industrial recycled (PIR) plastic waste to escape. The Company also undertakes to create innovative solutions, adding value to PIR in accordance with the Eco Solution Model in a plastic waste

management effort throughout the entire supply chain. In addition, IRPC has also established Collector Network to collect plastic waste from household, commercial, industrial and services sectors, known as Post-Consumer Recycled (PCR), to be sorted according to recycling purposes. Examples of such project include:

- **To collect used water filters made with block copolymer type**

of PCR Polypropylene product group, in cooperation with partner, Ban Krong Nam, for recycling as raw materials for the manufacture of green plastic products, in cooperation with Qualy a stationery brand, under its creativity, happiness and sustainability concept.



- **The ongoing IRPC-KFC**

single-use plastic waste management project was joined by the Mirror Foundation, in collecting, sorting, cleaning, and delivery of plastic waste to our partner, Best Polymer International Co., Ltd. to produce PS Recycled Compound from single-use plastic mixed with High Impact Polystyrene (HIPS) for use in the manufacture of brand name watch presentation cases and jewelry boxes by another partner, Cosmo Group Co., Ltd.



RMM151 (PCR PS 45% + HIPSUB 55%)



- **RPC has also partnered with Best Polymer International Co., Ltd.**

in upscaling Polypropylene used in battery cases and HDPE in lubricant packaging from PTT Fit Auto Car Service Centers, turning them into raw materials for the development and creation of plastic and non-agricultural wood composite, which can be used to manufacture extruded sheets to create durable, moisture resistant and easy-to-wipe clean products that have wood-like textures in any color as required. Such composite is suitable for shelving, cupboards, tables as well as store decoration at PTT FIT Auto Car Service Centers.

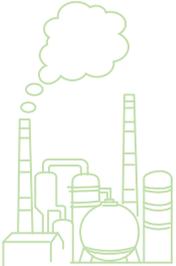
Operational Eco-efficiency

Opportunities and Challenges

Mindful of the need to continually find sustainable solutions to address the country's environmental problems, from solid waste and air quality to wastewater and deteriorating natural resources through proactive policy-making and national agenda setting, such as the national agenda to tackle air pollution linked to unsafe dust levels, and seek public-private collaboration to phase out and ban single-use plastic, etc.

IRPC places utmost importance on the cost-effective use of resources in the production processes, mitigation of impact from its operation on the environment that may adversely affect communities and the society at large, throughout its value chain. The company has formulated policies on quality, security, safety, environmental protection, and energy management. This includes the implementation of standard systems, such as ISO 14001, ISO 5001, and Operational Excellence (OEMS) in environmental quality management to reduce the impact on society, communities and to achieve eco-efficiency in production processes.

Materiality Assessment

	Enterprise-level Indicators	Short-term/Long-term Indicators	Outcome
	Energy consumption indicators	Short-term indicators <ul style="list-style-type: none"> Total enterprise energy consumption in 2022 not exceeding 68.5 million gigajoules Energy consumption indicator for 2022 equals to 88% Long-term indicators <ul style="list-style-type: none"> Total enterprise energy consumption target in 2025 not exceeding 57.1 million gigajoules Energy consumption indicator for 2030 equals to 83% 	<ul style="list-style-type: none"> Total enterprise energy consumption in 2022 not exceeding 60.2 million gigajoules Energy consumption indicator for 2022 equals to 87.92%
	Amount of hazardous waste disposed of in landfills <hr/> Amount of non-hazardous waste disposed of in landfills	Amount of industrial waste disposed of in landfills: zero. <hr/> Amount of industrial waste disposed of in landfills: zero.	Zero industrial waste disposed of in landfills since 2019 <hr/> Zero industrial waste disposed of in landfills since 2019
	Volatile organic compounds	Short-term indicators <ul style="list-style-type: none"> olatile organic compounds index in 2022 equals to 1,906 Long-term indicators <ul style="list-style-type: none"> Volatile organic compounds index in 2023 equals to 1,811 	

Notable Eco-efficiency Achievements

IRPC prioritized efficient use of resources and reduction of environmental impact in 2022, undertaking projects to mitigate impact on the environment, consisting of energy efficiency, air quality and odor management, water resource management, wastewater management, waste management, and complaint resolution projects, to ensure the company's stable and sustainable growth. In 2022, IRPC received the Thailand Energy Awards 2022 Outstanding Award for Creative Energy: Ethylene Plant, which produces Ethylene, Propylene, Butadiene, ACB, UT, PRP, and various units in Ethylene Plant (ETP), which produces Ethylene (C₂H₄) gas through break down molecules, a process that uses high power according to SEU assessment, so the units decided to think about how to maximize energy use to produce more products that led to the idea to increase production output using cracking furnace on standby and use the digital system to help process and verify to achieve the most efficient energy use. The award was presented by the Department of Alternative Energy Development and Efficiency (DEDE), Ministry of Energy.

Examples of important projects or activities

Energy Consumption Efficiency



In 2022, 22 Energy Conservation Projects reduced Energy use by **176,935.63** gigajoules, Gross expenses by **67.94** million baht, Greenhouse gas emissions by **11,323.88** tCO₂eq

- **ADU2 Oil line cleaning of Heat exchangers 41E013A/B and 41E024A/B**

ADU2 of IRPC Oil refinery helps promoting energy efficiency by cleaning both heat exchangers No.41E013A/B and 41E024A/B in oil line. ADU2 discovered the efficiency of heat transfer of Heat Exchanger deteriorate. This degraded heat exchanger performance stems from fouling or aging deposits on surfaces of heat exchanger. Heat exchanger is designed to transfer heat to crude oil before flowing into a fractionating column. Deposits weaken a heat exchanger's heat-transfer capacity and extra fuel for furnace requires to keep compensate for gaps in the target temperature. Then, ADU2 disassembled and cleaned both heat exchangers No.41E013A/B and 41E024A/B. As a result, the temperature of crude oil from preheated furnace increased by 10°C which can save heat energy by 10,002,176 Megajoules per year. On the other hand, ADU2 can save fuel cost by 39 million baht per year and reduce Greenhouse gas emissions of 640 tons of carbon dioxide equivalents (tCO₂eq).



Save heat energy

▶ **10,002,176** MJ/year

Save fuel costs

▶ **39** million baht/year

Reduce GHG gas emissions

▶ **640** tCO₂eq



• **Power consumption diminution of the compressor in the Refrigeration system at HDPE plant**

The purpose of this project is to decline the energy use of the gas compressor (Compressor) in the refrigeration unit by reduction of the inlet pressure of the compressor from 1.3 BarG to 1.0 BarG. In HDPE Plant, there are 3 sets of refrigeration systems and typically 2 sets are in operation. The functionality of refrigeration system is to reduce the temperature of substances used in the production process in HDPE plant. The selected type refrigerant is R22. The main equipment of refrigeration system are compressor, evaporator, and condenser. And refrigeration compressor is the heart of the systems, acts as pump that moves the refrigerant through the system and requires power supply. Reducing the inlet pressure from 1.3 BarG to 1.0 BarG leads to the reduction of power consumption from 420 kWh to 390 kWh per 1 compressor with the unchanged performance of the cooling system. This project reduced energy cost by 1,435,200 baht per year while greenhouse gas emissions decreased by 54 tons of carbon dioxide equivalents (tCO₂eq).

• **Operate one Slurry Pump Around**

“Operate one Slurry Pump around” is the project of reduction of electricity consumption of lower compartment of fractionation tower “53C101”, one slurry pump is operated instead of two slurry pumps. Generally, in fractional distillation, at the bottom of a fractionating column, the temperature of the slurry oil is quite high, at 330 °C. It is required to reduce this temperature before reverting to fractionating tower “53C101” in order to maintain the level of heat in tower suitable for refining the distillates. In reverting slurry oil to transfer heat before flowing into fractionating tower, it is generally required for two slurry pumps to be operated which are 53P102B and 53P102C and one slurry pump “53P101A” is prepared as stand-by pump. According to the objective of this project, it enables the adjustment of slurry pump operation condition from two slurry pumps to only one slurry pump without any negative impact to fractional distillation. As a result, the project helps save electricity cost by 3.5 million baht per year or decrease electricity consumption by 201 KWh as well as GHG emissions reduced by 366 tons of carbon dioxide equivalent(tCO₂eq).



Reduce energy cost

▶ **1,435,200**
baht per year

Reduce GHG gas emissions

▶ **54** tCO₂eq

Save energy consumption

▶ **201** kWh

Save energy cost

▶ **3.5** MB per year,

Reduce GHG gas emissions

▶ **366** tCO₂eq

Air quality and odor management

• **NOx SOx TSP Management**

IRPC pays attention to air pollution control from chimneys. Firstly, the combustion factors are in control in order to achieve efficiency and reduce environmental impact, such as the combination of using fuels with less impact on the environment like Fuel gas. Secondly, the control of combustion conditions in the furnace is implemented in order to minimize air pollution, nitrogen oxides, sulfur oxides and total suspended particulates (NOx SOx TSP). Lastly, to diminish the level of Nitrogen oxides (NOx) emissions from chimney, it requires highly efficient technology of burner and Low NOx Burner is equipped.

In addition to the combustion and fuel technology, in 2022, IRPC also has scheduled to do turnaround—a scheduled large-scale maintenance activity—which focused on maintaining the combustion efficiency of the equipment to remain operate accordingly as well as reducing the environmental impact.

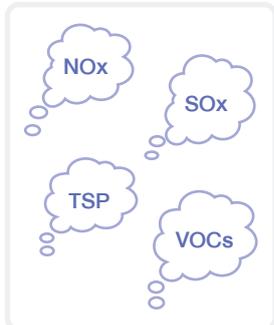
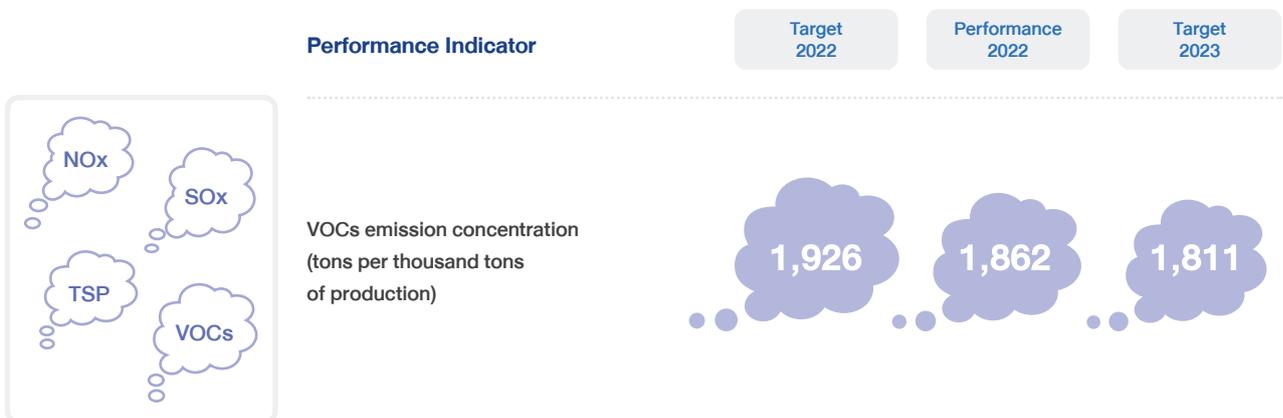
In area of monitoring, IRPC has collaborated and planned with third party consultants in measuring the air quality from the chimneys. The results of the measurement passed the control criteria of IRPC Industrial Zone and the standard value of pollutant emissions according to the Notification of the Ministry of Industry. This affirms the effectiveness of management of air pollution, nitrogen oxides, sulfur oxides, as well as total suspended particulates (SOx NOx TSP).

• **Volatile Organic Compounds (VOCs) Management**

In 2022, IRPC commenced the project of Enclosed Ground Flare (EGF) Installation to support effluent gas disposed from the factory. The EGF use an efficient burner design resulting in high combustion efficiency at 99.5% and its benefits are the reduction of black smoke and volatile organic compounds (VOCs), no thermal radiation, no visible flame and no odor/low noise. Overall, the progress of operations continues as planned as it was targeted to be completed in 2025.

Preventive control is in place to prevent VOC emissions during maintenance work through the Green Turnaround concept, focused on assessing the risks of emissions from various activities in order to find appropriate measures to preclude the discharge volumes. Checking the equipment before turning on the system for maintenance, as well as surveillance measures around the factory fence is to confirm the practice results, including analyzing the significant factors in order to solve the actual cause of problems, which is a sustainable solution.

Adopting guidelines in accordance with the Code of Practice (COP) in preventing VOCs emissions from three significant sources: storage tanks, incinerators and repair work into actual operations helps materialize VOCs problem solving.

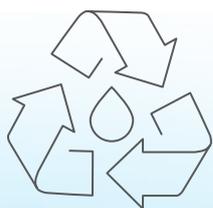


Water Management

Water is a vitally important resource, not only for IRPC but for everybody else in all sectors of society. The company takes it upon itself to participate in water resource management in collaboration with government agencies and other water users within the PTT Group as well as external parties. Participation in water resource management must start at the upstream to ensure the company's operations do not interfere with water consumption patterns linked to ways of life of people in the agricultural sector, the needs of other industry sectors and the general public. In 2022, a water user committee was established with the objective to achieve a balanced approach to the sharing of natural water resources between IRPC and communities. This is implemented alongside the company's effort to ensure smooth, continuous operations, uninterrupted by scarcity or shortage.

IRPC's internal water resource management approach is based on the 3Rs concept: Reduce, Reuse, and Recycle. That is, reduce water consumption at the source, then reuse and recycle effluent discharge that has undergone treatment to meet quality standards suitable for reuse for other purposes, such as watering plants and using treated water instead of distilled water to prepare chemical solutions. As for digitalization, the i-utility application is being used to monitor efficient water usage to promote awareness. This could lead to less water being extracted from the natural sources in the first place. The company also launched a campaign to encourage employees to conserve water in their daily life at home and at work as part of the effort to instill in them a culture of water conservation. And this not only applies with the company's employees. In the major scheduled maintenance in 2022, the company cooperated with the machine cleaning contractor to calculate the amount of water consumption in the machine cleaning work. This helps to determine and control the amount of water used as appropriate.

The company joined the PTT Group in conducting a feasibility study to find untapped potential for further water conservation in the production process through the Water Demand Management project. Pilot projects are being conducted at two plants, ETP and UHV.



Wastewater Management

IRPC has conducted measurements and surveillance of wastewater based on effluent quality parameters applicable within the company's own industrial zone to ensure it meets the standards of the Online COD at Receiving Ponds 1 and 2. Measurement results are then delivered to the Department of Industrial Works' monitoring system.

IRPC has registered two wastewater treatment plants in IRPC industrial zone in Rayong Province to ensure efficiency in the management of wastewater from the company's operations. The operation of IRPC's wastewater treatment plants is controlled by a pipeline network that covers all factories in the industrial zone. Wastewater quality is checked against internal standards prior to being discharged into the treatment facility to ensure the efficiency of treatment at the source and to minimize errors at the central wastewater treatment system.

For the management of wastewater from major scheduled maintenance, each type of wastewater will be subject to clearly defined disposal method. Wastewater that cannot be fed into the company's wastewater treatment system will have to be disposed of by a licensed disposal company. This is to prevent unlawful disposal of wastewater and reduce the impact on surrounding communities.

To ensure water treatment management efficiency and gain stakeholders' trust and reassure them of the company's operational sustainability, IRPC has engaged third-party consultant and government agencies to regularly collect wastewater samples for analysis to ascertain its wastewater quality meets both its internal standards and the standards prescribed by Notifications of the Ministry of Industry.



Solid Waste Management

On solid waste management, IRPC has adopted the 7Rs and Circular Economy concepts to guide its effort to achieve maximum resource management efficiency. The company has conducted R&D in collaboration with waste disposal operators to explore the possibility of recycling or recovery to reduce pollution and to add value to the recovered resources. The company also organized activities to promote the 7Rs principles in various operational processes, including major scheduled maintenance, the Green Turnaround Project, featuring Reuse Insulation project that advocates the reuse of used but still functional insulation, which throughout 2022 reduced disposal and material replacement costs by over Baht 1.8 million, and 133 tons of used insulation

materials that would otherwise have ended up in the incinerator. In addition to the management of waste at its final stage, IRPC also implemented a project to improve the efficiency of machinery to reduce maintenance costs and to keep machines and facilities clean as part of the effort to cut back on industrial waste at its source. There is also a campaign to separate waste that can go into the recycling process, including plastic water bottles used by employees and contractors. In the 2022 major scheduled maintenance, plastic water bottles that have been sorted were delivered to the company's R&D to experiment with by putting them through extrusion process to produce recycled products. This not only helps promote awareness among employees of the importance of recycling waste materials but also meets the requirements of promoting the implementation of the Circular Economy policy of the government in line with the global trend.

Performance Indicator



Volume of hazardous waste to landfills compared to total volume of hazardous waste (%)



Community Complaint Management

IRPC has set up an Emergency Control Center (ECC) responsible for receiving complaints from the community 24 hours a day. The system administrator will refer the complaints to the relevant units, make a field trip to investigate the cause of grievances and report the results to senior management who will provide guidance, analyze the cause, monitor, and support for remedial action and complaint resolution. The complainant will be informed of the cause of their grievance, the company's response to the complaint and remedial action. In 2022, the number of complaints decreased by 50% compared to 2021. This was attributed to an improvement in data analysis of complaints enabling the company to identify the root cause of grievance so that corrective actions could be taken leading to complaint resolution. The company also created a Zero Complaint roadmap that provides clarity in the way odor issues will be resolved in the future through short- and long-term solutions. To address odor issues, IRPC has implemented more than 10 projects, such as Enclosed Ground Flare, Wastewater Treatment Closed System, and CPI/API Improvement, etc.

IRPC has communicated its environmental actions proactively to stakeholders through various channels, such as holding meetings, seminars, or visits to the community, distributing "Building Relationships" newsletter through community learning centers. The publication covers all new projects pending EIA, projects under construction as well as ongoing projects.



IRPC participated in support for the national goals

IRPC participated in a demonstration in support for the national agenda for climate actions to achieve national goals on November 2, 2022. Miss Arisara Suthasut, EVP, Office of Corporate Affairs, representative of IRPC Public Company Limited as a member GCNT and 110 leading organizations from all over the country,



declared their solidarity and commitment to accelerate climate actions and tackle biodiversity challenges at the annual sustainability leadership conference, “2022 GCNT Forum: Accelerating Business Solutions to Tackle Climate & Biodiversity Challenges” organized by the Global Compact Network Thailand (GCNT) together with the United Nations in Thailand with Prime Minister General Prayuth Chan-ocha presiding as the chairman of the event. The conference held at the United Nations Convention Center, Ratchadamnoen Nok Road, Bangkok, was also attended by Mr. Warawut Silpa-archa, Minister of Natural Resources and Environment, Mr. Supachai Chearavanont, President of the Global Compact Network Thailand, Mr. Kita Subbawan, Coordinator, United Nations Thailand, and Ms. Ruenwadee Suwanmongkol, Secretary-General of the Securities and Exchange Commission.

Climate Change

Opportunities and Challenges

The COP26 summit urged countries to set more ambitious greenhouse gas reduction targets to keep the rise in global average temperature within 1.5°C compared to pre-industrial levels, to achieve the target of Net Zero emissions by 2060. The UN conference also called for more stringent global trade rules to accelerate green transition. Mindful of such challenges, IRPC is fully prepared and determined to continue to roll back greenhouse gas emissions in accordance with PTT Group's guidelines. Greenhouse gas emission targets and plan of action have been reviewed and new targets set to further cut back emissions in all operational processes and continue investing in projects that reduce emissions and promote renewable energies.

Materiality Assessment



Environmental strategy:
Save our planet



Business development towards a low-carbon society along
with environmentally friendly business operations

Enterprise-level Indicators



- Performance indicators of senior management
- Performance indicators of the executive committee and employees at all levels

Short-term/Long-term Indicators

Short-term indicators

- IRPC's direct and indirect greenhouse gas emissions in 2022, not exceeding 4.18 million tons of carbon dioxide equivalent.

Long-term indicators

- Control the amount of greenhouse gas emissions by reducing GHG emissions by 20% below the business-as-usual GHG emissions projection for 2030.
- Carbon Neutrality by 2050
- Net Zero greenhouse gas emissions by 2060

Outcome

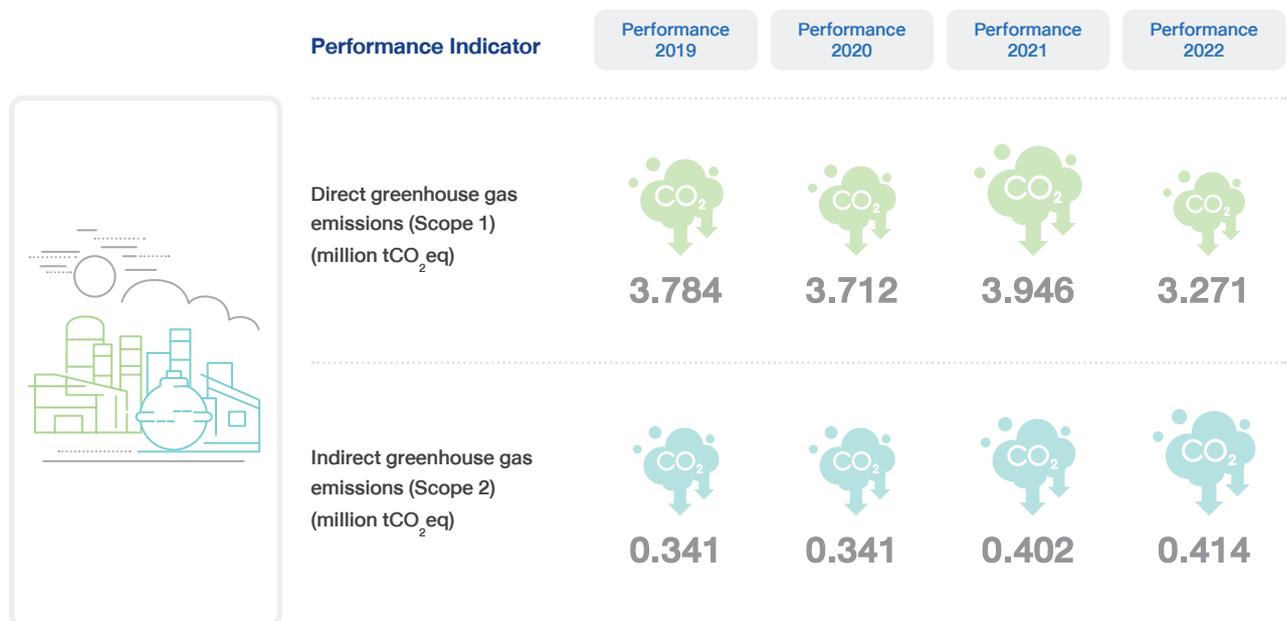
- The amount of direct and indirect greenhouse gas emissions of IRPC in 2022 equals 3.685 million tons of carbon dioxide equivalent. This can be attributed to the implementation of the project.
- The use of renewable energy from Floating Solar in the production process at the factory.

Key Climate Change Performance

IRPC reviewed its corporate strategy to correspond with climate change situations. In 2022, IRPC identified climate change as one of its sustainability challenges that must be tackled with determination. A target is set to reduce GHG emissions to 20 per cent below the business-as-usual projection for 2030, and to achieve Carbon Neutrality by 2050 and Net Zero by the year 2060.

In 2022, a target of direct and indirect GHG emissions was set at not more than 4.18 million tons of carbon dioxide equivalent and the 2022 performance shows emitted 3.685 million tons of carbon dioxide equivalent which is under target, due to energy efficiency project and process improvement initiatives

In addition, IRPC has applied the Task Force on Climate-related Financial Disclosures (TCFD) principles to assess climate-related risks and opportunities along with identifying risk management measures to mitigate such risks.



Important Projects or Activities



Carbon-neutral Shareholders' meeting

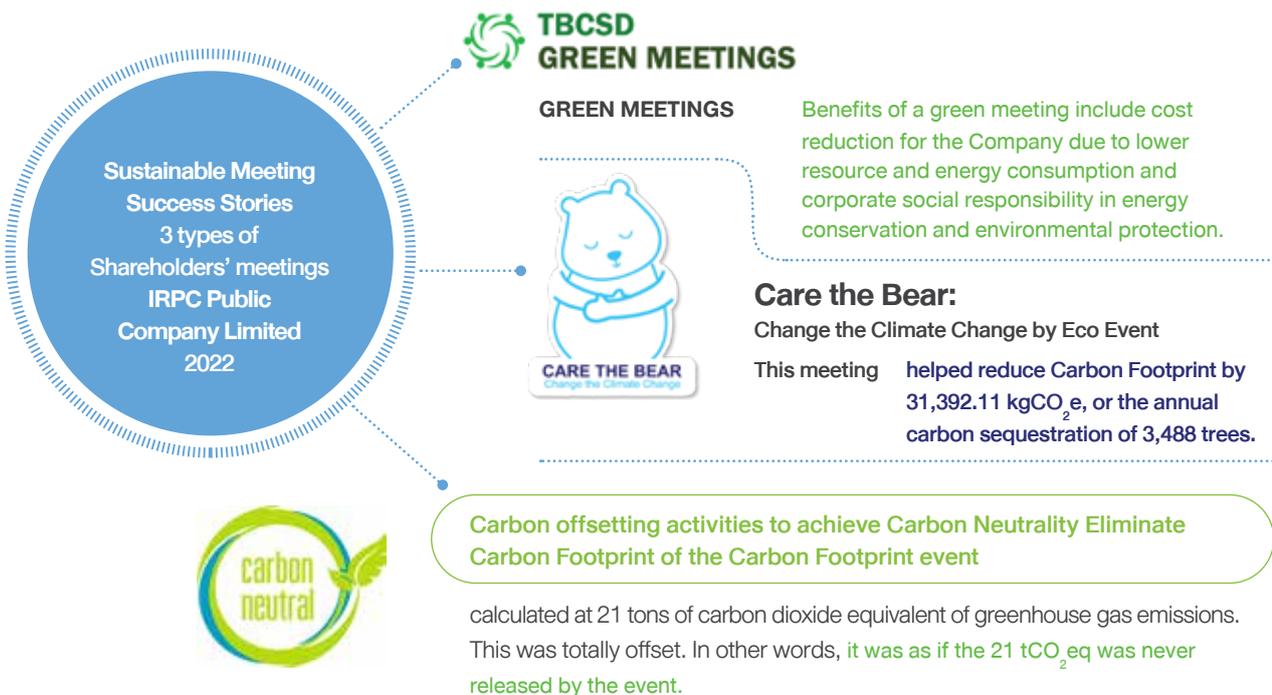
IRPC has an event portfolio certified Carbon Neutral

In 2022, IRPC received certification for applying a Carbon Neutral Event approach in the 2022 IRPC Annual General Meeting of shareholders on April 5, 2022 according to the meeting of the Board of Directors of Thailand Greenhouse Gas Management Organization (Public Organization) No. 4/2022 on May 4, 2022.



Carbon offset activities by organizing Carbon Footprint Event is considered a social responsibility because it helps reduce greenhouse gas (GHG) emissions in the sector. The carbon footprint was calculated from the GHG emissions produced by such event and were completely offset or in other words, it was as if GHG was never released by the event.

IRPC has organized a Carbon Neutral Event regarding to the guidelines, with the results of the carbon footprint verification of the Annual General Meeting of shareholders to apply for certification of the event with Thailand Greenhouse Gas Management Organization (Public Organization), including the carbon footprint of the event equal to 20.22 tons of carbon dioxide equivalent. This was totally offset, resulting in carbon neutrality as if the 21 tons of carbon dioxide equivalent of GHG emissions never took place, through the implementation of Mitr Phol Bio-Power (Danchang) - Block 2.



• Carbon Emissions Management Certification

IRPC has made a commitment to play an active role in the efforts to reduce greenhouse gas emissions at the national level and international level as a participant in the Conference of Parties to the UN Framework Convention on Climate Change. It has applied for Carbon Footprint of the Organization (CFO), Carbon Footprint of Corporate Products (CFP) and Carbon Reduction Label certification, to manage the reduction of carbon emissions from the company's operations, reduce resource costs, and create new opportunities for growth and competitive edge.

IRPC has for 8 consecutive years taken part in the Carbon Footprint for Organization (CFO) project, organized by the Federation of Thai Industries with financial support from Thailand Greenhouse Gas Management Organization (TGO).

The project provides tools for the company to manage reduction of GHG emissions from operational activities, such as fuel combustion, electricity consumption, waste management and transportation. In 2022, IRPC obtained the Carbon Footprint Reduction Label certification from the TGO for 10 production plants as follows:

- 1) Olefins plant group consisting of 3 plants:
ETP, ACB, PRP
- 2) Polyolefins plant group consisting of 3 plants:
PP, PPC, PTK
- 3) HDPE &UHMWPE
- 4) BTX
- 5) EBSM
- 6) PS



IRPC obtained the Carbon Footprint Reduction Label certification.

On August 23, 2022, 3 plants of the Olefins plant group, namely Ethylene Plant (ETP), Acetylene Black Plant (ACB), Propylene Gas Plant (PRP), obtained the Carbon Footprint Reduction Label certification from Thailand Greenhouse Gas Management Organization (Public Organization) (TGO) with the collaboration of the Olefins Department, Department of Quality Control, Safety, Health, Environment, and Industrial Zone Management IRPC. This also expands the more results of carbon footprint calculation among the organizations in the industry.



IRPC's 7 plants (PP, PPC, PTK Catalyst, HDPE & UHMWPE, PS, BTX and EBSM) register for the carbon footprint label.

IRPC has joined the Carbon Footprint for Organization (CFO) powered by the Federation of Thai Industries with financial support from the Thailand Greenhouse Gas Management Organization (Public Organization) (TGO) forming an extensive network of carbon footprint calculation across industrial sectors.

With the collaboration of the Polyolefins Department, Styrenics and Aromatic Department and Quality Management, Safety, Health, Environment Department & Industrial Zone Management, IRPC is certified with a carbon footprint label approved by the Thai Greenhouse Gas Management Organization (TGO) on November 29, 2022, for seven manufacturing sites: Polyolefins Plant Group (Polypropylene or PP plastic pellet factory), A composite polypropylene (PPC) plastic plant, PTK Catalyst Factory, Factory of High Density and High Molecular Weight polyethylene (HDPE & UHMWPE) plastic pellets, Polystyrene (PS) plastic pellet factory, Chemical Plant Benzene, Toluene, Xylene (BTX) and Ethyl Benzene Styrene Monomer (EBSM) Plant.

As a result of Carbon Footprint registry, IRPC reaffirms its vision and leadership in environment good governance and sustainability as well as inspires others as a role model laying out a blueprint for a carbon footprint sequestration framework which can handle the emergence of carbon tax and trade regulations for the environment going forward. This, in turn, also reassures trade partners in their policies concerning environment preservation and carbon footprint evaluation.



Additionally, in 2022, IRPC has implemented the assessment of Carbon Footprint of Corporate Product to submit for registration for Carbon Footprint Reduction Label certification from Thailand Greenhouse Gas Management Organization (Public Organization) (TGO). This process is actively in progress. The assessed products are polypropylene plastic resin and polystyrene plastic pellets.

Carbon Label Project

CFO Carbon Footprint for Organization: CFO Achievement

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Project	PORT	AYD	PPD, LDDL	REFY & COND	PRP	WWT 1 & 2, WWT 3, UT-BK & UT-IP	CHP-PW, DCC, LUBE & UHV	Olefins (ETP, ACB, PRP), Polyolefins (PP, PPC, PTK), HDPE & UHMWPE, BTX, EBSM, PS	EPS, CCM, ABS, SAN

CFP Carbon Footprint for Products: CFP Achievement

	2021	2022	2023
Project	Utility (Electricity, Steam, Water)	PP, PS	PP, PS (cont.), ABS, SAN
WAY	<ul style="list-style-type: none"> Support government for develop Eco-industrial town As a consequence of the global warming problem that has resulted from excessive greenhouse gases (GHG) emissions 		

Moreover, products obtained the renewal of carbon reduction label certification from the Thailand Environment Institute Foundation for plastic pellet products under POLIMAXX trademark are as follows:

- Polypropylene (PP): PP Homo Polymer (69,787.49 tons CO₂ equivalent per year), PP Random Copolymer (20,043.57 tons CO₂ equivalent per year) and PP Block Copolymer (14,171.46 tons CO₂ equivalent per year).
- Expandable Polystyrene (EPS): STD STANDARD TYPE (3,430 tons CO₂ equivalent per year), and SE TYPE (SELF EXTINGUISHING TYPE) (3,430 tons CO₂ equivalent per year).
- Polystyrene (PS): High Impact Polystyrene (HIPS) (3,932 tCO₂eq per year) and General Purpose Polystyrene (GPPS) (3,844 tCO₂eq per year).

- **IRPC received award of excellence from the Thailand Greenhouse Gas Management Organization in the category of Low Carbon and Sustainable Business Operations**

IRPC’s determination to continually improve the efficiency of its energy resource management through research and development on material and energy innovations and the shift towards clean and renewable energy in its production process, was widely recognized. The company received the 2022 Low Carbon and Sustainable Business (LCSB) award of excellence from Thailand Greenhouse Gas Management Organization (TGO) for the second consecutive year. This reflects positively on the company sustainability credentials as a low-carbon business operator in response to climate change.



Carbon Label Project

LCSi Low Carbon and Sustainable Business Index: LCSi (LCSB)

	2021	2022	2023
Project	LCSi "Excellence" award for LCSi	LCSB "Excellence" award for LCSB	

- IRPC received a certificate of appreciation for supporting greenhouse gas reduction activities (LESS) by waste sorting for recycling.



IRPC Public Company Limited received a certificate of appreciation for Low Emission Support Scheme (LESS) from Thailand Greenhouse Gas Management Organization

(Public Organization) after the project was certified on November 29, 2022, from waste sorting for recycling and donating proceeds from such activities to support community development. Such activities reduced greenhouse gas emission by 1,043 kilograms of carbon dioxide equivalent (kgCO₂eq) in the January 1, 2020-December 31, 2021 period.

The Low Emission Support Scheme, also known as LESS project, is an initiative to raise awareness of the environmental impact from greenhouse gas emissions and to encourage people or organizations to make contribution in reducing GHG emissions by taking actions. Letter of Recognition with details regarding the amount of GHG emissions being reduced based on analysis and technical assessment of climate activities, will be issued to those who perform good deeds. The private sector/businesses can play the role of a "giver" by reducing GHG emissions to benefit society/community. The amount of GHG reduction under the LESS project is calculated for the purpose of showing appreciation for climate actions - not carbon credits that can be traded in carbon markets.

• **Thailand Voluntary Emission Reduction Program: T-VER**

IRPC’s 12.5 MW Floating Solar Power Plant project at solar power plant project Floating Solar Power (Floating Solar Power) at its reservoir was awarded a plaque of recognition and certificate for Thailand Voluntary Emission Reduction (T-VER) by Thailand Greenhouse Gas Management Organization (Public Organization) following the project’s registration as a T-VER project, which is expected to reduce greenhouse gas emissions by an average of 9,459 tons of carbon dioxide equivalent per year (tCO₂ eq/y) during the carbon credit calculation period of 7 years from January 1, 2021 to December 31, 2027.



T-VER Thailand Voluntary Emission Reduction Program

	2021	2022	2023
Project	T-VER (Floating Solar Power)	T-VER (Floating Solar Power: Monitoring)	PP, PS (cont.), ABS, SAN
WAY	<ul style="list-style-type: none"> • Support government for develop Eco-industrial town • As a consequence of the global warming problem that has resulted from excessive greenhouse gases (GHG) emissions 		

Greenhouse gas emissions by an average of 9,459 tCO₂ eq/year

• **Internal Carbon Pricing**

In 2021, IRPC adopted the concept of internal carbon pricing (ICP), or shadow price, in evaluation and decision-making on green projects and investments, alongside other financial tools, such as internal rate of return (IRR). IRPC set an ICP US\$20/tCO₂ eq in accordance with the guidelines on the determination of carbon pricing and low carbon investment as recommended by Thailand Greenhouse Gas Management Organization (TGO) in collaboration with World Bank. Such green investments include the Floating Solar Phase II 9.0 MW for PP Plant, VDU Heater Energy Efficiency Improvement for Lube Plant.

• **Assessing risks, impacts, and opportunities according to the Task Force on Climate Guidelines-related Financial Disclosures (TCFD)**

IRPC fully recognizes the risks associated with climate change as a major threat to sustainable development that may impact the company’s business operations. These include physical risks from natural disasters and transition risks arising from the rapid changes in policies, regulations, and technologies. The company has adopted the Task Force on Climate-Related Financial Disclosures (TCFD) in four key areas: Governance, Strategy, Risk Management, and Metrics and Targets as guidelines for assessing risks, impacts, and opportunities to align with our business operations in 2023.

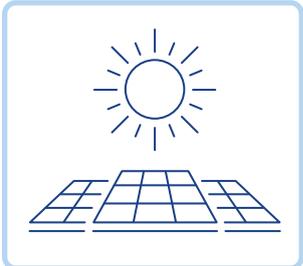
- **Green Bond Project**

IRPC recognizes the opportunity to develop projects for sustainability by issuing green bonds to finance such eco-friendly projects or support environmental conservation to build confidence among investors and stakeholders as well as to win support from relevant regulatory agencies.



The 12.5 MW Floating Solar Power Project of IRPC Public Company Limited, which is located in the company's reservoirs in Taphong Subdistrict, Mueang Rayong District, Rayong Province. Reservoirs 3, 4, 5 are used for water storage for water supply production. Rainfall and runoff are the main sources of water in the reservoirs. The solar panels are installed in the earthen reservoirs measuring approximately 74, 61 and 65 rai, respectively.

Under the project, solar panels will be installed on the water surface in Reservoirs 3, 4, and 5, with installed capacity of 12.5 MW and 8.5 MW peak, generating direct current electricity which is then converted by an inverter into alternating current and sent to the transformer to increase the voltage from low voltage to high voltage of 6.6 kV and pass through the electricity meter to the electricity distribution system of the project to be sent to the factories in the IRPC industrial zone. IRPC operates 24 hours a day throughout the project life of 25 years. However, the solar panels used by the project have a service life of about 30 years.



Project type	Production capacity	Location	Power consumption
Floating Solar Projects: Phase 1	12.5 MW	Rayong Province	19,482 mWh (12%)
Floating Solar Projects: Phase 2 (Ongoing)	8.5 MW	Rayong Province	12,837 mWh



Project type	Investment budget (Million Baht)
Floating Solar Projects: Phase 1	538
Floating Solar Projects: Phase 2 (Ongoing)	250
Total investment of the project	788

IRPC GREEN PROJECT IMPACT

IRPC has summarized the impact of the green debenture portfolio by category from environmental perspective as of December 31, 2022.

Eligible Green Projects	Floating Solar
 <p>Impact indicators</p> <ul style="list-style-type: none"> • % Annual reduction in energy consumption from conventional power plant • Annual reduction in GHG emission (unit: tonnes of CO₂ equivalent) • Annual renewable energy generation or installed capacity (unit: mWh) 	

Remark: Refer to Organization's Carbon Foot print Calculation according to the Thailand Greenhouse Gas Management Organization.

Management Discussion and Analysis (MD&A)

Executive Summary

	Unit	2022	2021	%Change
Crude Intake	Million bbl	63.86	70.19	(9%)
Sales ^[1]	Million Baht	324,800	255,115	27%
Net Sales ^[2]	Million Baht	318,396	235,174	35%
Market GIM	Million Baht	23,761	29,588	(20%)
	USD/bbl ^[3]	10.57	13.12	(19%)
Accounting GIM	Million Baht	17,413	40,692	(57%)
	USD/bbl	7.75	18.04	(57%)
EBITDA	Million Baht	3,987	26,961	(85%)
Net Profit	Million Baht	(4,364)	14,505	(130%)

Notes: ^[1] Sales include (1) Petroleum Sales (2) Petrochemical Sales (3) Power and Utilities Sales (4) Sales of tank farm and port service, etc

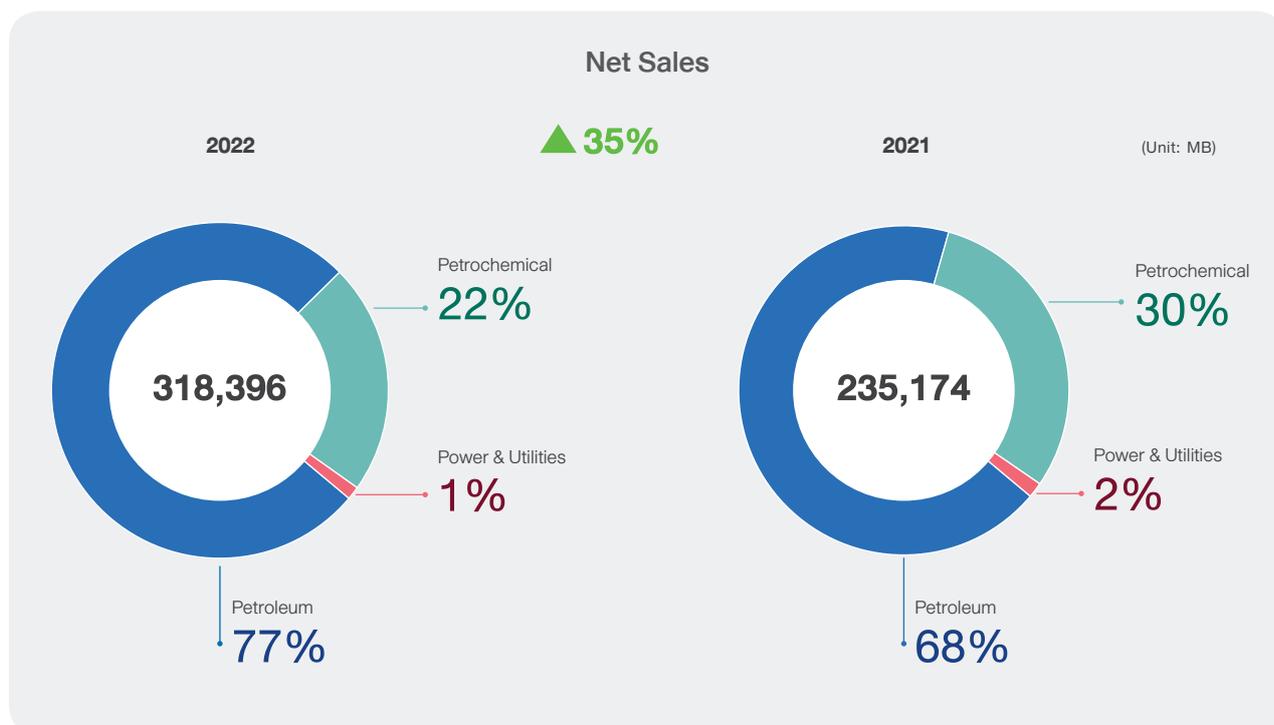
^[2] Net Sales include (1) Petroleum Sales (excluding excise tax) (2) Petrochemical Sales (3) Power and Utilities Sales

^[3] Market GIM per bbl : [(Market GIM / Crude Intake)/Exchange Rate]

The operating results in 2022 compared to those in 2021:

In 2022, the Company registered net sales of Baht 318,396 million increasing by 35% from that in 2021. This attributed to a 43% increase in average selling prices following higher crude oil price while an 8% decrease in sales volume. The average crude intake was 175,000 barrels per day, down by 9% because of the planned major turnaround taking place approximately 1 month in 4Q22.

The Market Gross Integrated Margin (Market GIM) was Baht 23,761 million (USD 10.57 per barrel) declining by 20% following a drop in petrochemical products spreads as well as an increase in crude premium versus a significant rise in petroleum products spreads especially Diesel and Gasoline spreads.



The crude oil price in 2022 had extremely increased from USD 69.24 per barrel in 2021 to USD 96.34 per barrel in 2022. This was due to the conflict between Russia and Ukraine while recession concerns following inflation issues rising up around the world pressured the crude oil price at the end of the year. This led to the net inventory loss of Baht 6,348 million or USD 2.82 per barrel including the stock gain of Baht 4,384 million versus Net Realizable Value (NRV) of Baht 2,347 million and realized loss on oil hedging of Baht 8,385 million compared to the net inventory gain of Baht 11,104 million or USD 4.92 per barrel. Therefore, the Accounting Gross Integrated Margin (Accounting GIM) was Baht 17,413 million or USD 7.75 per barrel decreasing by Baht 23,279 million or USD 10.29 per barrel. The operating expenses were Baht 12,813 million decreasing by 6%. These resulted in the earnings before interest, tax, depreciation and amortization (EBITDA) of Baht 3,987 million decreasing by Baht 22,974 million or 85% from that in 2021.

The Company recorded the depreciation expenses amounting to Baht 8,059 million, which declined by 6%. The net financial cost was Baht 1,836 million increasing by 8% due to higher interest rate. There was an unrealized gain on oil hedging of Baht 28 million, down by 91%. In addition, there was a gain on investments of Baht 289 million that declined by 60%. However, the Company recorded a gain on financial derivatives amounting to Baht 238 million compared to a loss on financial derivatives amounting to Baht 302 million in 2021. Furthermore, there was a loss on foreign exchange from US Dollar - Borrowings of Baht 171 million decreasing by 64% because Thai Baht was weaker less than that in 2021. The Company had outstanding USD debt of 100 million at the end of 2022. The Company had the corporate income tax benefit amounting to Baht 1,142 million versus the corporate income tax amounting to Baht 2,351 million because of the declining operating results. All previously mentioned resulted in the net loss of Baht 4,364 million compared to the net profit of Baht 14,505 million in the previous year.

Key incidents in 2022

The issuance of debentures

On 20 May 2022, the Company has completed fund raising from the issuance of unsubordinated and unsecured debentures with debenture holder representative in 6 tranches in the total amount of Baht 12,000 million including;

Tranche 1: The debenture is offered to Individual Investors in the amount of Baht 6,000 million with tenor of 5 years. The debenture has a fixed coupon rate of 3.10% per annum.

Tranche 2-4: The debentures are offered to the Institutional Investors and/or High Net Worth Investors in the amount of

Baht 4,250 million with tenor of 4-12 years. The debentures have a fixed coupon rate of 3.03% - 4.86% per annum.

Digital Debenture: The debenture is offered to Individual Investors in the amount of Baht 1,000 million with tenor of 5 years. The debenture has a fixed coupon rate of 3.10% per annum.

Green Debenture: The debenture is offered to the Institutional Investors and/or High Net Worth Investors in the amount of Baht 750 million with tenor of 7 years. The debenture has a fixed coupon rate of 4.17% per annum.

Operating Performance

1. Operating Performance by Business Units

1.1 Petroleum business unit

1.1.1 Petroleum Market Overview

Crude oil situation in 2022: The global oil consumption was 100.5 million barrels per day rising by 2.1 million barrels per day from 2021 oil consumption of 98.4 million barrels per day. The Dubai price in 2022 moved between USD 71.81 per barrel and USD 127.81 per barrel, with an average of USD 96.34 per barrel that surged by USD 27.10 per barrel from USD 69.24 per barrel in 2021. The Dubai price fluctuated throughout the year. In early 2022, the Dubai price gradually rose aligning with the growing oil demand recovering from COVID-19 and then significantly boosted in late February owing to the conflict between Russia and Ukraine. Such conflict incentivized the market to predict that Russia's crude oil and natural gas exports would be sanctioned by European countries and the U.S.,

thus the escalated crude oil price. Nevertheless, the crude oil price progressively declined in 2H22 because of recession concerns being in accordance with inflation and economic issues rising up around the world. This entailed The Federal Reserve (FED)'s benchmark interest rate increases, which occurred 4 times during 2H22 and raised the benchmark interest rate from 1.50-1.75% in 1H22 to 4.25-4.50%. Plus, the U.S. released around 200 million barrels of their Strategic Petroleum Reserve (SPR) to the market sinking the SPR inventory to a 40-year low of about 380 million barrels. In addition, the widespread COVID-19 outbreak in China in 4Q22 was another key aspect pulling the crude oil price down in late 2022.

Dubai Price



1.1.2 Crude Intake and Capacity

Petroleum	2022	2021	%Change
Crude Intake			
Million barrels	63.86	70.19	(9%)
KBD	175	192	(9%)
Utilization Rate			
Refinery	81%	89%	(8%)
RDCC	92%	115%	(23%)
Lube Base Oil	77%	90%	(13%)



In 2022, crude intake was 63.86 million barrels or 175,000 barrels per day. Refinery utilization rate was 81% declining by 8% from that last year owing to major turnaround. ”

In 2022, crude intake was 63.86 million barrels or 175,000 barrels per day (175 KBD). Refinery utilization rate was 81% declining by 8% from that last year. As the Company's Refinery arranged major turnaround in October - November 2022 taking 37 days in average. The Refinery could operate efficiently after finished major turnaround in 4Q22.

The utilization rate of RDCC plant in 2022 was 92%, down by 23% from 115% in 2021 due to major turnaround.

The utilization rate of Lube Base Oil plant in 2022 was 77% decelerating by 13% from that in the prior year owing to major turnaround.

1.1.3 Petroleum Sales

Products	Sales Volume (Million Barrel)		Sales Value (Million Baht)	
	2022	2021	2022	2021
Refinery	50.46	52.73	219,105	136,063
Lube Base Oil	6.27	7.37	24,848	24,563
Total	56.73	60.10	243,953	160,626



In 2022, net sales of Petroleum businesses increased by 52% from that last year thanks to a 58% rise in average selling prices following the hiked crude oil price versus a 6% drop in sales volume. ”

In 2022, net sales of Petroleum businesses were Baht 243,953 million increasing by Baht 83,327 million or 52% from that in 2021. This was mainly because of a 58% rise in the average selling prices following the hiked crude oil price versus a 6% drop in sales volume, from 60.10 to 56.73 million barrels. The drop in the sales volume was mainly from Diesel and Naphtha. The proportion of domestic and export of Petroleum products in 2022 was 64:36 and most of the exported products were shipped to Singapore, Cambodia and Laos respectively.

1.1.4 Petroleum Products Spread

Average Price	2022	2021	%Change
Dubai Crude Oil (USD/bbl)	96.34	69.24	39%
Petroleum (USD/bbl)			
Naphtha - Dubai	(13.2)	1.4	N.A.
ULG95 - Dubai	18.8	11.1	69%
Gas Oil 0.05%S - Dubai	34.3	6.7	412%
FO 180 3.5%S - Dubai	(14.1)	(4.9)	(188%)
Lube Base Oil (USD/MT)			
500SN-FO 180 3.5%S	678	845	(20%)
150BS-FO 180 3.5%S	837	1,234	(32%)
Asphalt-FO 180 3.5%S	16	(11)	245%

The spread between Petroleum products and raw material

The spread between Petroleum products and Dubai

- Naphtha Spread - Lower:** Naphtha - Dubai spread in 2022 was USD -13.2 per barrel decreasing by USD 14.6 per barrel from USD 1.4 per barrel in 2021. This was because China's Zero-COVID policy and real estate crisis hampered economic activities affecting petrochemical demand, hence lower demand for Naphtha, a raw material for petrochemical products. Naphtha - Dubai spread in 4Q22 was USD -14.6 per barrel enhancing by 38% from USD -23.4 per barrel in 3Q22. This was owing to rapidly declined crude oil price. In the meantime, Naphtha demand was still pressured by China's Zero-COVID policy.

- ULG95 Spread - Higher:** ULG95 - Dubai spread in 2022 was USD 18.8 per barrel increasing by 69% from USD 11.1 per barrel in 2021. The product and crude oil prices fluctuated due to the Russia-Ukraine conflict. Concurrently, Gasoline demand was supported by lockdown eases in several countries throughout the world, while China's Zero-COVID policy and recession concerns curbed some Gasoline demand in 2H22. ULG95 - Dubai spread in 4Q22 was USD 9.4 per barrel being down by 29% from USD 13.2 per barrel in 3Q22 as Gasoline demand softened seasonally and China's Zero-COVID policy dampened demand. On the contrary, Gasoline supply increased as Naphtha spread was low, thus more Naphtha blending activities in Gasoline production.

- **Gas Oil Spread - Higher:** Gas Oil - Dubai spread in 2022 was USD 34.3 per barrel increasing by 412% from USD 6.7 per barrel in 2021 due to the Russia-Ukraine conflict leading to an energy shortage crisis in Europe, the world's largest net Diesel importer. Diesel spread was all-time high at USD 55.2 per barrel in June. Gas Oil - Dubai spread in 4Q22 was USD 39.3 per barrel rising by 12% from USD 35.2 per barrel in 3Q22 thanks to seasonally higher Diesel demand. Still, some Diesel demand was impeded by China's export quota issuance in late September as well as warmer-than-typical winter climate during October and November.
- **Fuel Oil Spread - Lower:** High Sulphur Fuel Oil (HSFO) - Dubai spread in 2022 was USD -14.1 per barrel declining by 188% from USD -4.9 per barrel in 2021 owing to the U.S.' sanction on Russia. Plus, HSFO supply increased following higher Refinery utilization rates aligning with rising Diesel spread. HSFO - Dubai spread in 4Q22 was USD -22.5 per barrel being approximate to that in 3Q22. There were more Russian HSFO inflows to Asia due to the U.S.' sanction on Russia. Nevertheless, HSFO demand for marine transportation was stagnant because of high freights; besides, softened Gasoline spread limited HSFO demand for converting to Gasoline.

The spread between Lube Base Oil products and Fuel Oil

- **500SN Spread - Lower:** 500SN - Fuel Oil spread in 2022 was USD 678 per ton reducing by 20% from USD 845 per ton in 2021 owing to sluggish Lube Base Oil price while Fuel Oil price had small improvement. Overall, Lube Base Oil demand in 2022 was stagnant. 500SN - Fuel Oil spread in 4Q22 was USD 780 per ton being down by 2% from USD 798 per ton in 3Q22 as Lube Base Oil demand was weak even if there were several maintenance shutdowns in 4Q22, thus approximate spread.
- **Asphalt Spread - Higher:** Asphalt - Fuel Oil spread in 2022 was USD 16 per ton increasing by 245% from USD -11 per ton in 2021 as price movement of Asphalt was noticed slower than that of Fuel Oil. Still, Asphalt demand was sluggish at a low level, partially owing to budget allocation focusing more on solving economic issues, thus lower budget for infrastructure improvement. China's Zero-COVID policy curbed some Asphalt demand as well. Asphalt - Fuel Oil spread in 4Q22 was USD 146 per ton increasing by 55% from USD 94 per ton in 3Q22 as Fuel Oil price slumped fast aligning with crude oil price, while Asphalt price dropped at a slower pace. Asphalt demand in many parts across Asia was dampened by monsoons and floods.

1.1.5 Gross Refining Margin



In 2022, Market GRM was Baht 18,072 million or USD 8.04 per barrel increasing by Baht 4,757 million or USD 2.13 per barrel, YoY, mainly owing to rising Diesel and Gasoline spreads. ”

The Gross Refining Margin (Market GRM) in 2022 was Baht 18,072 million or USD 8.04 per barrel increasing by Baht 4,757 million or USD 2.13 per barrel, YoY, mainly owing to rising Diesel and Gasoline spreads. The Company obtained a net inventory loss of Baht 9,058 million or USD 4.03 per barrel comprising of a stock gain of Baht 811 million versus a loss on realized oil hedging of Baht 8,385 million and a Net Realizable Value (NRV) of Baht 1,484 million. Such figures led to the Accounting Gross Refining Margin (Accounting GRM) equaling Baht 9,014 million or USD 4.01 per barrel dropping by Baht 10,586 million or USD 4.68 per barrel, YoY.

1.2 Petrochemical business unit

1.2.1 Petrochemical Market Overview

Petrochemical market situation in 2022: The overall demand for petrochemical products declined compared to that in the previous year due to several factors starting with the prolonged Russia-Ukraine conflict, which caused escalated food and energy costs leading to a rise in global inflation. This incentivized several central banks to implement strict monetary policies and raise interest rates to all-time highs, particularly in the U.S., E.U., and England, which caused a slowdown in global GDP growth as well as dampened consumer purchasing power and more-cautious

spending. In addition, the strictly China's Zero-COVID policy that curbed several major cities' transportation in April encompassed declined demand for end products and dropped prices in China, which also pushed the prices in Southeast Asia down.

In terms of supply, several manufacturers reduced operating rates to maintain profit margins as the cost of production hiked according to escalating energy and raw materials prices, along with a slowdown in purchase orders as most manufacturers were unable to pass on higher costs to end customers. Additionally, new capacity was delayed more than previously planned because manufacturers want to wait and see whether the economic situation is stable enough for starting production.

1.2.2 Petrochemical Capacity

Petrochemical	2022	2021	%Change
Utilization Rate			
Olefins Group	86%	95%	(9%)
Aromatics and Styrenics Group	86%	99%	(13%)

In 2022, the utilization rate of Olefins group was 86% declining by 9% from that in 2021 of 95%. In addition, the utilization rate of Aromatics and Styrenics group was 86% being down by 13% from that last year due to production adjustment aligning with the Company's major turnaround and market conditions.

1.2.3 Petrochemical Sales

Products	Sales Volume (KMT)		Sales Value (MB)	
	2022	2021	2022	2021
Olefins Group	1,001	1,062	42,448	42,011
Aromatics and Styrenics Group	600	727	27,954	29,078
Total	1,601	1,789	70,402	71,089

Remark: Included sales of Trading business (iPolymer) and New S-Curve business (Rakpasak)



Net sales of Petrochemical businesses in 2022, slightly decreased by 1% from that last year due to an 11% decrease in sales volume versus a 10% rise in average selling prices.

Net sales of Petrochemical businesses in 2022 were Baht 70,402 million, slightly decreased by Baht 687 million or 1% from that last year. This was mainly because sales volume decreased by 188,000 tons or 11%, while average selling prices increased by 10%. The lower sales volume was mainly from PP in Olefins group and Mixed Xylene in Aromatics group. The proportion of domestic and export of Petrochemical products in 2022 was 62:38 and most of the exported products were shipped to Singapore, Hong Kong and Indonesia respectively.

1.2.4 The spread between key petrochemical products and raw material

Average price (USD/MT)	2022	2021	%Change
Naphtha	785	646	22%
Olefins			
HDPE - Naphtha	457	641	(29%)
PP - Naphtha	407	655	(38%)
Aromatics			
BZ - Naphtha	246	268	(8%)
TOL - Naphtha	175	83	111%
MX - Naphtha	239	104	130%
Styrenics			
ABS - Naphtha	901	1,713	(47%)
PS (GPPS) - Naphtha	731	955	(23%)

The spread between petrochemical products and raw material

The spread between Polyolefins group and Naphtha

- HDPE Spread - Lower:** HDPE - Naphtha spread in 2022 was USD 457 per ton decreasing by 29% from that in 2021 of USD 641 per ton as demand was still weak due to China's lockdown measures, which hampered the construction industry as well as several pipeline projects. Meanwhile, some producers reduced production capacity to preserve profit levels. HDPE - Naphtha spread in 4Q22 was USD 442 per ton increasing by 5% when compared to USD 421 per ton in 3Q22. This was because market expected demand recovery after China prepared to announce the reopening early next year. However, overall demand in this quarter remained sluggish due to a slowdown in downstream demand, especially from large construction projects resulting from high inflation and rising interest rates.
- PP Spread - Lower:** PP - Naphtha spread in 2022 was USD 407 per ton decreasing by 38% from that in 2021 of USD 655 per ton owing to concerns about the world economy leading to the softer demand for end products. In addition, raising interest rates and strict financial measures of banks in major markets such as Vietnam and Indonesia restrained consumer purchasing power. Moreover, China's Zero-COVID policy caused the demand in China to remain weak, while many producers reduced their production rates to keep up with the dwindling market demand. PP - Naphtha spread in 4Q22 was USD 322 per ton decreasing by 12% when compared to USD 367 per ton in 3Q22. This was owing to the global economic slowdown causing the demand for end products to decrease despite a manufacturing season for serving consumption during the New Year Festival. In addition, the Chinese government's persisting Zero-COVID policy, along with the policy rate hike and stringent credit measures in many countries resulted in the continually stagnant demand for end products.

The spread between Aromatics group and Naphtha

- TOL and MX Spread - Higher:** In 2022, Toluene - Naphtha spread and Mixed Xylene -Naphtha spread were USD 175 per ton and USD 239 per ton respectively rising by 111% and 130% when compared with those in 2021. This was mainly caused by improving PX market sentiments, which resulted in the increasing demand for Toluene and Mixed Xylene, the major raw materials being used in PX production. In 4Q22, Toluene - Naphtha spread and Mixed Xylene - Naphtha spread were USD 188 per ton and USD 241 per ton respectively, down by 27% and 17% accordingly when compared with those in 3Q22. This was due to stagnant demand while supply increased as India announced a limit on imports and encouraged domestic consumption. In addition, declined Gasoline spread and lower PX production constrained Toluene and Mixed Xylene demand for conversion to Gasoline and PX.

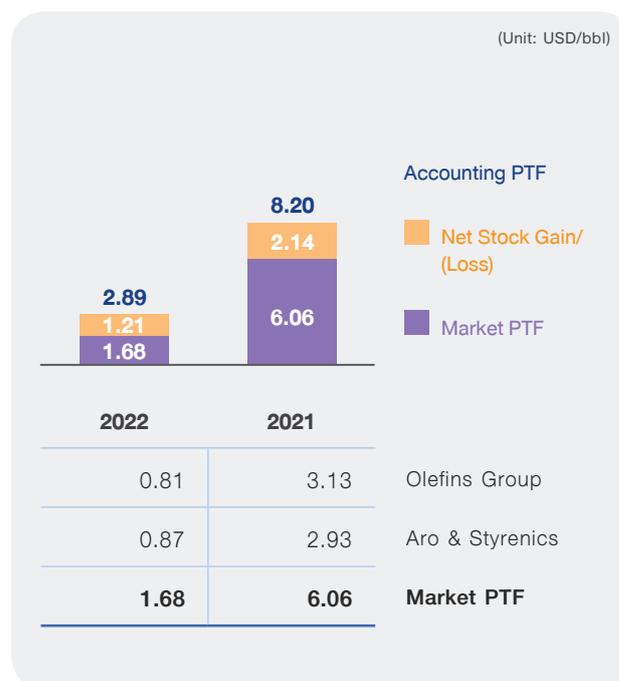
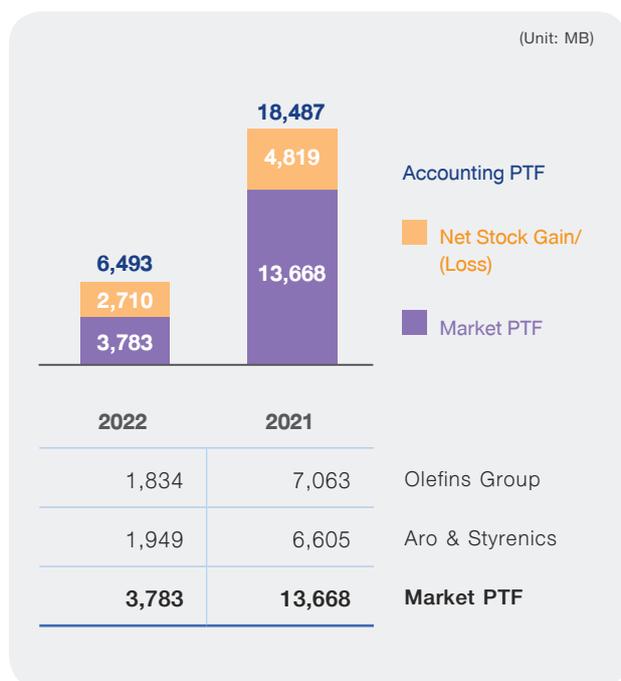
The spread between Polystyrenics group and Naphtha

- ABS Spread - Lower:** ABS - Naphtha spread in 2022 was USD 901 per ton decreasing by 47% when compared to USD 1,713 per ton in 2021. This was because the ABS market situation weakened from that last year when the ABS market situation was outstanding. This year, consumer demand was limited by rising inflation rates affecting end demand for durable goods including electrical and electronic appliances. Additionally, China's Zero-COVID policies led to periodic lockdowns in many major cities resulting in both labor shortages and strikes, particularly in the electronic industry, which interrupted some production. ABS - Naphtha spread was USD 695 per ton in 4Q22, down by 13% when compared to USD 799 per ton in 3Q22. Demand did not recover seasonally caused by a rise in global inflation leading end customers to delay the order. Besides, Chinese government's Zero-COVID policy and worker protests in the electronics sector disrupted production. Meanwhile, Asian producers continued to reduce production due to dropped production margins as rising costs.

- PS Spread - Lower:** PS - Naphtha spread in 2022 was USD 731 per ton decreasing by 23% when compared to USD 955 per ton in 2021. PS demand weakened because of rising inflation and COVID-19 epidemic situation in China. Plus, most end consumers preferred to reduce inventories towards the end of the year. Apart from that, PS supply was operated at a low level to meet market demand, especially in China where domestic demand was sluggish and obtained narrower

margins. PS - Naphtha spread in 4Q22 was USD 607 per ton decreasing by 18% when compared to 3Q22 of USD 738 per ton owing to concerns over the sluggish global economy dumping demand for electrical and electronic products. Furthermore, some end-product manufacturers had high inventory levels and intended to release some inventories at the end of the year, thus a narrower spread.

1.2.5 Product to Feed Margin (Product to Feed: PTF)*



Remark: * Included Trading business (iPolymer) and New S-Curve business (Rakpasak)



In 2022, the Market PTF was Baht 3,783 million being down by Baht 9,885 million, YoY, as most Petrochemical products spreads decreased.

The Market Product to Feed Margin (Market PTF) in 2022 was Baht 3,783 million or USD 1.68 per barrel declining by Baht 9,885 million or USD 4.38 per barrel from that last year. This was mainly because most Petrochemical products spreads were down, especially those in Styrenics and Olefins groups, due to weakened overall economic situations being resulted from the Russia-Ukraine conflict, along with China's Zero-COVID policy. The Company obtained the net inventory gain of Baht 2,710 million or USD 1.21 per barrel comprising of a stock gain of Baht 3,573 million against an NRV of Baht 863 million. The aforementioned figures led to the Accounting Product to Feed Margin (Accounting PTF) equaling Baht 6,493 million or USD 2.89 per barrel decreasing by Baht 11,994 million or USD 5.31 per barrel from that in the previous year.

1.3 Power Plant and Utility business units

Capacity and Sales

	2022	2021	%Change
Utilization Rate			
Electricity	62%	75%	(13%)
Steam	57%	61%	(4%)
Sales (Baht million)			
Electricity	2,208	2,032	9%
Steam	1,590	1,107	44%
Others	243	320	(24%)
Total	4,041	3,459	17%

Utilization rates of Electricity and Steam In 2022, the utilization rate of Electricity was 62% decreasing by 13% from that in 2021 of 75% whereas the utilization rate of Steam was 57% in 2022 reducing by 4% from that last year.

The net sales of Power and Utility businesses In 2022, the Company recorded the net sales of Power and Utility businesses equaling Baht 4,041 million, up by Baht 582 million or 17% compared with that in 2021 of Baht 3,459 million thanks to improving average selling prices of Electricity and Steam.

2. Total Operating Performance

Total Operating Performance of IRPC and its subsidiaries for year 2022 are as follows;

	Unit : Million Baht		Unit : USD per barrel	
	2022	2021	2022	2021
Average FX (THB/USD)	35.23	32.15		
Total Crude Intake (Mbbbl)	63.86	70.19		
Average Crude (USD/bbl) ⁽¹⁾	104.67	72.43		
Sales ⁽²⁾	324,800	255,115	144.37	113.05
Net Sales ⁽³⁾	318,396	235,174	141.52	104.22
Variable Cost (Raw Material - Market Price)	(294,635)	(205,586)	(130.95)	(91.10)
Market GIM	23,761	29,588	10.57	13.12
Stock Gain (Loss)	4,384	13,112	1.95	5.81
Net Realizable Value (NRV)	(2,347)	(54)	(1.04)	(0.02)
Realized Gain (Loss) on Oil Hedging	(8,385)	(1,954)	(3.73)	(0.87)
Net Inventory Gain (Loss)	(6,348)	11,104	(2.82)	4.92
(Accounting GIM)	17,413	40,692	7.75	18.04
Other Incomes ⁽⁴⁾	1,351	1,968	0.60	0.87
Selling Expenses	(1,964)	(2,105)	(0.87)	(0.93)
Accounting GIM and Other Incomes	16,800	40,555	7.48	17.98
OPEX	(12,813)	(13,594)	(5.70)	(6.03)
EBITDA	3,987	26,961	1.78	11.95
Depreciation	(8,059)	(8,587)	(3.58)	(3.81)
EBIT	(4,072)	18,374	(1.80)	8.14
Net Financial Cost	(1,836)	(1,699)	(0.82)	(0.75)
Gain (Loss) on Financial Derivatives	238	(302)	0.11	(0.13)
Gain (Loss) on Foreign Exchange from Borrowing	(171)	(474)	(0.08)	(0.21)
Unrealized Gain (Loss) on Oil Hedging	28	313	0.01	0.14
Gain (Loss) on Impairment and Disposal of Fixed Assets	20	(46)	0.01	(0.02)
Gain (Loss) on Investment	289	719	0.13	0.32
Other Expenses	2	(1)	0.00	(0.00)
Net Profit (Loss) before Income Tax	(5,502)	16,884	(2.44)	7.49
Income Tax	1,142	(2,351)	0.51	(1.04)
Gain (Loss) on non-controlling interests	(4)	(28)	-	(0.01)
Net Profit (Loss)	(4,364)	14,505	(1.93)	6.44
Earning per share (EPS) (Baht/Share)	(0.21)	0.71		

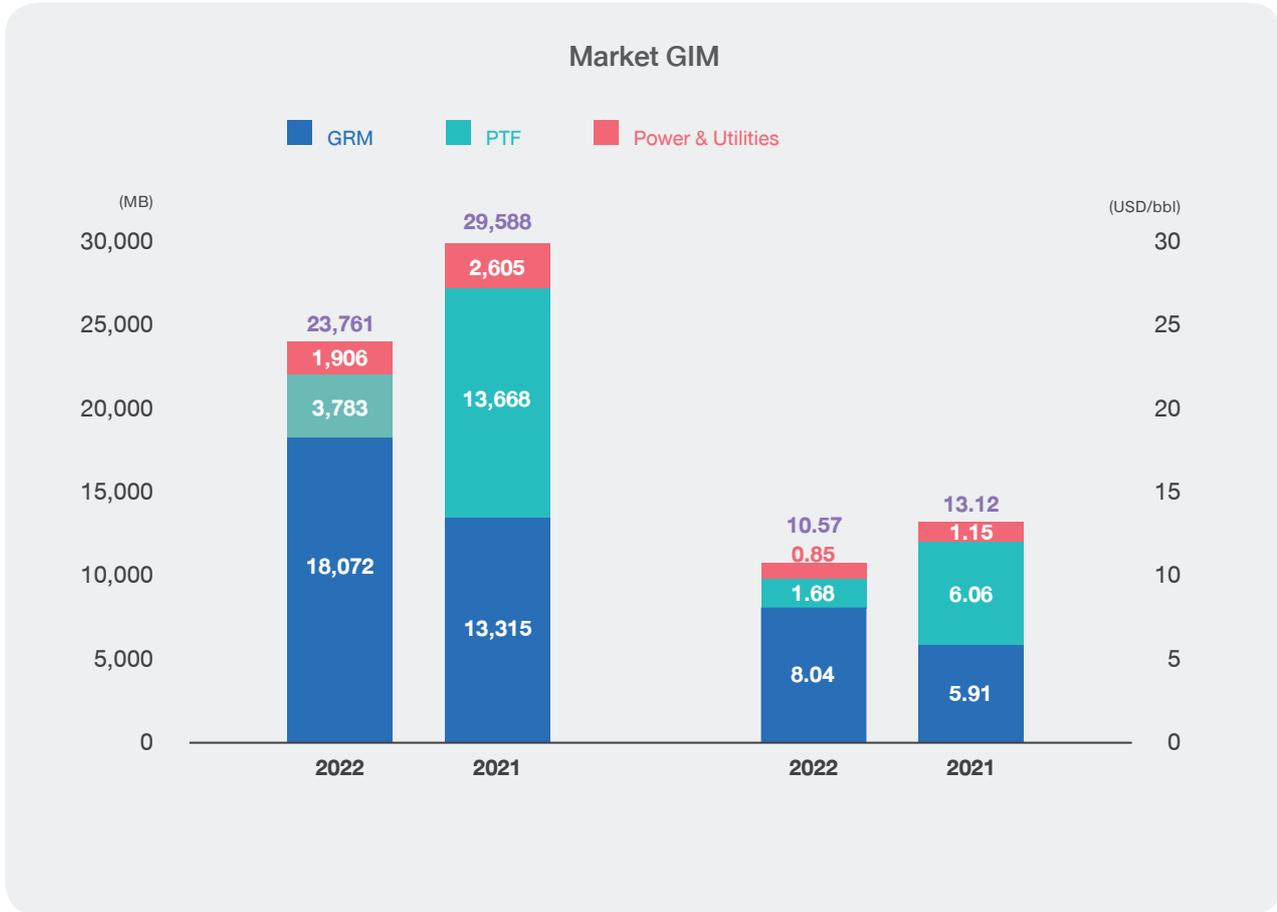
Note: ⁽¹⁾ Average market prices of crude used in the production process

⁽²⁾ Sales include (1) Petroleum Sales (2) Petrochemical Sales (3) Power and Utilities Sales (4) Sales of tank farm and port service, etc.

⁽³⁾ Net Sales include (1) Petroleum Sales (excluding excise tax) (2) Petrochemical Sales (3) Power and Utilities Sales

⁽⁴⁾ Other Incomes include land, tank farm and port service etc.

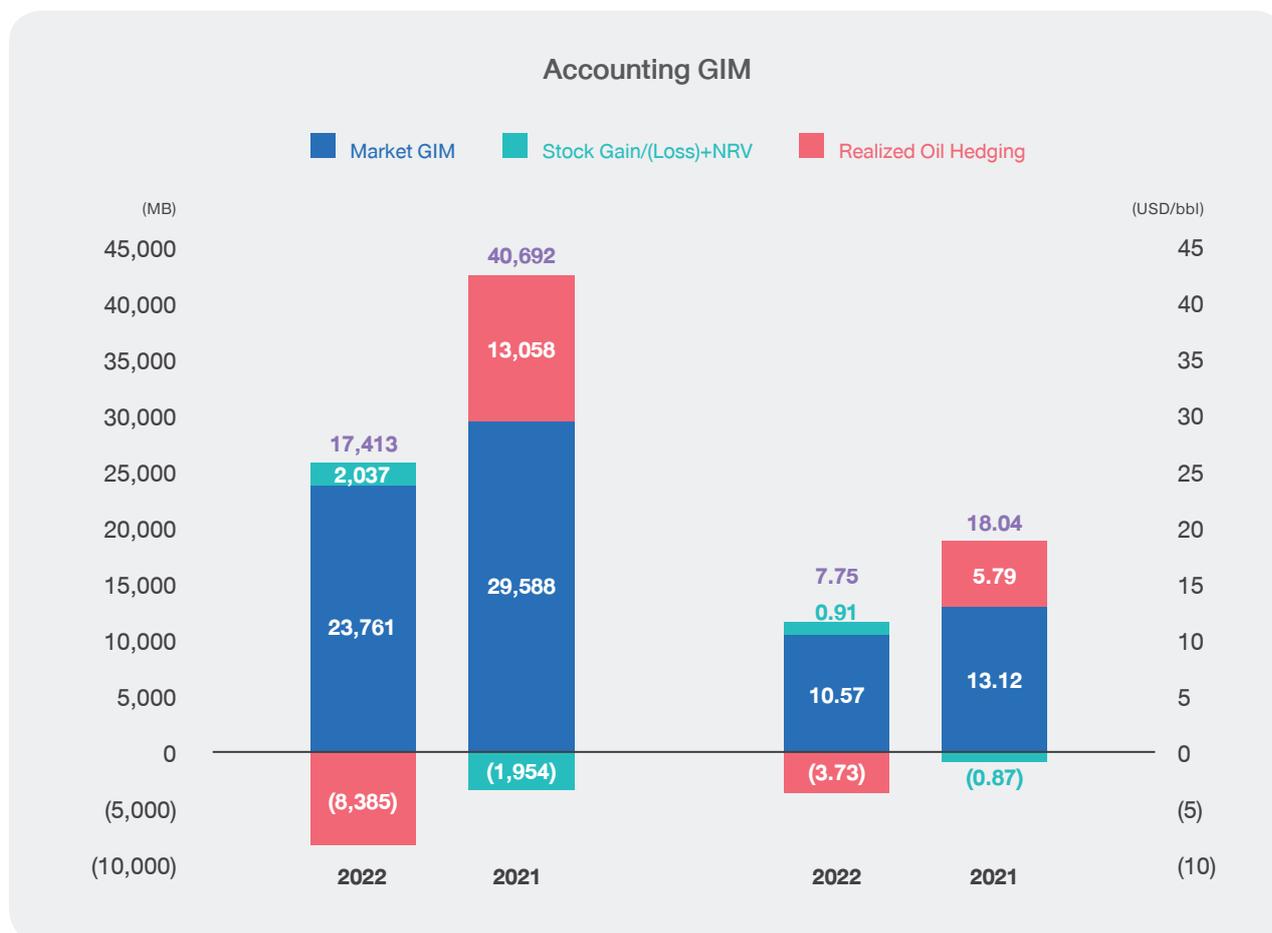
2.1 Market Gross Integrated Margin (Market GIM)



The Market Gross Integrated Margin (Market GIM) in 2022 was Baht 23,761 million or USD 10.57 per barrel moving down by Baht 5,827 million or USD 2.55 per barrel from that last year. This was mainly from lessened spreads of most Petrochemical products, especially those in Olefins

and Styrenics groups, due to recession concerns curbing the demand. Also, crude premium escalated by USD 5.14 per barrel whereas Petroleum products spreads boosted significantly.

2.2 Accounting Gross Integrated Margin (Accounting GIM)



The Accounting Gross Integrated Margin (Accounting GIM) in 2022 was Baht 17,413 million or USD 7.75 per barrel being down by Baht 23,279 million or USD 10.29 per barrel from that last year as the Market GIM dropped by Baht 5,827 million or USD 2.55 per barrel. In addition, the Company obtained the net inventory loss of Baht 6,348 million or USD 2.82 per barrel compared to the net inventory gain

of Baht 11,104 million or USD 4.92 per barrel in 2021. The net inventory loss in 2022 comprised of a stock gain amounting to Baht 4,384 million or USD 1.95 per barrel, a Net Realizable Value (NRV) of Baht 2,347 million or USD 1.04 per barrel and a realized oil hedging loss of Baht 8,385 million or USD 3.73 per barrel.

(Unit: MB)

	2022	2021	%Change
Market GIM	23,761	29,588	(20%)
Stock Gain/(Loss)	4,384	13,112	(67%)
NRV	(2,347)	(54)	n.a.
Realized Oil Hedging	(8,385)	(1,954)	(329%)
Net Inventory Gain/(Loss)	(6,348)	11,104	(157%)
Accounting GIM	17,413	40,692	(57%)

2.3 Other Incomes

Other incomes consist of port and tank farm services and other services. In 2022, the Company had other incomes of Baht 1,351 million decreasing by Baht 617 million from that in the previous year as incomes from port and tank farm services softened.

2.4 Operating Expenses

In 2022, the Company had operating expenses of Baht 12,813 million decreasing by Baht 781 million from that in the prior year, mainly from employee expenses.

The research and development (R&D) expenses for enhancing the Company's competitiveness in 2022 were Baht 320 million. Such expenses comprised of expenses for internal and external R&D, salaries of staffs in the R&D department and costs of utilities supporting R&D activities amounting to Baht 222 million along with expenses for R&D equipment amounting to Baht 98 million.

2.5 Depreciation

In 2022, the depreciation was Baht 8,059 million decreasing by Baht 528 million from that in the prior year, mainly from fully depreciated assets.

2.6 Net Financial Cost

In 2022, the net financial cost was Baht 1,836 million enhancing by Baht 137 million from that last year, mainly due to increasing interest rates.

2.7 Gain (Loss) on Financial Derivatives

In 2022, there was a gain on financial derivatives amounting to Baht 238 million, mainly from a gain on Cross Currency Swap (CCS) of Baht 23 million and a gain on Interest Rate Swap (IRS) of Baht 214 million compared to a loss on financial derivatives of Baht 302 million in 2021.

2.8 Gain (Loss) on Foreign Exchange from Borrowing

In 2022, the Company recorded a loss on foreign exchange (FX) from U.S. dollar-borrowings of Baht 171 million. The loss declined by Baht 303 million, YoY, as Thai Baht was less depreciated. The FX moved from 33.59 Baht per USD at the end of 2021 to 34.73 Baht per USD at the end of 2022. In any case, the Company had long-term liabilities in USD amounting to USD 100 million at the end of 2022.

2.9 Unrealized Gain (Loss) on Oil Hedging

In 2022, the Company recorded an unrealized gain on oil hedging of Baht 28 million decelerating by Baht 285 million from that in the previous year.

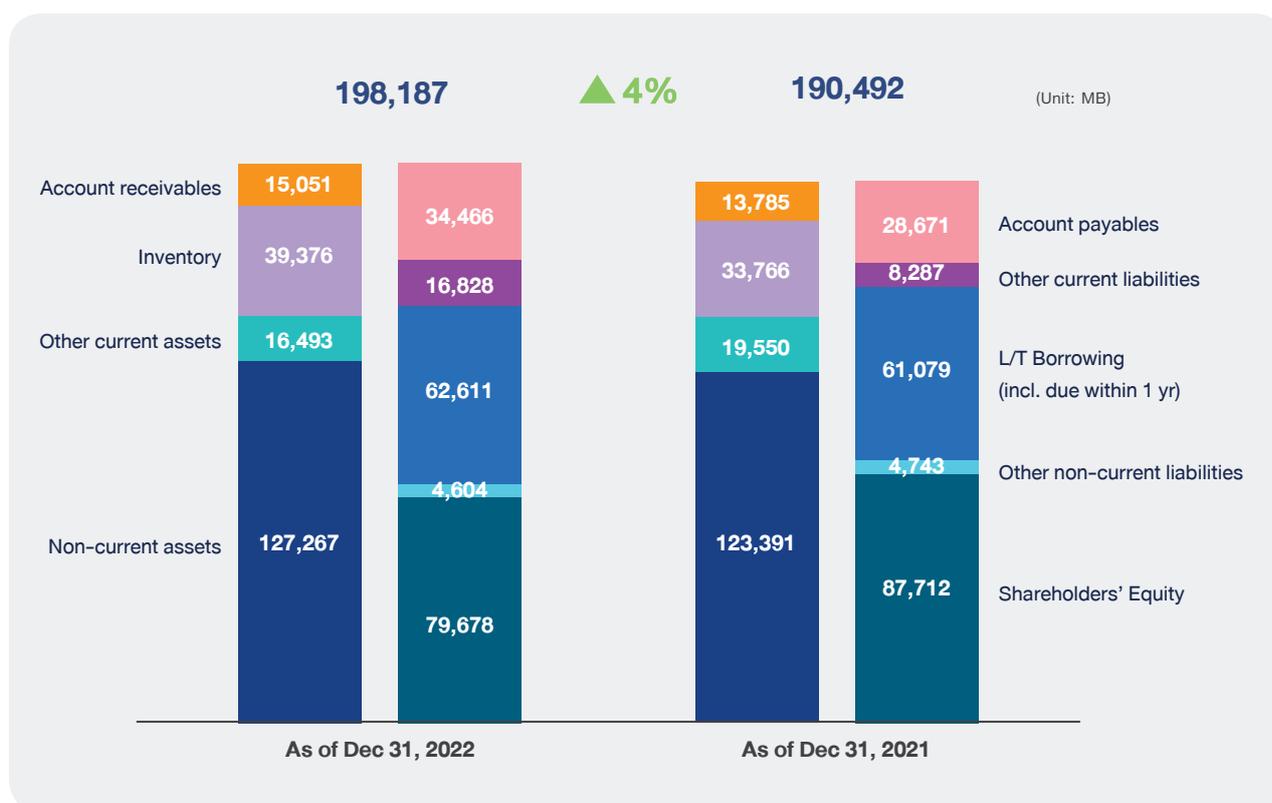
2.10 Gain (Loss) on Investments

In 2022, the Company recorded a gain on investments of Baht 289 million decreasing by Baht 430 million from that in the previous year, mainly from lower profit sharing from investments in associates and joint ventures.

2.11 Corporate Income Tax

In 2022, the Company recorded a corporate income tax benefit of Baht 1,142 million while recorded a corporate income tax of Baht 2,351 million last year. This was due to the lessened performance.

Financial Positions as of December 31, 2022



Assets

As of December 31, 2022, the Company had total assets of Baht 198,187 million increasing by Baht 7,695 million or 4% from that on December 31, 2021. It was due to the following reasons:

- **Trade receivables:** increased by Baht 1,266 million or 9 per cent from that at the end of 2021, mainly due to a rise in average selling prices following the hiked crude oil price.

The Company's credit term policy is about 7 - 120 days and most customers made payment on schedule. As of December 31, 2022, there were trade receivables being overdue of over 3 months amounting to Baht 25 million, which incorporated in the Company's provision for doubtful debt of Baht 25 million. The average collection period for 2022 was 16 days decreasing by 1 day from that at the end of 2021.

Trade receivables by payment period are as follows;

(Unit: MB)

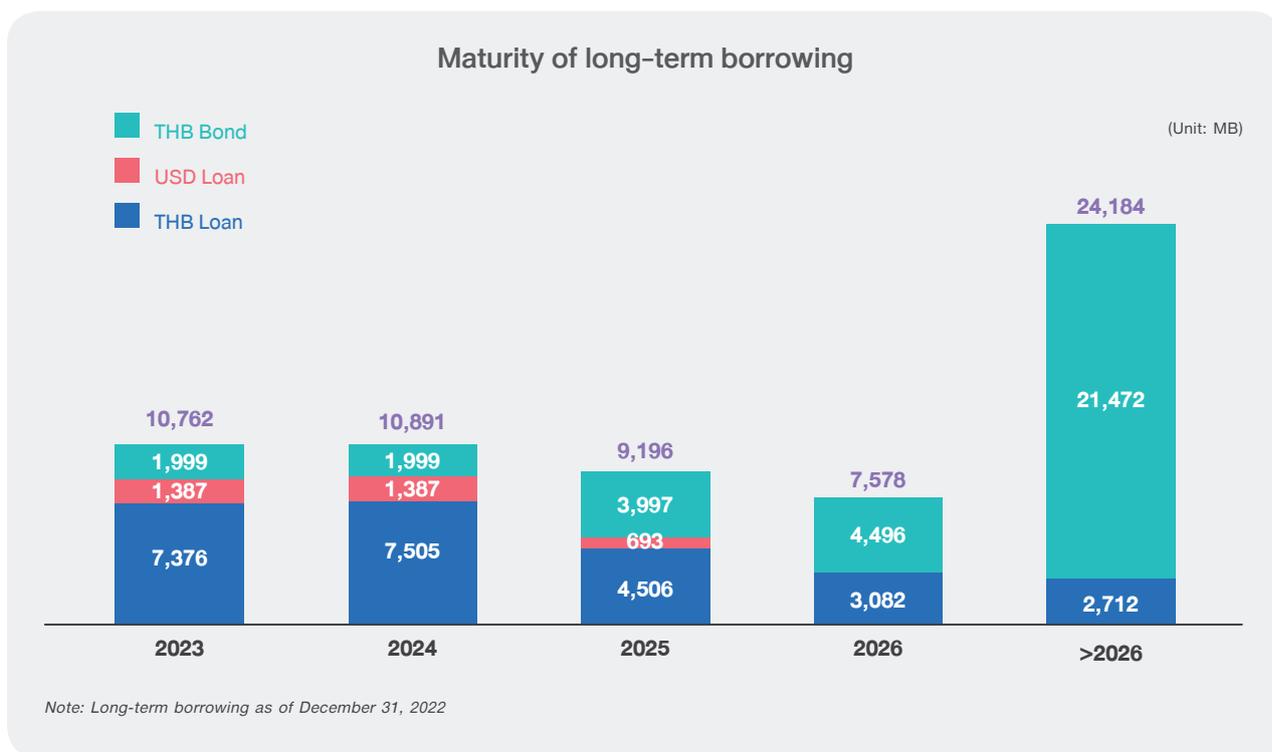
	2022			2021		
	Related parties	Other parties	Total	Related parties	Other parties	Total
Current	7,884	6,761	14,645	4,911	7,533	12,444
Overdue	239	192	431	36	1,335	1,371
- less than 3 months	239	167	406	22	1,303	1,325
- over 3 months but less than 12 months	-	1	1	14	4	18
- over 12 months	-	24	24	-	28	28
Total	8,123	6,953	15,076	4,947	8,868	13,815
<u>Less</u> Allowance for doubtful accounts	-	(25)	(25)	-	(30)	(30)
Total Account Receivables	8,123	6,928	15,051	4,947	8,838	13,785

- **Inventory:** increased by Baht 5,610 million or 17% from that at the end of 2021, mainly due to a 7% increase in the crude oil price and products prices following market situations as well as a 5% increase in inventory volume. The average inventory period was 42 days decreasing by 2 days from that at the end of 2021.
- **Other current assets:** decreased by Baht 3,057 million or 16% from that at the end of 2021. This was mainly attributed to a drop in cash and cash equivalents by Baht 8,006 million and a decrease in other receivables amounts due from related parties by Baht 1,640 million. Meanwhile, there was an increase in other receivables by Baht 3,902 million, an increase in prepaid corporate income tax by Baht 1,843 million and an increase in refundable value-added tax by Baht 859 million.
- **Non-current assets:** increased by Baht 3,876 million or 3% from that at the end of 2021, mainly due to a rise in fixed assets and investment properties of Baht 2,300 million. Most of which increased due to an increase in the major turnaround expense. Moreover, there was a rise in deferred tax assets by Baht 1,173 million.

Liabilities

As of December 31, 2022, the Company had total liabilities of Baht 118,509 million increasing by Baht 15,729 million or 15% from what was stated as of December 31, 2021. It was due to the following reasons:

- **Trade payables:** increased by Baht 5,795 million or 20% compared to that at the end of 2021. It was mainly due to an increase in crude oil price following the market situations. The average payment period was 37 days decreasing by 5 days from that at the end of 2021.
- **Other current liabilities:** increased by Baht 8,541 million or 103% compared to that at the end of 2021, mainly due to a rise in short-term borrowing from financial institutions by Baht 9,000 million and a rise in other payables by Baht 1,005 million. While a drop in advance receipts for goods by Baht 665 million and a decrease in accrued bonus expenses by Baht 611 million.
- **Long-term borrowing including current portion within one year:** current portion within one year: increased by Baht 1,532 million compared to that at the end of 2021, mainly due to the issuance of unsubordinated and unsecured debentures in the amount of Baht 12,000 million and loss on foreign exchange of Baht 170 million, while the repayment of borrowing and debentures of Baht 10,650 million.



The details of long-term borrowings are shown below;

(Unit: MB)

	Dec 31, 2022	Dec 31, 2021	Change
Thai Baht Bonds	33,963	23,972	9,991
USD Loan	3,467	4,688	(1,221)
Thai Baht Loan	25,181	32,419	(7,238)
Total Long-term Borrowing	62,611	61,079	1,532
less current portion of long-term borrowing	(10,762)	(10,585)	(177)
Net Outstanding Long-term Borrowing	51,849	50,494	1,355

Note: As of December 31, 2022, the Company had Cross Currency Swap (CCS) in a total amount of USD 110 million.

Shareholders' Equity

As of December 31, 2022, shareholders' equity amounted to Baht 79,678 million, which decreased from what was stated as of December 31, 2021 by Baht 8,034 million or 9%. This was mainly from the net loss amounting to Baht 4,364 million and dividend paid by Baht 3,674 million.

Statement of Cash Flow

(Unit: MB)

		Jan - Dec 2022	Jan - Dec 2021
1	EBITDA	3,987	26,961
2	Change in operating assets and liabilities	(7,699)	(15,619)
3	Net cash flows from (used in) operating activities	(3,712)	11,342
4	Net cash flows from (used in) investing activities	(8,931)	(2,853)
5	Net cash flows from (used in) financing activities	4,637	(6,104)
6	Net increase (decrease)	(8,006)	2,385
7	Cash at beginning	11,236	8,851
8	Cash at ending	3,230	11,236

As of December 31, 2022, the ending cash was Baht 3,230 million. Net cash flow decreased by Baht 8,006 million, which was mainly contributed from the following items:

- **Net cash outflow from operating activities:** of Baht 3,712 million. The cash outflow was mainly from an increase in inventory of Baht 8,009 million, an increase in other receivables of Baht 3,902 million, a payment for net corporate income tax of Baht 2,495 million and an increase in trade receivables of Baht 1,300 million. Nevertheless, the cash inflow was mainly from EBITDA of Baht 3,987 million, an increase in trade payables of Baht 5,802 million and a drop in other receivables from related parties of Baht 1,628 million.
- **Net cash outflow from investing activities:** of Baht 8,931 million, mainly from investment in Ultra Clean Fuel Project (UCF), disbursement for the completion of the expansion and efficiency improvement projects and the capitalized major turnaround expenses.
- **Net cash inflow from financing activities:** of Baht 4,637 million, mainly from the issuance of debentures amounting to Baht 11,982 million and the short-term borrowing from financial institutions of Baht 9,000 million. Nevertheless, the cash outflow mainly comprised of long-term loans repayment of Baht 10,650 million, dividend payment of Baht 3,674 million and interest payment of Baht 1,923 million.

Liquidity and Capital Structure

In 2022, current ratio was 1.14 times decreasing by 0.27 times compared with that in 2021 of 1.41 times. This was mainly owing to a rise in the short-term borrowing from financial institutions. Thus, the Company has sufficient liquidity for its operations. At the end of 2022, net interest bearing debt to equity ratio was 0.86 times increasing by 0.29 times from that in 2021 of 0.57 times. This was mainly due to a rise in the short-term borrowing from financial institutions and a decline in shareholders' equity from lower retained earning. The Company could complete all payments on due date and comply with all of the Financial Covenants.

Other Factors Influencing Financial Performance

2023 Business Outlook

1. Petroleum Business

2023 Crude oil outlook: The global oil demand forecast is approximately 103 million barrels per day being approximate to the pre-COVID-19 demand level. Such demand forecast increases by about 2 million barrels per day from 101 million barrels per day in 2022 thanks to eases of COVID-19-related restrictions in several countries. China also eased the restrictions and reopened their country in early 2023, which is predicted to escalate oil demand significantly since China is the world's largest net oil importer. Nevertheless, factors that need to be monitored in terms of impacts on oil demand include inflation issues arising across the world popping up recession concerns, the Russia-Ukraine conflict's situations and sanctions of U.S. and European countries on Russia. Crude oil production in 2023 is seen to improve by around 2 million barrels per day to 103 million barrels per day balancing with the demand. Most of the production tends to be contributed by U.S. producers accounting for around 1.3 million barrels per day. Meanwhile, it is foreseen that such production will have a tight outlook as most U.S. producers focus on capturing profits, hence slowly accelerating production, while OPEC and allies agree to decrease their production by 2 million barrels per day every month until end 2023 to uphold the crude oil price being dimmed by recession concerns. Moreover, the U.S.' crude oil inventory was at a low level due to SPR release in 2022 leading to supply insecurity in case some significantly supply disruptions occur. The aforementioned outlook entails Dubai crude oil price forecast at USD 85-95 per barrel slumping from the 2022 average price of USD 96 per barrel

2. Petrochemical Business

2023 Petrochemical outlook: Market demand is expected to grow by 1.5-2.0% in 2023, especially demand from China that will start to recover from the ease of COVID-19 control measures and various economic stimulus measures including government investment and incentives for enhanced domestic spending, along with Chinese government's reopening policy being seen to benefit businesses in the service sector, mainly those related to tourism. In the meantime, the demand remains under pressure from various factors. One of the factors include inflation that is predicted to persist at a high level tending to limit consumer spending or motivate consumers to be more cautious on spending possibly resulting in declined end product demand in certain industries. Soaring production costs due to probably high crude oil and energy prices relating to the prevailing Russia-Ukraine conflict, along with sanctions imposed by the U.S. and European Union on Russia and the increase in financial costs from rising interest rates are prone to pressure the demand as well, even though the interest rate increase has decelerated. On the supply side, petrochemical products supply in Asia-Pacific region is seen to rise continuously, particularly in China, Indonesia, Malaysia, and Thailand. This is partially due to postponed start-up plans from 2022; besides, demand for imported petrochemical products from China tends to decline continually because of policies to boost domestic production capacity. Such aspects may lead to an oversupply in the region and heighten market competition.

Moreover, the industry also need to adapt itself for facing upcoming trade restrictions on climate change that many countries have to set targets to reduce emissions of carbon dioxide and other greenhouse gases from energy and industrial sectors. The U.S. and European Union will begin imposing restrictions on the import of high-emission products including petrochemical products and others in the production chain. This requires operators in the petrochemical industry to adjust their operations to comply with such requirements.

Investment Projects

1. Investment Project Progress

1.1 The Ultra Clean Fuel Project (UCF): The objective of the UCF Project is to increase Refinery plant's efficiency and upgrade Diesel quality to meet the Euro 5 (Euro V) standard in accordance with the Ministry of Energy's policy determining that starting from January 1, 2024, Diesel distribution must meet Euro 5 standard. Under the Euro 5 standard, the permitted sulfur level will decline to 10 parts per million (PPM) from 50 PPM under Euro 4. The project will increase the Company's competitiveness through the rising demand for Low Sulfur Diesel in domestic market and ASEAN Economic Community (AEC). The UCF project is able to reinforce competitiveness of the Company involving Diesel as a main product; besides, the project is environmentally friendly and in line with the Company's Eco Factory policy. Currently, the project is under a construction process and has been planned to commercial operate within January 2024. Once the project is completed, the Company's capacity will be able to convert entire high-sulfur Diesel to low-sulfur Diesel following Euro 5 standards.

1.2 The Floating Solar Power Plant Project (8.5 megawatts): The project will generate electricity from solar energy for internal consumption. The pontoon material is developed by the Research & Development (R&D) on specialty High Density Polyethylene (HDPE). This project is also using the water surface of the Company's reservoirs and is able to reduce greenhouse gas (CO₂ Emission) by about 5,000 tons per year. Currently, the project is under procurement. It will be able to supply electricity in 4Q23.

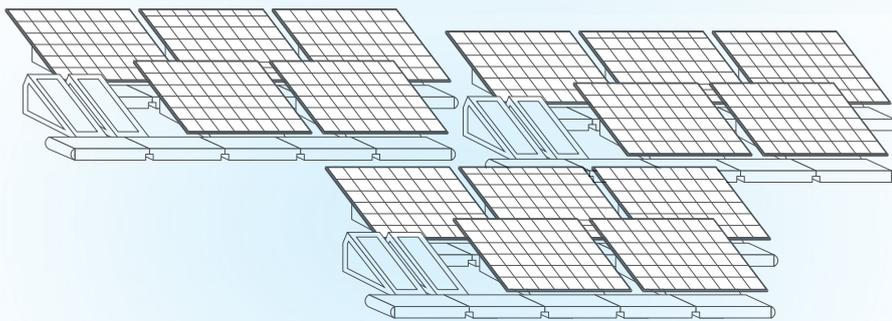
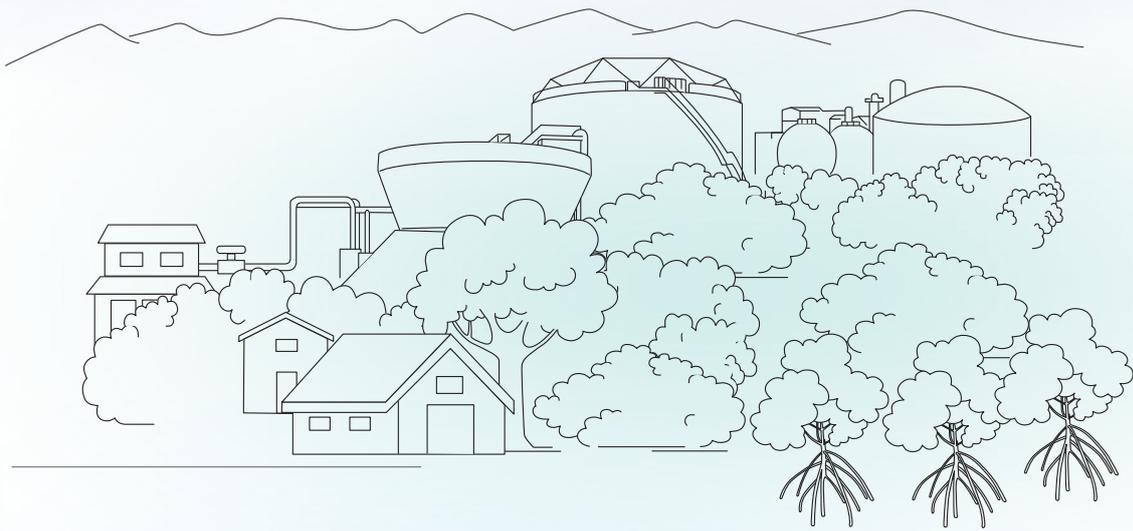
2. Investment Plan

The Board of Directors has approved the company's five-year (Year 2023-2027) investment plan in an aggregate amount of Baht 36,456 million. The details are as follow:

(Unit: MB)

Investment Projects	2023	2024	2025	2026	2027	Total
1. Ultra Clean Fuel Project (UCF)	4,090	2,649	-	-	-	6,739
2. Strengthen Project	754	308	-	-	-	1,062
3. Plant Improvement Projects & Turnaround	2,404	1,606	1,225	1,692	2,705	9,632
4. Strategic Projects	3,151	8,489	7,375	8	-	19,023
Total	10,399	13,052	8,600	1,700	2,705	36,456

The investment projects are the investment plan which will encourage the Company's business growth where the major investment contributes to strategic and value added projects.



General Information and Other Important Information

General Information

Company Name	IRPC Public Company Limited
Stock Symbol	IRPC
Registration No.	0107537002567
Type	Refining and Petrochemical
Sector	Natural Resources
Group	Energy and Utilities
Registered Capital	20,475,000,000 Baht divided into 20,475,000,000 ordinary shares at par value of 1 Baht per share
Issued and Paid-up Capital	20,434,419,246 Baht divided into 20,434,419,246 shares at par value of 1 Baht per share
Locations	<p>Head Office and Plants 299 Moo 5, Sukhumvit Road, Choeng Noen Subdistrict, Mueang Rayong District, Rayong Tel. 0-3861-1333, Fax. 0-3861-2813</p> <hr/> <p>Bangkok Office 555/2 Energy Complex, Building B, Floors 6th - 10th, Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok Tel. 0-2765-7000, Fax. 0-2765-7001</p>
Website	www.irpc.co.th

References

Securities Registrar

Thailand Securities Depository Co., Ltd.
 93 Ratchadaphisek Road, Din Daeng, Din Daeng, Bangkok 10400
 Tel. 0-2009-9999, Fax. 0-2009-9991
 Website: www.set.or.th/tsd

Auditor

Mr. Kittiphan Kiatsomphop
 CPA No. 8444-8050
 EY Office Company Limited
 193/136-137 Lake Rajada Office Complex, Floor 33rd,
 Ratchadaphisek Road, Khlong Toei, Khlong Toei, Bangkok 10110
 Tel. 0-2264-9090, Fax. 0-2264-0789-90

Debenture Registrar (THB)

2020 Series Debentures
 (IRPC239A, IRPC259A, IRPC229A, IRPC309A, IRPC359A)
 Kasikorn Bank Public Company Limited
 400/22 Phaholyothin Road, Samsen Nai, Phayathai, Bangkok 10400
 Tel. 0-2470-1038

2021 Series Debentures
 (IRPC265A, IRPC245A, IRPC285A, IRPC315A, IRPC365A)
 Bank of Ayudhya Public Company Limited
 1222 Rama III Road, Bang Phongphang, Yannawa, Bangkok 10120
 Tel. 0-2296-5696

2022 Series Debentures (IRPC275A)
 Krung Thai Bank Public Company Limited
 977/2 S.M. Tower, Floor 3rd, Phaholyothin Road, Phayathai, Phayathai,
 Bangkok 10400
 Tel. 0-2298-0830-31

2022 Series Debentures
 (IRPC265B, IRPC275B, IRPC295A, IRPC325A, IRPC345A)
 Bank of Ayudhya Public Company Limited
 1222 Rama III Road, Bang Phongphang, Yannawa, Bangkok 10120
 Tel. 0-2296-5696

Common Stock

As of December 31, 2022, IRPC had registered capital 20,475,000,000 Baht issued and paid-up capital 20,434,419,246 Baht, with a par value of 1 Baht per share.

Debentures

As of December 31, 2022, IRPC had issued Thai Baht-denominated debentures to raise funds domestically, amounting to Baht 34,000 million, with details as follows:

Thai Baht Debentures

On August 21, 2020, IRPC obtained the permission from Office of the Securities and Exchange Commission (SEC) to issue and offer debentures under IRPC Public Company Limited's debenture scheme for 2020, totaling no more than Baht 28,000 million, which is part of the Medium Term Note Program (MTN), within a 2-year period. On September 11, 2020, the company issued 5 tranches of unsubordinated and unsecured debentures with a debenture holders' representative, totaling Baht 12,000 million at Baht 1,000 par value, as detailed below:

- (1) Tranche 1 debentures totaling 2,000,000 units, valued at Baht 2,000 million with a fixed interest rate at 3.00% per annum, and maturity date: September 11, 2023
- (2) Tranche 2 debentures totaling 4,000,000 units, valued at Baht 4,000 million with a fixed interest rate at 3.50% per annum, and maturity date: September 11, 2025
- (3) Tranche 3 debentures with a tenor of 2 years, totaling 2,000,000 units, valued at Baht 2,000 million with a fixed interest rate at 2.76% per annum, and maturity date: September 11, 2022. The company has redeemed the debentures in full at maturity.
- (4) Tranche 4 debentures with a tenor of 10 years, totaling 1,300,000 units, valued at Baht 1,300 million with a fixed interest rate at 3.93% per annum, maturity date: September 11, 2030.
- (5) Tranche 5 debentures with a tenor of 15 years, totaling 2,700,000 units, valued at Baht 2,700 million with a fixed interest rate at 4.40% per annum, maturity date: September 11, 2035.

On May 20, 2021, IRPC issued 5 tranches of unsubordinated and unsecured debentures with a debenture holders' representative under its debenture scheme comprising 5 tranches, totaling Baht 12,000 million at Baht 1,000 par value, as detailed below:

- (1) Tranche 1 debentures with a tenor of 5 years, totaling 4,000,000 units valued at Baht 4,000 million with a fixed interest rate at 3.00% per annum, maturity date: May 20, 2026.
- (2) Tranche 2 debentures with a tenor of 3 years, totaling 2,000,000 units, valued at Baht 2,000 million with a fixed interest rate at 1.77% per annum, maturity date: May 20, 2024.
- (3) Tranche 3 debentures with a tenor of 7 years, totaling 2,000,000 units, valued at Baht 2,000 million with a fixed interest rate at 2.91% per annum, maturity date: May 20, 2028.

- (4) Tranche 4 debentures with a tenor of 10 years, totaling 2,000,000 units valued at Baht 2,000 million with a fixed interest rate at 3.38% per annum, maturity date: May 20, 2031.
- (5) Tranche 5 debentures with a tenor of 15 years, totaling 2,000,000 units valued at Baht 2,000 million with a fixed interest rate at 4.10% per annum, maturity date: May 20, 2036.

On May 20, 2022, IRPC issued 6 tranches of unsubordinated and unsecured debentures with a debenture holders' representative under the debenture scheme (borrowing limit increased to Baht 40,000 million), totaling Baht 12,000 million at a par value of Baht 1,000, as detailed below:

- (1) Tranche 1 debentures with a tenor of 5 years, totaling 6,000,000 units valued at Baht 6,000 million with a fixed interest rate at 3.10% per annum, maturity date: May 20, 2027.
- (2) Tranche 2 debentures with a tenor of 4 years, totaling 500,000 units valued at Baht 500 million with fixed interest rate at 3.03% per annum, maturity date: May 20, 2026.
- (3) Tranche 3 debentures with a tenor of 10 years, totaling 1,500,000 units valued at Baht 1,500 million with fixed interest rate at 4.52% per annum, maturity date: May 20, 2032.
- (4) Tranche 4 debentures with a tenor of 12 years totaling 2,250,000 units valued at Baht 2,250 million with fixed interest rate at 4.86% per annum, maturity date: May 20, 2034.
- (5) Green debentures with a tenor of 7 years, totaling 750,000 units valued at Baht 750 million with fixed interest rate at 4.17% per annum, maturity date: May 20, 2029.
- (6) Digital debentures with a tenor of 5 years, totaling 1,000,000 units valued at Baht 1,000 million with fixed interest rate at 3.10% per annum, maturity date: May 20, 2027.

As of December 31, 2022, details of IRPC's Baht-denominated unsubordinated and unsecured debentures are summarized as follows:

Debenture	Principal (Million Baht)	Interest rate per annum	Tenor/Maturity
IRPC239A	2,000	3.00% paid every 6 months	3 years, maturity 2023
IRPC259A	4,000	3.50% paid every 6 months	5 years, maturity 2025
IRPC309A	1,300	3.93% paid every 6 months	10 years, maturity 2030
IRPC359A	2,700	4.40% paid every 6 months	15 years, maturity 2035
IRPC265A	4,000	3.00% paid every 6 months	5 years, maturity 2026
IRPC245A	2,000	1.77% paid every 6 months	3 years, maturity 2024
IRPC285A	2,000	2.91% paid every 6 months	7 years, maturity 2028
IRPC315A	2,000	3.38% paid every 6 months	10 years, maturity 2031
IRPC365A	2,000	4.10% paid every 6 months	15 years, maturity 2036
IRPC275B	6,000	3.10% paid every 6 months	5 years, maturity 2027
IRPC265B	500	3.03% paid every 6 months	4 years, maturity 2026
IRPC325A	1,500	4.52% paid every 6 months	10 years, maturity 2032
IRPC345A	2,250	4.86% paid every 6 months	12 years, maturity 2034
IRPC295A	750	4.17% paid every 6 months	7 years, maturity 2029
IRPC275A	1,000	3.10% paid every 6 months	5 years, maturity 2027
Total	34,000		

The above Baht-denominated debentures have been rated by Fitch Ratings (Thailand) Co., Ltd., with the latest credit rating, as of March 26, 2022, as A-(Tha) with stable outlook.

Dividend Policy

IRPC Public Company Limited

IRPC's policy is to pay dividends at no less than 25% of its annual net profit after tax and all other reserve allowances, as required by IRPC's Articles of Association and by law. Such dividend payment is subject to its investment plans as well as other obligations and necessities as deemed appropriate by the Board.

Subsidiaries

Each subsidiary will separately determine its own dividend payment, taking into account its operating results, cash flow balances and/or investment plans, and reserve allowances as well as other obligations as deemed appropriate by its board of directors.

Dividend Payment

	2018	2019	2020	2021	2022
Earnings per share (Baht)	0.38	(0.06)	(0.30)	0.71	(0.21)
Dividend per share (Baht)	0.19	0.10	0.06	0.22	0.07 ⁽¹⁾
Dividend payout ratio	50%	N/A	N/A	31%	N/A

Note: ⁽¹⁾ The resolution of the Board of Directors' meeting held on February 7, 2023 approved the 2023 Annual General Meeting of Shareholders to consider and approve the dividend payment for the 2022 operating results at the rate of 0.07 Baht per share.

Legal Disputes

Please find details of legal disputes in 2022 Financial Statements Annex, Item 37.

Regularly Contacted Financial Institutions

Regularly Contacted Financial Institutions

TMBThanachart Bank Public Company Limited
3000 Phaholyothin Road, Chomphon, Chatuchak, Bangkok 10900

Krungthai Bank Public Company Limited
35 Sukhumvit Road, Klong Toey Nua, Wattana, Bangkok 10110

Kasikorn Bank Public Company Limited
400/22 Phaholyothin Road, Sam Sen Nai, Phayathai, Bangkok 10400

Siam Commercial Bank Public Company Limited
9 Ratchadapisek Road, Chatuchak, Bangkok 10900

CIMB Thai Bank Public Company Limited
44 Langsuan Building, Langsuan Road, Lumpini, Pathum Wan, Bangkok 10330

Bank of Ayudhya Public Company Limited
1222 Rama III Road, Bang Phongphang, Yan Nawa, Bangkok 10120

Government Savings Bank
470 Phaholyothin Road, Sam Sen Nai, Phayathai, Bangkok 10400

Sumitomo Mitsui Banking Corporation
1 Q. House Lumpini Building, South Sathorn Road,
Thung Maha Mek, Sathorn, Bangkok 10120

Mizuho Bank, Limited
98 Sathorn Square Office Tower 32nd - 35th Floor, North Sathorn Road, Silom,
Bangrak, Bangkok 10500

Bangkok Bank Public Company Limited
333 Silom Road, Silom, Bang Rak, Bangkok 10500

Bank of China (Thai) Public Company Limited
179/4 Bangkok City Tower, South Sathorn Road,
Thung Maha Mek, Sathorn, Bangkok 10120

Industrial and Commercial Bank of China (Thai) Public Company Limited
622, Emporium Tower, L, 11th - 13th Floor, Sukhumvit Road, Khlong Ton,
Khlong Toei, Bangkok 10110



SECTION 02

Corporate Governance



- Corporate Governance Policy
- Corporate Governance Structure and Important Information about the Board of Directors, Sub-Committees, and Executives
- Report of Key Corporate Governance Activities
- Internal Control and Connected Transactions

Corporate Governance Policy

IRPC's Board of Directors has consistently prioritized Good Corporate Governance, stipulating that the company must announce the Corporate Governance Policy, develop Corporate Governance Handbook, and establish Corporate Governance Code that apply to all members of the Board, IRPC executives and employees. This is to provide practical guidelines on ethical conduct that satisfy national and international standards. Our Corporate Governance Policy is based on good corporate principles and practices of Office of the Securities and Exchange Commission

(SEC), the Stock Exchange of Thailand (SET), Corporate Governance Assessment Report of the Thai Institute of Directors (IOD), Organization for Economic Cooperation and Development (OECD), ASEAN CG Scorecard, Dow Jones Sustainability Index (DJSI) and best practices of leading global corporations. These guidelines help bolster confidence in the company among all stakeholders as well as enable proper and effective management and promote corporate competitiveness on the path towards sustainable growth.

Overview of Corporate Governance Policy and Guidelines

Corporate Governance Policy and Guidelines

The Board of Directors intends for IRPC the intention to promote IRPC Public Company Limited and its subsidiaries in the "IRPC Group" to steadfastly operate within the framework of Good Corporate Governance principles in pursuit of operational excellence, transparency, accountability, and benefits to shareholders while making sure stakeholders' interests are protected. To accomplish this aim, IRPC has adopted the SET's six pillars of Good Corporate Governance as practical guidelines to be observed by the Board of Directors, executives, the management, and employees as follows:

1. Creation of Long Term Value
2. Responsibility
3. Equitable Treatment
4. Accountability
5. Transparency
6. Ethics and Code of Conduct

In addition to the six pillars of Good Corporate Governance prescribed of the SET, the Board also adopted the Thai Corporate Governance Code for Listed Companies 2017 (CG Code) issued by the SEC Office as a benchmark, with a view to further improve the company's Corporate Governance Policy and Guidelines. The following principles apply to IRPC's Board of Directors:

- Principle 1:** Establish clear leadership role and responsibilities of the Board to promote sustainable value creation
- Principle 2:** Determine the main sustainability objectives and goals of the business
- Principle 3:** Improve Board effectiveness
- Principle 4:** Recruit capable senior executives and enhance human resource management
- Principle 5:** Nurture innovation and responsible business practices
- Principle 6:** Ensure appropriate risk management and internal control systems

Principle 7: Maintain financial integrity and ensure disclosure compliance

Principle 8: Encourage shareholder engagement and communication

Policies and procedures for the Board of Directors

1. The Board of Directors

The Board of Directors is appointed by shareholders at the annual general shareholders' meeting. All directors must possess all required qualifications, and have no prohibited characteristics as prescribed by relevant laws and regulations. The company has introduced a policy of diversity, which is considered as part of the nomination and selection process of the Board of Directors, to ensure its composition is suitably diverse in accordance with the good practice guidelines of the Corporate Governance Handbook and the company's code of business conduct. The nomination and selection process are based on the Board Skills Matrix, encompassing such diverse areas of expertise as engineering, industry, economics, finance, business administration, political science, accounting, law, etc., and gender diversity. Candidates will be considered regardless of their sexual preference, nationality, ethnicity, race or religious faith as diversity and inclusion can contribute to a broad range of perspectives that are crucial to the company's business operations.

In 2022, the Board of Directors consisted of 15 directors as appropriate to the scale of the company's business operations. The Board had one executive director and 13 non-executive directors. Eight directors qualified as independent directors. Together, the directors contributed to the effectiveness of the Board in the discharge of its duties. Each director had clearly defined role, duties, and responsibilities in accordance with the law, rules, company's regulations, shareholders' resolutions, and good corporate governance principles. The Chairperson of the Board provided oversight to ensure the Board's effectiveness and independence. Details are shown in the report on Important Information about the "Board of Directors."

2. Independent directors

The Company has determined that the number of independent directors shall be not less than one-third of the total number of members of the Board of Directors. The qualifications of the independent director conform with Notification of the Capital Market Supervisory Board No. Tor Jor. 39/2559 and are stricter than minimum requirements imposed by Notification of the Capital Market Supervisory Board regarding shareholding limit in the company at not more than 0.5 per cent. The definition of the independent director has been disclosed in the Good Corporate Governance Handbook and the company's website. Independent directors may speak their minds during Board meetings and have adequate access to the company's financial data and business information to enable them to express their views freely in the best interest of stakeholders and prevent possible conflicts of interest involving the company, the management, executive directors or major shareholders.

3. Director Selection and Appointment

- **Appointment of director to vacant position due to retirement by rotation**

The Company encourages shareholders to propose a list of candidates who have the qualifications prescribed by the law and as specified by the company for the director selection process. An announcement will be made on the company's website prior to the date of the shareholders' meeting. The Nomination and Remuneration Committee shall select and nominate a list of candidates that meet the qualifications as prescribed by the law and the criteria, for submission to the Board of Directors for approval before the list of nominees go before the annual general shareholders' meeting for consideration and election. The appointment of each director must be approved by more than half of the total votes of the shareholders attending.

- **Appointment of director to vacant position for any reason other than retirement by rotation**

The Nomination and Remuneration Committee shall select and nominate a candidate who has qualifications as prescribed by the law and criteria and put the nominee

before the Board of Directors which shall appoint the nominee to fill the vacant director post. The new director shall serve the remainder of the predecessor's term.

- **Appointment of subcommittees**

The Board of Directors has appointed four standing subcommittees: the Audit Committee, Nomination and Remuneration Committee, Corporate Governance Committee, and Risk Management Committee. Each subcommittee consists of members who have suitable expertise for the respective functional requirements according to the company's regulations. Members of these subcommittees are tasked with screening and scrutinizing work assignments from the Board. The qualifications, term of office and scope of responsibilities of subcommittee members shall be in accordance with the charter of their respective subcommittee. All subcommittees report the results of their work assignments or progress status to the Board of Directors' meetings on a regular basis, and annually disclose in form 56-1 One Report. The names of subcommittee members, their scope of responsibilities, their meeting attendance are shown in the report on Important Information. That of the Board of Directors can be found on page 257-258 and "Subcommittees" can be found on page 229-235.

4. Compensation for Directors and Executives

- **Directors' Compensation**

The Board of Directors has established a policy on directors' compensation that is fair and appropriate according to the principles of good corporate governance. The Nomination and Remuneration Committee is responsible for determining compensation guidelines and reviews against companies listed on the SET in similar industries and businesses of comparable size. Directors assigned to serve as members of Sub-Committees receive additional remuneration that corresponds to increased responsibilities. Directors' compensation must be approved by the shareholders' meeting. Directors' compensation consists of two components: monthly cash retainer and

meeting allowance. According to a 2022 comparative survey of directors' compensation of leading companies, the directors' compensation structure, criteria and rate offered to the company's directors remained competitive and appropriate. The Board, therefore, proposed the same directors' compensation package as that of 2021, which was approved at the 2022 general shareholders' meeting (this is the company's rate that has been in use since 2006 and has never been altered in any way). The directors' compensation was disclosed in the section "Directors' Compensation 2022" on pages 260

- **Compensation of the President and Chief Executive Officer**

The Nomination and Remuneration Committee is responsible for considering the compensation of the President & CEO based on well-defined Key Performance Indicators (KPIs) every year. These indicators included business aspects, Corporate KPIs and balance scorecard, as well as Leadership & Sustainability factors. The performance of the President & CEO will be reviewed thoroughly with clear criteria, transparency and fairness. As a result, the annual compensation increase of the President & CEO will be proposed and approved by the board of directors on pages 240.

5. Board of Directors Meetings

The Company schedules the entire year of the Board of Directors' meetings as well as determines clearly defined regular agenda for each of the scheduled meeting to be held on the third Tuesday of the month. Additional special meetings may be held as necessary and appropriate. The Board of Directors shall receive a meeting invitation, draft meeting minutes and agenda and background materials at least 7 days prior to the meeting date. The company shall deliver such information through the secure Board Portal system to all directors for convenience and speed as well as to reduce paper use. In 2022, the Board of Directors held a total of 15 meetings. Details appear in the report "Meetings of the Board of Directors and Sub-Committees" on page 257.

6. Development of directors and executive officers

The Board of Directors recognizes the importance of attending relevant seminars and training courses as part of directors' continuing education and professional development to improve the Board effectiveness. This professional development program also helps prepare executives for job rotation and executive succession planning. Senior executives also undergo performance assessment to get ready to take on new roles and responsibilities. Details appear in the report on "Development of Directors and Executives" on page 253-254.

7. Board Performance Assessment

The Board of Directors requires an annual performance assessment to be conducted for the Board to review its performance, problems, and obstacles during the year.

In 2022, the company engaged PricewaterhouseCoopers ABAS Ltd., (PwC) who possesses expertise in national and international corporate governance, as an independent external advisor to evaluate our board of directors' adherence to international standards within Thailand and abroad. PricewaterhouseCoopers ABAS Ltd. created evaluation forms according to national and international organizations' corporate governance frameworks and principles. To illustrate, the evaluations were developed based on the SET 2017 corporate governance principles, Dow Jones Sustainability Index, and the Corporate Governance Report of Thai Listed Companies (CGR) created by the Thai Institute of Directors (IOD), ASEAN CG Scorecard created by Thai Institute of Directors, the PwC board evaluation framework, the State Enterprise Assessment Model (SEAM) created by the State Enterprise Policy Office and the Environmental, Social and Governance principles created by the SET. The evaluations were completed by self-evaluation and interview.

1. Self-evaluation

- (1) The board's evaluation form
- (2) Each of the board members' evaluation form (Each member evaluates themselves.)
- (3) The board members' evaluation form (Each member evaluates others.)
- (4) Sub-committee's evaluation form

2. Interview

- (1) Interview of the chairman of the board
- (2) Interview of the chairmen of the 4 sub-committees

Results and recommendations based on such assessment were presented to the Board of Directors as input for determining ways to improve the Board effectiveness, and the overall assessment results were disclosed in Form 56-1 One Report. Details appear in the report "Nomination, Development and Assessment of the Performance of the Board of Directors" on page 254-256.

8. Operational Oversight of IRPC and Subsidiaries in the IRPC Group

The Company has established the IRPC Group's governance policy and management approach. The IRPC Group Way of Conduct handbook was created to provide a framework of guidelines, practices and operational processes covering all the dimensions of the company and its subsidiaries to ensure consistency and unity of purpose in supervising subsidiaries to implement and achieve common standards across the IRPC Group. Details as show in the report, "Supervision of Subsidiaries and Associated Companies" on page 261.

9. Outside Interests Policy

The Board of Directors approved rules on outside interests, which apply to the President, CEO, and employees of the company. In addition to clarity and compliance with the principles of good corporate governance, international standards, and conformity to IRPC's nature of business and the practices of its majority shareholders. The rules are as follows:

1. In the event that the President and CEO has been assigned a position external to the company's affairs by royal command or lawful order of the Cabinet, the appointee shall inform the Board for acknowledge as soon as the command or order was received, as the case may be.

2. In the event that the president and CEO have been requested to serve as a director, committee member, specialist, expert, consultant, or any other position external to the company's affairs by a government agency, state enterprise, public agency, independent organization, or publicly funded education institutions, the President and CEO shall seek prior approval from the Board.

3. In the event that the President and CEO, or executive officer from the executive vice president level up, has been requested to serve as a director, member of committee, workgroup, specialist, expert, consultant, or any other position at a company or juristic entity external to the company's affairs other than the provision under Rule 2, he or she shall seek prior approval from the Board first. For executive and employee from the manager level down, permission must be obtained from the President and CEO instead.

4. For all executive officers and employees whose outside interests fall under the provision of Rules 1 or 2, they must inform or seek permission from the President and CEO before accepting the offer, as the case may be.

5. The appointment of a director to serve in a subsidiary or joint venture, according to the shareholding ratio or agreement made between shareholders, shall be at the discretion of the Board of Directors.

Policies and Practices Relating to Shareholders and Stakeholders

1. Rights and Equal Treatment of Shareholders

The Company respects, upholds and promotes the exercise of shareholders' rights, from the rights to attend the general shareholders' meetings, express opinion freely, vote, propose agendas in advance of the meeting date, appoint or dismiss directors, approve or reject director or auditor's remunerations, approve or reject profit-sharing/dividends proposal, and right of access to adequate, timely and complete information through a variety of channels to enable shareholders time to make informed decisions. In 2022, the company promoted shareholder rights through the following activities:

1.1 Annual General Meeting (AGM)

- In 2022, on April 5, 2022 the company held the 2022 Annual General Meeting of Shareholders via electronic means (e-Meeting) at the Bangkok Convention Center, 1695 Paholyothin Road, Chatuchak, Chatuchak, Bangkok (5th floor, Central Plaza Ladprao), strictly in compliance with preventive measures against COVID-19 in accordance with the order of the Center for COVID-19 Situation Administration (CCSA) and the Bangkok Metropolitan Administration, also ensuring full observance of other relevant laws and regulations.
- In addition, the company, for the tenth consecutive year, applied guidelines on Shareholders' Meeting Quality Assessment Program of the Thai Investors Association, Association of Listed Companies, and the Securities and Exchange Commission, focusing on the Thailand Business Council for Sustainable Development Green Meeting (TBCSD Green Meetings). The main objective is to promote efficient use of resources, energy conservation and reduce impact on the environment. In addition, the meeting was a "Zero Carbon Meeting" through activities to offset carbon and greenhouse gas emissions to achieve Carbon Neutral status in accordance with the guidelines of Thailand Greenhouse Gas Management Organization (TGO).
- In 2022, the company received Excellent rating, scoring full mark of 100 in the assessment against the AGM Checklist of the Thai Investors Association. This reflects the company's determination to organize meetings that satisfy the highest standards of sustainability and good corporate governance. In addition, the company values highly the suggestions made by attending shareholders which are considered for further improvements to meet their requirements.

1.2 Preparation before AGM

- The Company requested the Board of Directors to consider holding 2022 AGM notice at the 2022 Board meeting. The Board agreed and issued AGM notice on February 8, 2022. On the same day, the Board's resolutions on 2022 AGM notice were published in the Stock Exchange of Thailand's information disclosure system (SET Link), along with the announcement of Record Date on February 23, 2022.
- Communicating additional agenda items and director candidates. The company allowed minority investors, individual investors, and those holding less than 4% of the company's voting shares to propose agenda items and/or director candidates for the 2022 AGM, starting from September 3, 2021 to December 31, 2021. The relevant criteria for acceptance was published transparently on the company website, www.irpc.co.th, along with a notice to shareholders sent out via SET Link and in accordance with IOD good governance practices, which mandate that Thai registered companies should accept director nominations / AGM proposals within 90 days of the end of the corporate fiscal year.
- The Company mailed the invitation to the 2022 annual general meeting of the shareholders. The opinions of the board of directors were included in each agenda. There was no approval of the minutes of the 2021 annual general meeting of the shareholders on the agenda. This was because the company published the minutes on www.irpc.co.th since April 12, 2021 and mailed it to every shareholder to make comments or corrections before June 30, 2021. There were no corrections of the minutes, so the minutes was approved.
- The Company sent out AGM invitation to shareholders in Thai and English, along with other relevant meeting documents by mail. The invitation letters were delivered to all shareholders at least 30 days in advance of the meeting date as required (the invitations were sent on March 14, 2022) and published on the company's website on March 4, 2022. In addition, the company sent the meeting invitation with barcode for registration and a QR Code for downloading the digital version of Annual Report 2022/Form 56-1 One Report.
- The Company published the public announcement of AGM 2022 in daily newspapers (both Thai and English) for 3 consecutive days (March 23-25, 2022) prior to the meeting date as a reminder to all shareholders.
- To facilitate the registration of institutional investors, the company sent out proxy forms to all institutional investors before the AGM meeting date in case the shareholders were unable to attend the meeting in person and wished to appoint a proxy to attend and vote on their behalf.

1.3 On the Meeting Day

Due to the COVID-19 situation and IRPC's awareness of and concerns of health and safety of shareholders and stakeholders, IRPC held an online meeting (e-Meeting) of the 2022 Annual General Meeting of Shareholders on April 5, 2022 in compliance with Emergency Decree on Electronic Meetings, B.E. 2563 (2020) and other related guidelines. This electronics means is also convenient and safe to prevent the risk of spreading the Covid-19 as well as abide by social distancing measures.

The company also determined it would be in the interest of shareholders to limit the AGM to 2 hours. The company committed to ensuring shareholders would be able to exercise their rights to question the company by doing its best to address shareholder questions during the meeting time and posted answers to complex questions on the company website, www.irpc.co.th.

The secretary informed the shareholders of the protocols of the meeting, voting, counting, and asking questions. The protocols are aligned with corporate governance principles.

- **The Company allocated sufficient number of welcoming and registration staff.** The AGM registration platform opened on March 25, 2022 and registration closed on April 5, 2022, the date of the AGM. Meeting invitations were communicated digitally in advance of the AGM, along with INVENTECH Connect, an instruction of how to attend an AEM e-meeting.
- **Voting Right** The company only issues one class of shares, with one share bearing the right to one vote. All shareholders hold votes equal to their number of shares owned. Proxies can only be allowed one vote per share, with the exception of custodians who can split their votes according to applicable law.
- **Voting** The company uses an electronic voting system for vote collection and counting to conduct the vote efficiently and with integrity. The voting platform adheres to the standards of the ETDA.
- **Proxies** The AGM will be conducted electronically for shareholders who are unable to attend in person. Shareholders may appoint a proxy or allow an independent director to act in that capacity. The company will provide the proxy with the meeting rules,

voting regulations, and ballots digitally. Shareholders who choose independent company directors to act as proxies, the company will provide such information to them in either hard or soft copy, along with the meeting invitation. Proxies will be allowed to attend the AGM and vote on behalf of shareholders who appointed them. To appoint the company as proxy, shareholders can complete the proxy form and send it in with the AGM invitation. Also, shareholders can download proxy forms from the company's website.

- If shareholder wish, they may assign the independent directors, who had no beneficial interest as of the AGM of 2022 to act as proxies in their behalf. They can assign their votes to either of 4 independent directors, being Mr. Anusorn Sangnimnuan, Mr. Somnuk Bomrungsalee, Mr. Jumpol Sumpaopol, and Mr. Chaiyaporn Puprasert. Registered shareholders can do so by sending in their AGM invitation and share registration information. Additionally, the company will attach the resume and profiles of those who have been nominated to board positions, defined as being independent directors and shareholder resolutions.
- In case of Proxies, the company provide stamp duty for the convenience of our shareholders and in compliance with law (free of charge)..
- Regarding the beneficial interest of shareholders, the company will allow shareholders ask questions of management relevant to the meeting's agenda items in advance of the AGM via cg@irpc.co.th.
- **Questions and Comments** Shareholders can ask questions or share comments/concerns during the AGM via typing in the Q&A box or by audiovisual means. Questions or comments received in English will be answered via English translation to allow all shareholders to understand what is being communicated.
- In 2022, 15 out of 15 directors were present, accounting for 100 per cent Board attendance). The Chairman of the Board acted as the chairman of the AGM and was joined at the shareholders' meeting by chairpersons of all subcommittees, subcommittee members, the President and CEO as well as executive vice presidents and assistant managing directors and members of the management

team were present at the front of the stage to provide clarification and background information and field questions from shareholders.

- An auditor from Deloitte Touche Tohmatsu Jaiyos audit firm (Mr. Mongkol Somphol), together with legal advisors (Mr. Manit Suthaporn and Ms. Pratumporn Somboonpoonpol of Weerawong, Chinnavat & Partners Ltd.), were on hand for legal consultation. And a legal advisor from Weerawong, Chinnavat & Partners Ltd. (Ms. Onnicha Yommana) is invited to verify vote count at the AGM to ensure transparency.
- The AGM 2022 was attended by a total of 552 shareholders, with a combined 11,916,761,563 shares, representing 58.3171 per cent of the total issued shares which exceeded one-third of the number of shares issued.
- Before beginning the meeting, the company secretary will state process by which the meeting will be conducted, the voting procedures, and how questions may be asked to all shareholders. This meeting was conducted electronically using Cisco WebEx and made use of electronic voting. Both systems meet Royal standards and related regulations for electronic AGM set forth in 2022.
- Throughout the meeting, the chairperson of the Board of Directors should allow an equal opportunity for all shareholders to ask questions of management during Q&A. Also, the chairperson can share their views as well. Overall, the chairperson is charged with allocating the appropriate amount of time to shareholder Q&A and present members of management to respond to shareholders to address the concerns raised. Also all questions and answers should be recorded, as well as any opinions shared, in the meeting report. This allows shareholders not able to be present to know what happened during the AGM.
- On the agenda for director appointment, IRPC allowed shareholders to vote to appoint directors individually
- In the consideration of each meeting agenda, the company has prepared presented information in the form of Slide Presentation or visual video to provide precise and easy to understand presentation including voting result on each meeting agenda on presentation screen. Moreover, along the meeting

session, shareholders have opportunity to raise questions and add comments, on the other hand, the Board of Directors and executives present information and answer shareholders' questions straight to the point and completely.

- The chairman strictly led the meeting through all agenda items and in the order indicated in the invitation letter. No impromptu items were allowed.

Handling of Conflicts of Interest at Meetings

- During the shareholders' meeting, if any director has vested interest in a particular agenda item, he or she must inform the meeting of a potential conflict of interest and leave the meeting. Consequently, the director in question cannot vote on the said agenda item.

Post-AGM Procedures and Disclosure of Shareholders' Meeting Resolutions

- The quality of meeting minutes is of utmost importance to IRPC. The company requires that minutes be thoroughly recorded in full detail, covering names of directors and executive officers attending, matters discussed in each agenda item, voting process, vote-display method, questions from shareholders, and answers provided by the company's directors or executives, along with AGM resolutions and voting results, complete with breakdown of number of votes Agree, Disagree, or Abstain on each agenda item. All these procedures must be in line with the company's Good Corporate Governance Principles and the law.
- As soon as the meeting concluded, IRPC published the AGM 2022 resolution of each agenda item in Thai and English on its website and via the SET Link on the same day (April 5, 2022). Copies of the minutes of AGM 2021 were completed within 14 days (on April 19, 2022) after the meeting and delivered to all shareholders by post. Any shareholders who seek to amend or dispute the minutes content, if any, were given until June 30, 2022 to notify the company's secretary to take corrective actions. Shareholders with no objections would otherwise be considered as certifying the minutes of the AGM.

2. Stakeholders' roles and Business-Driven Sustainability

IRPC upholds the fundamental rights of all shareholders, be they major shareholders, minority shareholders institutional investors or foreign shareholders, and ensure fair, equitable and non-discriminatory treatment with equal treatment, fairness, and non-discriminatory treatment in the following matters:

2.1 Stakeholders' roles

IRPC strives for excellence as an effective business operator with management prowess and good corporate governance oversight, to create benefits for shareholders, with due regard to all stakeholders. The company also insists on fairness in its business conduct as well as transparency and accountability. All of these are enshrined in the Corporate Governance Policy and Anti-Corruption Policy observed by the IRPC Board of Directors, the management and employees, inspiring confidence among its stakeholders on the path towards sustainable growth.



Guidelines for Treatment of Stakeholder Groups

- **Shareholder/Investor and Analyst**

IRPC respects the fundamental rights of shareholders and treats all shareholders with equality with the aim to create best value for the shareholders, who are entitled to the rights to attend the Annual General Meeting (AGM), to vote, propose the agenda items, and nominate director candidates to sit on the company's Board of Directors. The company also organizes company visits by shareholders

and welcome their opinions and suggestions. Available communication channels include the company's website: www.irpc.co.th, e-mail: ir@irpc.co.th, and cg@irpc.co.th.

IRPC also pays attention to institutional investors, retail investors and analysts by holding quarterly press conferences to discuss its operating results. The company organized the Opportunity Day in cooperation with the SET to provide investors access to corporate information as well as communication channels. Details are shown in Information Disclosure and Transparency on page 211-212.

- **Customer**

IRPC takes upon itself to conduct its business with utmost integrity, transparency, and dedication to deliver products with quality standards that meet or exceed customer expectations. We are at the ready to provide valuable advice, introduce innovations to develop new products that satisfy internationally accepted standards. The company also emphasizes information technology system development to enable efficient and quick access to various database systems, with customer support that provides advice and helps resolve technical problems as well as builds good customer relationships. All the customer-facing operations are interactive, with channels of communication to receive customer feedback, such as customer satisfaction questionnaire, that helps the company serve them better.

Furthermore, IRPC safeguards client personal data by developing Data Lost Protection (DLP) system and Privacy Notice including setting policies and working group to determine measure to manage and protect personal data of customers in accordance with Personal Data Protection Act (PDPA).

In 2022, IRPC implemented following customer-related activities:

- Arranged an event of “POLIMAXX: Grow to Greater Make Greater Things Together” to rebrand “POLIMAXX”. This will increase customers’ and consumers’ trust by manufacturing goods with distinctive and unique qualities that also satisfy the requirement of ideal lifestyle and environmentally friendly.
- Joined “The World’s No.1 Trade Fair for Plastics and Rubber” to show readiness to expand IRPC’s customer base around the world.
- To promote best business operations to customers, IRPC invited customers to PTT Group CG day/IRPC CG DAY/IRPC Cubic Academy Season 8, etc.

- **Supplier, Competitor and Creditor**

IRPC strictly adheres to the principles of procurement with transparency and fairness. The company’s business relationships with its suppliers are based on mutual concern for social and environmental wellbeing of communities and the need to mitigate impacts, in accordance with good corporate governance principles. IRPC maintains close

communication with its suppliers and collaborates with them to establish good practices, including campaign against offering or accepting bribery and to encourage them to join Collective Action Against Corruption (CAC) for SMEs, advocating human rights policy and encouraging key suppliers to participate in corporate governance promoting activities, like PTT Group CG Day, IRPC CG Day, and IRPC Cubic Academy Season 8, etc.

Supplier: IRPC and its subsidiaries underscore equal treatment and ethical conduct in mutually beneficial relationships with suppliers in strict compliance with the law and agreed-upon rules to move towards building a lasting partnership.

In 2022, IRPC applied digital technology for sustainable procurement management as part of the main strategies to continually develop the procurement system and its processes to meet the requirements of IRPC units in its procurement and interaction with external suppliers by improving efficiency and streamlining the processes. Additionally, IRPC implemented IRPC Procurement consisting of a detailed manual of procurement regulations/ Purchasing Requirements/Manual of Procurement and Supplier Procurement and IRPC Procurement Chatbot acting as call center, etc.

In addition, IRPC held activities to promote partnership as follows:

- Conservative seminar to promote community volunteering by visiting Sea Turtle Conservation Center, Royal Thai Navy, Sattahip District, Chonburi and volunteering to release the turtles into the sea with partners.
- Participate in team Building activities with companies in PTT group to fortify networks and improve the efficiency of the procurement procedures to be strong and continuously developed in the same direction. This will present an opportunity to source quality products and services at reasonable prices.

Competitor: IRPC’s treatment of its competitors is in line with the international framework of free competition and in compliance with laws governing trade competition. The company treats competitors fairly and never seeks a competitor’s trade secrets through dishonest or improper means. It also never attempts to destroy a competitor’s reputation through malicious accusations or attacks. Moreover, IRPC never agrees with a competitor or any person to circumvent or limit free competition.

Creditor: IRPC strictly complies with all obligations it has with accounts payable and financial institutions. The company has never attempted to conceal facts or information that ought to be in public knowledge in any manner that could cause damage to its creditors. IRPC has implemented many policies and guidelines that govern matters of creditors—especially the terms of guarantee, capital management, and defaults—to prevent payment failures and breaches of contract. Nonetheless, in the event that the company learns of its inability to fulfill any obligation, it will always notify its creditor without delay and work with the creditor to find a suitable solution based on reasonableness. The company is committed to maintaining lasting relationships with all creditors.

• Employee

Employees are a major contributing factor to the IRPC's success. With this in mind, the company is fully committed to creating a human resource management system based on fair performance assessment. Employees can expect to have the opportunity to grow along their career paths through training programs to broaden their knowledge and capabilities. The company seeks to promote safe work environment that meet the high internationally accepted standards as well as positive corporate culture and work atmosphere. IRPC determines reasonable and fair remuneration and welfare benefits to retain quality employees in the long term. The company also respects employees' rights and privacy, promotes workplace safety, health and hygiene, and provide adequate protective equipment. The company has implemented a wide range of human resource management activities, such as:

- IRPC conducts employee feedback survey once a year. Results from such survey are assessed to form the basis of company-wide human resource management planning with a view to continually improve employee engagement. Employee engagement is one of the management's performance indicators.
- IRPC established Performance Management System (PMS), using KPIs to ensure fairness and explainability. The company established a salary structure comparable to companies in the same industry in order to retain qualified personnel. Criteria for promotion of employees are based on fair assessment of their performance. IRPC also developed detailed job description specifying knowledge and skills required for each position for use to design training programs to help employees meet the qualifications required by their positions.
- IRPC set human resource management approach to Upskill & Reskill through the "IRPC Brighter Bee online learning system".

- The company established an Individual Development Plan (IDP) between employees and their supervisors to create incentives for self-improvement and appropriate career path planning.
- IRPC implements both Top Down and Bottom Up communication approaches, with the meeting of Management Committee is held weekly while that of the vice-president level is held monthly. The company also organizes the "President's Town Hall" on a quarterly basis, or when there is a major event or when the company wants to communicate with employees on matters, such as operating results, policies, or a shift in direction of the company. Employees are given the opportunity to ask questions and exchange views.
- The company set a fair compensation policy that corresponds to the company's short- and long-term operating results. At the beginning of each year, guidelines for determining KPIs at the enterprise, departmental and individual levels will be agreed upon. Employees' performance will be assessed using KPIs and Competency, and the payment of Variable Bonuses for senior executives will be based on their performance.

In 2022, with COVID-19 continuing to spread unabated, IRPC set up its own COVID-19 surveillance and monitoring process in an effort to supervise and coordinate an effective response to the pandemic through regular communication with employees. The company also introduced a plan to prevent the spread of the virus among its employees, implementing measures, including keeping the company's Management Committee updated and taking precautions to better protect employees as follows:

- IRPC provided all employees with essential protective personal protective equipment, such as face masks, gel sanitizer as well as close monitoring of employees' health and measures to promote workplace hygiene.
- The company instructed employees to work from home on rotational basis so as to reduce congestion in the workplace, thus minimizing the chance of contracting COVID-19 while still being able to continue working under the contingency plan.
- IRPC took proactive preventive measures by offering employees Rapid Antigen Test Kits (ATK).

In addition, IRPC upholds human rights and fully supports its employees' freedom of association. Employees of IRPC and its subsidiaries have formed eight labor unions, including an executive union, to represent them in collective bargaining and to ensure fair treatment. The company encourage union activities and provide communication channel for unions to reach out to all employees via the Intranet.

- **Community, Society and Environment**

IRPC strictly follows its policy to conduct its business with a sense of responsibility towards wellbeing, people's quality of life. In parallel to its business operations, the company seeks to prevent and mitigate impacts to communities and the environment along with social projects aimed at driving sustainable growth. See details of corporate responsibility towards communities, society, and the environment in "Creating Shared Values". In addition, in 2022, IRPC also organized various activities in the area of community, society and environment as follows:

- Joined with The Stock Exchange of Thailand (SET) and The Royal Forest Department in Care the Wild "Plants & Protect" project. The environmental initiative aims to help reducing the global warming by expanding forest areas that will restore a balance to natural environment through cooperation with network partners both public and social-people sectors. This also demonstrates collective strength in dealing with climate change and environmental problem-solving by cultivating woods with a process for local communities/villagers to maintain the forest area.
- To encourage shareholders to participate in social, community and environmental responsibility activities and to represent the promotion of efficient use of resources and reducing the impact on the environment, IRPC has participated in supporting the following assistance:
 - Sponsor a donation of 100,000 baht to Pediatric Cardiac Surgery Foundation to help children who live in poverty and suffer from congenital heart disease.
 - Support a donation of 200,000 baht to the Department of National Parks, Wildlife and Plant Conservation to provide equipment needed to fight forest fires, reduce the burden of staff and also help alleviate the problem of wasting natural resources and climate change.

- **Public Sector**

IRPC regards the public sector as one of its key stakeholders. To avoid actions that could lead to non-compliance or impropriety, the company has disclosed the policy on its engagement with the public sector in the Good Corporate Governance Handbook and business ethics. The company is committed to being in full compliance by obtaining all required business licenses, permits and benefits correctly and completely, while avoiding actions that conflict with good corporate governance principles in

dealing with government officials or government bodies. IRPC adheres to its antibribery guidelines and will not offer bribes to public officials in exchange for convenience or business interests.

2. Business-Driven Sustainability

IRPC drives sustainability management strategies through Strategic Planning and Sustainability (CSSP) department to ensure that operations are in line with the sustainable business operation policy, International and PTT Group's Sustainability Strategic Framework. Management Committee as a committee has duties and responsibility to support and drive sustainability management as well as Corporate Governance Committee who drives and identifies Corporate Governance Policy and operation in sustainability management.

IRPC has announced Sustainability Management Policy as management framework and a guideline for sustainable management practices of the company, in alignment with internationally accepted standards, along with a strategy to develop operational practices that take into consideration Environmental, Social and Governance Enhancement. The policy is also in conformance with the United Nations Sustainable Development Goals with the goal aiming to balance business operations and maximize benefits for all group of stakeholders including fair and equitable treatment of stakeholders in accordance with the ethic of responsibility to each group of stakeholders in order to maintain balance and remains being sustainable organization.

Details of Business Sustainability are shown on page 100-113.

3. Disclosure and Transparency

3.1 Disclosure

IRPC endeavors to disclose adequate, reliable, and timely its information in accordance with the Notification on information disclosure guidelines for listed companies of the Stock Exchange of Thailand. Material information that may have an impact on investment shall be disclosed via the SET Portal before being revealed to any specific person or to the public through other means. The company will not provide trade secrets, inaccurate information, or estimates, projections, or promotional materials beyond the necessity of making investment decisions.

IRPC has established channels for information disclosure or sources of information through the company's website: www.irpc.co.th in the Investor Relations section, and via the SET Portal, offering all stakeholders equal access. In 2022, the company implemented information disclosure activities as follows:

- 1) The company submitted financial reports to the Securities and Exchange Commission (SEC) and the SET on time. The auditor expressed unqualified opinion on all entries.
- 2) The company disclosed information in the annual registration statement/annual report (form 56-1 One Report), including financial statements, good corporate governance policy and business ethics, corporate social responsibility policy, minutes of the shareholders' meeting, list of majority shareholders, material news filings with the SET, company news in the media, online news bulletin, among other things. Investors may learn more about IRPC via its website: www.irpc.co.th or contact the Investor Relations Department directly.

E-mail : ir@irpc.co.th
 Telephone : 0-2765-7380
 Fax : 0-2765-7379
- 3) The company's remuneration criteria for its directors and executive officers were clearly presented in the annual registration statement/the annual report (form 56-1 One Report).
- 4) The company also disclosed directors and executive officers' shareholding information as per the company's policy. Such information disclosure conformed to rules and procedures prescribed by the SEC Office and SET.
- 5) The SEC Office and SET never ordered the company to amend any of its financial statements.
- 6) The company's current auditor was appointed by shareholders at the 2022 Annual General Shareholders' Meeting. This certified public accountant was fully qualified and possessed none of the prohibitions under the SET rules. The audit fees and non-audit fees were presented to and approved by shareholders at the AGM.
- 7) The company's financial statements were certified in its entirety by the auditor with unqualified opinion.
- 8) Information about the company's directors and executive officers, including their names, current positions, education, experience, ownership of shares in the company, photos, directorship at other listed companies, and date of commencement in the current positions have been disclosed and published on the company's website.
- 9) The company published the annual registration statement/annual report 2022 (form 56-1 One Report), detailing its management approaches and economic, social, and environmental performance. Copies of the Corporate Sustainability Report were delivered to shareholders, along with the Annual Report, and were also available on the company's website.
- 10) IRPC also presented a Communication on Progress (COP) report to the UN Global Compact (UNGC) as the company has been a party to the global sustainability initiative since 2011. Since 2014 the company has submitted the highest reporting level known as GC Advanced. The report has been made available on the company's website. An electronic copy was submitted to UNGC via www.unglobalcompact.org.
- 11) The company communicated with stakeholders via print media, radio, television, and other public relations channels.

3.2 Disclosure to investor and the media

IRPC published annual strategic communication plan for information disclosure to each stakeholder groups, adhering to principles of good corporate governance principles with regard to disclosure of information.

In 2022, the company's management met on regular basis with shareholders, securities analysts, investors, and members of the media through various activities that are adapted to suit the current situation, to discuss the company's operating results. The meetings took place at forums, such as Analyst Meeting, Roadshows in Thailand and abroad. Other meetings with retail investors can be summarized as follows:

Summary of activities to disclose information to shareholders and investors in 2022

Investor Relations Activities in 2022	Number of times
Domestic Roadshows to meet investors	6
IRPC Electronic Conferencing (E-Meeting) Quarterly Analyst Conference Call	4
IRPC Quarterly Analyst Meeting	4
Company Visit (Appointment)	11
Opportunity Day Activity - In cooperation with the Stock Exchange of Thailand (Quarterly)	4

Overview of interactions with the Media in 2022

Activity	Number of times
1. Press conference/Interview	11
2. News release/ News photos	72
3. TV	30
4. Website (www.irpc.co.th)	57
5. Social Media (Facebook)	52,459 Page Followers

Business Ethics

IRPC establishes Code of Business Conduct, comprising principles and good practices, to provide guidelines for its business operations. This Code of Business Conduct is applicable to the Board of Directors, executive officers, and all employees. The Board and executive officers must lead by example, discharging their duties with honesty, integrity, fairness, transparency, and accountability so that a culture of good corporate governance may thrive and take roots.

Corporate Governance and Code of Business Conduct Handbook

The Company has published Corporate Governance and Code of Business Conduct Handbook with the approval of

the Board of Directors. The current handbook, in its third edition, contains the principles of corporate governance, code of business conduct and guidelines for the Board of Directors, executives, and employees, and code of conduct and guidelines on treatment of stakeholders as well as code of business conduct and guideline on business practices, respecting and compliance with laws, regulations, standards, including international human rights principles, political neutrality, anti-money laundering and counter terrorism financing, fair competition and anti-monopoly, safety and occupational health and environmental quality standards, internal control, internal audit and risk management, insider information, confidentiality of trade secrets, information for news media, opinions given to third parties, information disclosure, vested interests and conflicts of interest, giving and accepting gifts, money or other benefits, etc.

Copies of the Corporate Governance and Code of Business Conduct Handbook were delivered all directors, executives, and employees of IRPC and subsidiaries within IRPC Group. They must read and sign a form to “acknowledge and pledge to observe” the handbook in guiding principle of operation and to implement them consistently. Furthermore, the handbook was also published on the company’s website to make it accessible to all stakeholders and members of the general public.

The IRPC Corporate Governance and Code of Business Conduct Handbook is available at <https://www.irpc.co.th/corporate/>.

Communicating and promoting compliance with the Corporate Governance and Code of Business Conduct Handbook

This is to enhance knowledge, understanding and emphasizing the importance of corporate governance to employees at all levels. The company has organized awareness campaigns and educational activities, such as corporate governance workshops, new employees’ orientation in order to instill in them positive mindset and standard of behavior in accordance with the principles of transparency, fairness and accountability, PTT Group CG Day 2022, IRPC CG Day, IRPC CUBIC Academy Season 8, No Gift Policy campaign and Anti-Corruption, etc.

Significant developments in corporate governance policy, procedures and governance system in 2022

In 2022, the company implemented corporate governance activities to further develop, standardize and strengthen corporate governance system by reviewing policy, principles, and relevant procedures in accordance with the rules, notifications, and guidelines for good corporate governance of the SEC Office and SET on a regular basis as well as implementing the Corporate Governance Plan in 2022, approved by the Corporate Governance Committee, as follows:

Changes and Important Developments Relating to the Reviews of Corporate Governance Policy, Guidelines and Governance Systems

In 2022, the company made important policy changes in the corporate conduct and control systems to increase the effectiveness of management control measures and ensure such measures are in line with the CG Code.

1. We aim to achieve net zero emissions of greenhouse gases by 2060, in line with national goals to reach net zero emissions by 2065, to reach carbon neutrality by 2050, and reduce carbon dioxide emissions by 20% by 2030.
2. The company places importance on human resources management and staff readiness, so we have established core behavioral standards in line with the organizational standards of good, great, growth to support the operational strategy & goals of the company.
3. We use corporate policy to steer the IRPC group corporate response to grievances to ensure such are in line with international good governance standards.

Additionally, the Corporate Governance Committee considers important aspects of company operations and proposes board candidates and strategic plans for board approval.

1. Evaluates the work of the board of directors and the sub-committees for the period from 2021 to 2022.
2. Audits the good governance planning for 2022 and approves the good governance plans for 2023.
3. Audits staff performance on good governance measures during 2022 and approves staff related good governance measures & regulations for 2023.
4. Performs 2022 social responsibility audits with regard to the community and environment and approves the 2023 ESG planning.
5. Audits the management sustainability plans for 2022 and approves the same for 2023, while advancing company control standards in line with the CG Code.

Reviews of Corporate Governance Policy and Guidelines

IRPC promotes full compliance with good corporate governance guidelines to build confidence among all stakeholder groups. In 2021, the company followed up on the matter to ensure its corporate governance policy was translated into practice at IRPC and its subsidiaries as follows:

1. Examine, analyze, and assess the company's compliance with corporate governance principles, which are compared with domestic and international benchmarks, such as DJSI criteria, Corporate Governance Report of Thai Listed Companies (CGR), Thai Institute of Directors Association (IOD), AGM Checklist, Thai Private Sector Collective Action Against Corruption (CAC), to develop, improve and update the company's policies and best practices, etc.
2. Establish an E-Compliance digital library of laws and rules relevant to the company's business operations.
3. Prepare the annual report on the disclosure of conflicts of interest.

Creating Corporate Governance Mindset and Awareness in 2022

IRPC has taken steps to enhance awareness and understanding of good corporate governance, disseminate knowledge, principles, concepts and practices among the executives, employees, suppliers, customers, and personnel of its subsidiaries, to lay the groundwork for a shift towards sustainable development as follows:

Anti-Corruption Activities

- IRPC Oil Company Limited has received certificate of accreditation and membership of the Thai Private Sector Collective Action Against Corruption (CAC).
- Joined an activity on National Anti-Corruption Day 2022 organized by Anti-Corruption Organization of Thailand (ACT) under a concept of "Leader and Anti-Corruption".
- Joined "International Anti-Corruption Day 2022's on-line activity through Facebook Live of Office of The National Anti - Corruption Commission (ONACC) under concept "Zero Tolerance".

- IRPC as Change Agent together with business partners joined "CAC Change Agent Day 2022" to emphasize a standpoint of business operations align with Good Governance principles and be ready to demonstrate cooperation against all forms of corruption.
- Prepared the report of Conflict of Interest: COI and provided a portal to report via Intranet for the management and employees. This activity achieved 100 per cent conflicts of interest reporting for the eighth consecutive year.
- On 29 March 2022, organized a communication activity for PTT Group Way of Conduct 2022 to coordinators in charge of 21 policies in order to clarify an assessment procedure of "Apply & Explain" through PTT Group WoC Web Portal
- Being a guest speaker for IRPC Technological College in a project of "Training & Reviewing practices in Anti-Corruption Project (for executives)" to acknowledge a policy, guidelines of anti-corruption, risk assessment, risk control and an importance of having Whistleblowing system.

Human Rights Promotion Activities

- IRPC received the Human Rights Award 2023 from the Ministry of Justice Rights and Liberties Protection Department for the third consecutive year. IRPC is a large business organization determined to run business which respects human rights, promote social responsibility, and conserves the environment. IRPC's outstanding accomplishment of 2022 was combining innovative technology with local wisdom to create additional values to CSR projects.
- IRPC won the first runner up in the UN Women 2021 Thailand WEPs Awards. IRPC promoted gender equality via activities for the community at the IRPC Smart Farm. Also, IRPC participated in the "Inclusive Leadership Means Better Business" seminar organized by UN Women, Securities and Exchange Commission, and Kenan Foundation Asia. The seminar aimed to create understanding of gender equality promotion in the business sector.
- The Ministry of Justice Rights and Liberties Protection Department and United Nations Development Program had Sal Forest Co., Ltd. interview IRPC on readiness

to assess human rights. IRPC's employees attended a workshop which revealed survey results of readiness of Thai companies in assessing human rights.

- IRPC had ERM-Siam Co. Ltd. evaluate if IRPC's policy on human rights complies with the UN human rights due diligence policy.
- IRPC wrote a self-evaluation report based on the 2022 PTT Group Sustainability Management Framework. IRPC also reported on human rights promotion activities to the PTT Group. The PTT Group then evaluated IRPC's performance on promoting human rights using the same criteria as those of the PTT Group's.

Activities to Raise Corporate Governance Awareness

- IRPC and the PTT Group demonstrated how to manage corporate governance on the 2022 PTT Group CG Day under the theme of "TOGETHERVERSE: CG Power for Sustainability & Beyond". The objectives of the 2022 PTT Group CG Day were to promote corporate governance and encourage the employees of the PTT Group to adopt corporate governance principles in working with PTT Group coworkers and outsiders. Moreover, it aimed to get the employees ready for future changes and challenges so that the PTT Group can become a sustainable organization in which all stakeholders can trust.
- IRPC organized the IRPC CG DAY 2022 hybrid event under the theme of "CG with G3: Empowered by You". The event aimed to demonstrate determination to instill corporate culture and adjust to the fast-changing world. IRPC established the work principles which are aligned with corporate culture and expected behaviors of the employees. IRPC invested in creating good, smart, and brave employees who would put work principles into



practice. The goal is to ensure transparent, effective, fair management for all stakeholders. IRPC focuses on building competitiveness and enabling employees to quickly adjust to changing situations. IRPC organized the "Chat with CEO Kris" to give the employees an opportunity to discuss ideas on how to effectively run IRPC. IRPC also organized a talk on "How to be Good, Smart, and Brave". The guests were Danai Sriwatcharamethakul, also known as Coach Duan, representatives from Thailand women's national basketball team, and Khun Phrae-ry Phraiwan.

- IRPC organized "IRPC Cubic Academy Season 8: Cubic Next Talk" to create a community where people learn from each other, understand work ethics, and develop social responsibility. IRPC also expanded the talk to our business partners, clients, and stakeholders to promote sustainable development. Invited speakers shared their knowledge and experience in 6 talk series.
 - The talk titled "The World Crisis - And What to Do About It" enabled businesses to adapt themselves to survive in the fast-changing world. The talk was hosted by Mr. Wisit Limluecha, Vice-chairman of the TCC and President of Thai-Middle East Business Council and Mr. Chaichan Charoensuk, Chairman of the Thai National Shippers' Council.
 - The talk titled "Human Rights: Volunteering for a Better Community" showcased IRPC's activities which promote human rights, gender equality, and women's empowerment. The talk was moderated by Dr. Panadda Wongphudee, Actress, MC, and Founder of Goodness Foundation.
 - The talk titled "Fight against Corruption and Promote Transparency" discussed how to prevent corruption.



The talk was hosted by Mr. Poomwisan Kasemsuk, Acting Secretary-general of the Office of the Public Sector Anti-corruption Commission.

- The talk titled “Mental Health: Burnout Prevention and Treatment” educated IRPC’s employees on how to take care of their mental health and be more emotionally stable. The talk was hosted by Dr. Apisamai Srirangsan, Psychiatrist and Director of Bangkok Hospital Rehabilitation and Recovery Center.
- The talk titled “Net Zero Emissions” discussed ways to reduce global warming and achieve the UN sustainable development goal to reduce emissions of greenhouse gases. The talk was hosted by Mr. Jiravat Ratisoontorn, Deputy Secretary-General of the Office of Natural Resources and Environmental Policy and Planning.
- The talk titled “Innovation and Marketing of the Taobin Vending Machine” discussed marketing strategies of the innovative Taobin brand. The talk was hosted by Ms. Watanya Amatanon, Forth Vending Chief Product Officer. Besides public events, IRPC also organized activities for our employees.
- IRPC created an infographic for the employees to learn more about corporate governance. The aim of 2022 was to make the employees understand rules and regulations at work, which are aligned with corporate government. The employees were expected to follow the rules and develop strong work ethics.
- IRPC’s risk management division created a corporate sustainability assessment form for 63 executives, which account for 100% of the executives. IRPC’s performance on corporate governance scored at 96.14%.
- IRPC organized a workshop for incoming employees so that they learned more about the corporate governance policy.
- IRPC participated in “GCNT Forum: Accelerating Business Solutions to Tackle Climate & Biodiversity Challenges”, organized by GCNT and United Nation Thailand in 2022. The forum was presided over by Prime Minister General Prayuth Chan-o-cha. The forum gave businesses opportunities to network and develop measures to tackle global warming and biodiversity loss.
- IRPC participated in the anti-corruption workshop held by the Office of the National Anti-Corruption Commission.
- IRPC Technological College represented IRPC in the “Inclusive Leadership Means Better Business” seminar. The seminar was hosted by UN Women, Securities and Exchange Commission, and Kenan Foundation Asia. IRPC won second the runner-up in the UN Women 2022 Thailand WEPs Awards.
- IRPC CEOs were speakers in the “Experience Sharing: Promoting Human Rights in an Organization” in 2021 at the 2022 announcement of criteria for promoting human rights in an organization.
- IRPC participated in the Gender Fair, organized by the Ministry of Social Development and Human Security Department of Women’s Affairs and Family Development and WeEmpower Asia at the Bangkok Art & Culture Center. The fair aimed to reduce gender bias and promote gender equality.
- IRPC, a sub-committee member of GCNT, co-founded the Business and Human Rights Academy to educate business sectors on human rights. The academy also thrives to be a human rights learning center of the Asia-Pacific region.

Networking Activities

- IRPC is a member of Global Compact Network Thailand (GCNT) and IRPC supports and promotes plans for sustainability through the GCNT channels. IRPC produced a video clip titled “We Shift World Change” to publicize sustainability promoting activities at the IRPC Smart Fram.

Corporate Compliance

IRPC is committed to complying with laws and regulations related to business operations and operations of the company in a concrete way. In 2022, IRPC has supervised the operations that is further the plans approved by the Corporate Governance Committee in 2021 in order to create efficiency and effectiveness of operations as stakeholders' expectation as well as covering operational supervision into work patterns, processes, procedures, regulations by implementing technology as a tool for encouraging learning and further supervision of operations in line with relevant laws and regulations by own self. In order to prepare and adapt to various changes; for instance, a preparation of supporting the country re-opening after the recovery from Covid-19 pandemic, work from home & work from anywhere, and Online meetings and training, etc. Promoting participation in compliance with relevant laws and regulations in a concrete manner benefits IRPC in terms of trust and compliance that support participation in the compliance project to comply with the law from all sectors, especially from staff who operates in each work procedure in various processes.

In addition, to meet international standards, IRPC has supervised its operations in accordance with the laws and regulations according to international standards in a concrete manner. IRPC has continued to operate as the practice in accordance with international corporate governance standards; for instance, the criteria of OECD/UN and US Sentencing Guideline, as well as Sustainability Assessment and relevant laws. This addresses an organization has duty on supervising in accordance with the rules to support the assessment and able to enhance confidence among employees and stakeholders in legal compliance in all sectors.

In 2022, the company has identified goals, roadmap, and indicators in area of supervising the operation according to the rules to cover all subjects regarding the relevant rules in order to prepare for compliance with the incoming laws, and build confidence in the supervision of compliance with relevant regulations, which can be summarized as follows:

1. PDPA and E-Compliance

In 2022, IRPC became PDPA compliant and compiled laws relevant to running the business in an e-Compliance system. Executives can access and search for needed information. IRPC communicated with its employees about the e-Compliance system to ensure legal and internal policy compliance.

IRPC ensured employees were able to put the policies into practice. Data protection officers and data champions worked together to deliver projects including customer relationship management activities. Regarding activities where photos would be taken, data protection officers and data champions created a privacy notification board to inform participants of the PDPA policy. The participants could scan the QR Code at registration to contact the PDPA center. These were the measures IRPC established to help the participants while protecting their personal data.

2. Communication & Activity

In 2022, IRPC communicated with its employees about corporate governance by engaging employees quarterly to share their opinions on corporate governance. Moreover, IRPC ensured that management encouraged staff to strictly follow its rules and regulations. IRPC created a communication channel to reach everyone, especially the heads of each division including data champions and representatives from the environmental, labor, intellectual property, innovative, IT, marketing, and production divisions. IRPC gave the staff opportunities to voice their opinions and give feedback to corporate governance. The staff then executed the 2022 corporate governance plan to achieve the KPI and objectives of IRPC.

In July 2022, the Society of Corporate Compliance and Ethics' CEP Magazine interviewed IRPC on the factors contributing to the success of corporate governance and business ethics promotion. The magazine can be accessed at <https://www.corporatecompliance.org>.



Data Privacy Day

Annually on 28 January

An international event that occurs every year on 28 January. It is an international effort to create awareness about the importance of respecting privacy, safeguarding data, and enabling trust.



IRPC respects and awares of the importance of personal data protection of employee, customer, business partners, and stakeholders by establishing Personal Data Protection Policy, handbooks and guidelines including other personal data protection measures in accordance with the Personal Data Protection Act. This is to build confidence that personal data in every contact or transaction with IRPC will be appropriately protected as per laws and international standards. ”

Kris Imsang

President and Chief Executive Officer
IRPC Public Company Limited



The Corporate Compliance department organized a meeting of data champions to share experience on executing and maintaining PDPA compliance.

3. Governance, Risk, and Compliance (GRC)

IRPC executed GRC projects. In 2022, IRPC officially included the GRC in its management plan in two ways: mergers & acquisitions of new or existing businesses, and procurement its process. IRPC implements GRC principles to manage operations. However, the business world is changing and IRPC can improve by making the GRC more relevant to our business conditions. For example, IRPC is revising its policies and principles regarding mergers and acquisitions, risk management, and internal quality control. IRPC is determined to ensure that our management complies with the relevant standards and measures of today's society. IRPC would like to include GRC in other areas of management.

Corporate Governance Structure and Important Information about the Board of Directors, Sub-Committees and Executives

Shareholders

IRPC conducts business with integrity, taking into account the highest benefit of shareholders, considering sustainable growth and adequate continuous return. In the General Meeting of Shareholders, shareholders will appoint the Board, acknowledge the annual operation result of the Company and consider meeting agenda as stipulated by law, including approval of the financial statement.

Appointment

Board of Directors

The Board of Directors consists of 15 members. The duty is to oversee all corporate operations to ensure the compliance to policies, directions, and targets that will return maximum benefit to shareholders, taking into account the interest of all stakeholders with fairness, social responsibility adherence, under the moral and code of conduct to become the Good Corporate Citizen of the world.

The Board of Directors has envisioned IRPC's vision **"To Shape Material and Energy Solutions in Harmony with Life"** by formulating short-and long-term strategic plan to assure that the Company's growth will be in line with targeted direction.

Report

Sub-Committee



Audit Committee

is appointed by the Board and the Sub-Committee shall comprise of at least 3 independent directors, having duty to audit financial statement and to give advice on internal audit procedures. The Board shall have at least 1 member who has adequate knowledge and experience in auditing the accountability of the Company's financial statement.

Nomination and Remuneration Committee

is appointed by the Board and the Sub-Committee shall comprise of at least 3 members, at least 1 of whom shall be an independent director, having duty in selecting candidates for directorship, Sub - Committee, President and Chief Executive Officer, including to determine fair remuneration.



Independent Directors

is independent from major shareholders or group(s) of major shareholders and the Company executives. The director's duty is to express their opinions freely under the assigned tasks to protect benefit of all shareholders and stakeholders equally. As of the end of 2022, the Independent Directors consists of 8 members.



Chairman

The Board of Directors elects 1 member as a chairman, to support and promote the performance of the Board at the highest extend of the responsibility assigned, to oversee and monitor management results of the Board and Sub-Committees to ensure effectiveness as specified in corporate objectives.

Corporate Governance Committee

is appointed by the Board and the Sub - Committee shall comprise of at least 3 members, at least 1 of whom shall be independent director, having duty to propose practice guidelines, give advice on good corporate governance to the Board, to oversee the good corporate governance operation of the Company to ensure the efficiency.

Risk Management Committee

is appointed by the Board and the Sub-Committee shall comprise of at least 3 members, having duty to formulate risk management policy, risk management plan, and risk management procedures to cover the entire organization.

President and Chief Executive Officer

is appointed and supervised by the Board of Directors, having duty to manage Company's operation to ensure its compliance with objectives, policies, and strategies set forth by the Board as well as report the Company's performance result to the Board in a correct and transparent manner.

Company Secretary

President and Chief Executive Officer

is appointed by the Board of Directors.

Senior Executive Vice President

is appointed by the Board of Directors. The duty is to manage work under responsibility, policy, and target assigned by the President and Chief Executive Officer.

Management Committee

The duty is to manage and ensure the parallel direction of the whole operations, to consider important matters on business operation, and to screen the agenda as to propose to the Board for approval. The committee comprises of:

- President and Chief Executive Officer
- Senior Executive Vice President
- Executive Vice President

Company Secretary

is appointed by the Board of Directors. The duty is to perform secretarial tasks pursuant to the Securities and Stock Exchange Act B.E. 2551 and as stipulated by the Capital Market Supervisory Board as well as performing duties assigned by the Board.

Corporate Governance Structure

The management structure, or organizational structure, of IRPC Public company Limited comprises shareholders, the Board of Directors, and the management team led by the President and Chief Executive Officer. The Board is accountable to shareholders, while the senior management team is accountable to the Board. Efficient management and good corporate governance principles are integral to the design of the company's management structure, which upholds the relationships between the shareholders, the Board, and the management. This brings about the corporate competitiveness, long-term value for shareholders, with due consideration given to all stakeholders in an equitable, fair and socially responsible manner, along the pathway towards sustainable growth.

According to corporate governance best practice, a company's shareholders appoint the Board of Directors to provide corporate governance oversight on their behalf. The Board articulates the company's vision, give business direction, formulates policies, sets goals, devises strategic plans and approves annual budgets for the management to implement and achieve the pre-determined goals. At the same time, the Board provides supervision to ensure operational transparency, efficiency, maximum benefits for shareholders and returns on their investment. The company makes profits, grows sustainably and employees are well taken care of and receive fair compensation.

Board of Directors

As of December 31, 2022, the board consisted of 15 directors, appropriate for the size, type and complexity of IRPC business. The current directors can be classified as follows:

- 14 non-executive directors (93 per cent of the Board of Directors)
- 1 executive director (President and Chief Executive Officer)

Of these 15 directors, eight qualify as independent directors (more than 50 per cent of the Board) and two are female directors (14 per cent of the entire Board). Professional profiles of the Board of Directors appear under "Board of Directors" on page 24-38.

Composition and Skills Matrix of the Board of Directors (as of December 31, 2022)



Male **12**

Female **2**

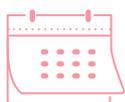


Non-Executive Director **14**

Executive Director **1**

Independent Director **8**

Year of Position



0-3 years **11**

4-6 years **2**

7-9 years **2**

Average Year of Position: 2.5



Engineering **8**



Energy Petroleum Petrochemical **13**

Business Management **15**



Environment **2**



Finance/Accounting/Auditing **4**



Economics **2**



Legal **4**



Human Resources **1**



Political Science and Social Development **2**



Corporate Governance **15**

Board of Directors as of December 31, 2022

No.	Name	Position		Date of appointment/ Term	
1.	Dr. Siri Jirapongphan	Independent Director	Chairman	April 5, 2022	1 st term
2.	Mr. Somnuk Bomrungsalee	Independent Director	Chairman of the Audit Committee	April 9, 2014 April 4, 2017 July 3, 2020	1 st term 2 nd term 3 rd term
3.	Dr. Anusorn Sangnimnuan	Independent Director	Chairman of the Risk Management Committee	August 27, 2016 April 4, 2017 July 3, 2020	1 st term 2 nd term 3 rd term
4.	Mr. Supot Laosuarpha	Director	Chairman of Corporate Governance Committee	March 31, 2021	1 st term
5.	Mr. Chansak Chuenchom	Director	Chairman of the Nomination and Remuneration Committee	October 1, 2021	1 st term
6.	Miss Siriwan Chierapong	Independent Director	Audit Committee	April 3, 2019 April 5, 2022	1 st term 2 nd term
7.	Mr. Jumpol Sumpaopo	Independent Director	Audit Committee	October 16, 2019 July 3, 2020	1 st term 2 nd term
8.	Dr. Ekniti Nitithanprapas	Director	Risk Management Committee	November 17, 2015 April 4, 2017 July 3, 2020	1 st term 2 nd term 3 rd term
9.	Miss Piangpanor Boonklam	Director	Risk Management Committee	January 20, 2021 March 31, 2021	1 st term 2 nd term
10.	Mr. Prasong Intaranongpai ⁽¹⁾	Director	Risk Management Committee	December 1, 2022	1 st term
11.	Asst. Prof. Dr. Chaiyaporn Pupasert	Independent Director	Corporate Governance Committee	March 31, 2021	1 st term
12.	General Aittipol Suwannarat	Independent Director	Corporate Governance Committee	April 5, 2022	1 st term
13.	Mr. Petai Mudtham ⁽²⁾	Director	Nomination and Remuneration Committee	January 19, 2022	1 st term
14.	Mr. Yordchatr Tasarika	Independent Director	Nomination and Remuneration Committee	April 5, 2022	1 st term
15.	Mr. Kris Imsang ⁽³⁾	Director/CEO and President	Risk Management Committee	October 1, 2021	1 st term

Notes: With the approval of the Annual General Meeting of Shareholders or the Board of Directors, new directors were appointed to replace those who had retired, or resigned in 2022 as follows:

⁽¹⁾ Mr. Prasong Intaranongpai was appointed director, member of the Risk Management Committee, effective on December 1, 2022

⁽²⁾ Mr. Petai Mudtham was appointed independent director and member of the Nomination and Remuneration Committee, effective on January 19, 2022, replacing Mr. Wattanapong Kurovat (, who completed his term on May 1, 2021).

⁽³⁾ Mr. Kris Imsang was appointed director and member of the Risk Management Committee, and CEO and President effective on October 1, 2022, replacing Mr. Chawalit Tippawanich, who resigned on September 30, 2022.

Authorized Directors

Four directors are authorized to act on behalf of the company pursuant to the company's certificate dated December 1, 2022: (1) Mr. Kris Imsang, (2) Ms. Piangpanor Boonklam, (3) Mr. Chansak Chuenchom, and (4) Mr. Prasong Intaranongpai. For the authorization to be legally binding, two of these four directors must co-sign and affix the IRPC seal.

Composition and Qualifications of the Board

1. The Board of Directors shall consist of five but not more than 15 directors.
2. Independent directors shall account for at least one-third of all directors, and there shall be at least three of them on the Board.
3. Director shall not be older than 70 years of age.
4. Director shall serve a 3-year term, after which he or she may be re-appointed in accordance with legal provisions, up to three consecutive terms, or a combined total of nine years. There shall be no exceptions.
5. The following limitations shall apply to Board members who hold directorships in state enterprises and/or other companies listed on the Stock Exchange of Thailand:
 - (1) Up to three state enterprises and/or juristic persons whose shares are held by a state enterprise.
 - (2) Holding directorships in no more than 3 companies listed on the Stock Exchange of Thailand. However, the combined total of directorships under (1) and (2) shall not exceed five.
6. Directors shall be experts in their respective fields. Their combined expertise shall satisfy the needs of IRPC. There shall be a minimum of three petroleum or petrochemical experts, one legal expert, and one accounting and finance expert. Their appointment shall comply with IRPC's nomination policy and criteria, which takes into account their education, management experience in relevant fields, and their professional accomplishment recognized by businesses of comparable size as that of IRPC.
7. Directors shall possess all the required qualifications but none of the prohibitions pursuant to the Public Limited company Act, the Securities and Exchange Act, the Capital Market Advisory Board's notifications, rules, and regulations of the Securities and Exchange Commission and the Stock Exchange of Thailand, IRPC's Articles of Association and corporate governance principles, and other relevant laws. They shall also be free from any questionable traits that render them unfit for supervising IRPC's business operations.
8. Directors shall possess all the required qualifications but none of the prohibitions pursuant to the Cabinet Resolution dated January 24, 2011, Re: Appointment of high-ranking government officials to serve as directors in state enterprises or juristic persons whose shares are held by state enterprises.
9. Directors shall possess positive character traits and personality conducive to corporate governance oversight that adds value to IRPC, such as professional integrity, ethical standard, independence, assertiveness, creativity, duty of care and duty of loyalty, dedication, and good social standing.
10. For former IRPC directors, their past performance, dedication, and valuable suggestions and recommendations that benefited the company shall also be considered.

Independent Director

In accordance with corporate governance principles adopted by IRPC, at least one-third of the Board of Directors shall be independent directors. Both independent directors and IRPC's directors shall serve a 3-year term. Independent director retiring by rotation may be reappointed by shareholders; however, they may only serve up to three consecutive terms, or a combined total of nine years. There shall be no exception.

Independent directors shall possess the expertise and qualifications of independence pursuant to notifications of the Capital Market Supervisory Board and as stipulated by the Board of Directors. According to company's policy, independent directors shall hold no more than 0.5 per cent of IRPC's issued shares; this requirement is stricter than the not more than one per cent shareholding prescribed by the Securities and Exchange Commission. The definition of an IRPC independent director has been disclosed in the Corporate Governance Handbook and on the company's website. Independent directors shall be free to speak their minds at Board meetings. They shall attend meetings regularly and have access to sufficient financial and business information, enabling them to

express their thoughts independently in the best interests of stakeholders. In so doing, they shall also prevent conflicts of interest between IRPC, the management, directors, or majority shareholders.

As of December 31, 2022, there are eight independent directors, which account for more than half of the Board (more than the legal requirement of at least one-third). IRPC's current independent directors are as follows:

1. Dr. Siri Jirapongphan, Independent director
2. Dr. Anusorn Sangnimnuan, Independent director
3. Mr. Somnuk Bomrungsalee, Independent director
4. Miss Siriwan Chierapong, Independent director
5. Mr. Jumpol Sumpaopol, Independent director
6. Asst. Prof. Dr. Chaiyaporn Puprasert, Independent director
7. General Aittipol Suwannarat, Independent director
8. Mr. Yordchatr Tasarika, Independent director

Independent Directors have duties and responsibilities as follows:

1. Familiarize themselves with their duties and responsibilities set forth in the Public Limited company Act B.E. 2535 and the Securities and Exchange Act B.E. 2535. They shall also observe best practices prescribed by the SET, SEC Office and other regulatory agencies.
2. Motivate and encourage fellow directors and the company's executive officers to perform their duties responsibly, carefully, and honestly in compliance with relevant laws, company's objectives and Articles of Association, Board and shareholders' resolutions as well as rules prescribed by regulatory agencies.
3. Encourage the company to adopt and implement corporate governance principles and best practices in earnest.
4. Ascertain that the company has appropriate and efficient internal control and risk management systems.
5. Supervise the implementation and disclosure of the company's policies on reporting of connected transactions and those involving related persons or stakeholders, along with disclosure of major events. Provide useful information to shareholders, including material changes that may affect the company's stock prices, in accordance with the conditions and timeline requirements of the Stock Exchange of Thailand.

6. Provide independent suggestions and opinions to the Board of Directors to the best interests of the company, minority shareholders and other stakeholders.
7. Perform any other tasks assigned by the Board of Directors, without compromising their ability to perform their duties with independence.
8. Independent directors shall meet among themselves at least once a year.

If an independent director position becomes vacant, IRPC shall nominate a qualified individual who fits the definition of an independent director to fill the position as well as maintain the minimum proportion of independent directors on the Board as required by the Capital Market Supervisory Board and corporate governance best practices. If another director on the Board later qualifies as an independent director, meeting the requirements, that director shall be eligible to serve as an independent director. In practice, however, IRPC will still ask the Nomination and Remuneration Committee to scrutinize such director's qualifications.

Appointment and Removal of Directors

The following is a summary of director appointment and removal procedures:

Appointment of Directors

1. Shareholders shall appoint directors. The Nomination and Remuneration Committee shall compile a list of potential candidates and present it to the board. Once approved, the list of candidates shall go before the annual general meeting of shareholders for election under the following criteria:
 - (1) To pass a resolution, a majority vote of the shareholders attending the meeting and casting their votes is required (Article No.34).
 - (2) Each shareholder has votes equal to the number of shares they hold. The one-share-one-vote rule applies (Article No.16).
 - (3) Shareholders may cast their votes for individual candidates or for the entire group of candidates slated in each election as shareholders deem appropriate. Each candidate, individual or as part of a slate of candidates, shall receive all the applicable votes of a shareholder under (1) as their votes are indivisible (Article No.16).

- (4) Candidates with the highest number of votes are to be appointed directors up to the number required at any given election. If candidates receive equal votes, which makes the number of successful candidates exceed that of directors to be appointed, the chairperson of the meeting shall exercise the casting vote (Article No.16).
2. The Board shall elect one of its members as the chairperson and may also select one or more of its members to serve as the vice-chairperson(s). Their duties shall be as prescribed in the company's Articles of Association and as assigned by the chairperson (Article No.22).
3. The Board shall appoint the President and Chief Executive Officer, in accordance with the established procedures and regulations. The President and CEO shall also serve as a director and secretary to Board (Article No.22).
4. If any director position becomes vacant for any reason other than retirement by rotation, the Board shall select a qualified person without any of the legal prohibitions as a director at its next meeting unless the remaining term of the outgoing director is less than two months. The new director shall only serve the remainder of the term of their predecessor. Such director must secure at least three-quarters of the votes of the remaining directors (Article No.20).
5. If the Board no longer has a quorum as a result of directors vacating their positions, the remaining directors may exercise the only Board's authority they have left to call a meeting of shareholders to elect new directors to fill the vacancies. Such director election shall be held within one month from the date the Board failed to muster a quorum. New directors elected to fill vacancies may serve out the remaining terms of their predecessors (Article No.21).
6. Newly appointed director shall attend a director orientation within three months from their respective date of appointment to familiarize themselves with necessary and pertinent information.

Removal of Directors

1. Directors shall vacate office after completing a term of three years; however, they may be re-elected (Article No.17).
2. In addition to vacating office by rotation, directors shall vacate office upon death, resignation, or disqualification, or having prohibited characteristics as

stipulated by law. They shall also be removed when the shareholders' meeting has passed a resolution to remove them, or they may be removed by a court order (Article No.18).

3. Director wishing to resign shall tender their resignation letter to the company. The resignation shall take effect on the date the resignation letter is delivered to the company (Article No.19).

Board's Duties and Responsibilities

The Board of Directors has a duty of care and a duty of loyalty. Accountable to the shareholders, the Board, oversees IRPC business operations and management's conformity with laws, shareholders meeting's resolution, the established policies, guidelines, and goals in the best interests of shareholders within the framework of code of ethics and for the benefit of all stakeholders. The following are Board's duties and responsibilities:

1. Articulate IRPC's vision, direction, and strategies in a way that supports sustainable growth while balancing economic, social, and environmental factors. Board members shall freely express their views. They shall value all information that might prove beneficial to the process of establishing business direction. The Board shall weigh potential financial and non-financial risks to ascertain the management can efficiently implement the defined vision, direction, and strategies to accomplish the goals.
2. Review and determine IRPC's principal policies, strategies, objectives, financial targets, and action plans at least once a year. It shall also regularly monitor reports on the implementation of action plans according to IRPC's direction and strategies.
3. Establish reliable accounting, financial reporting, and auditing systems. It shall also supervise assessment of internal control and internal audit, ensuring their efficiency and effectiveness.
4. Weigh potential major risk factors and determine a comprehensive framework of risk management. It shall ensure that an efficient risk management system or procedure are in place as well as identify business opportunities that may arise from these risks.
5. Establish a procedure to assess the effectiveness of the company's internal control system and provide a sufficient and efficient internal control system regularly.

6. Monitor all potential conflicts of interest and address such issue as soon as it occurs. It shall review all significant business transactions, focusing on maximizing benefits to shareholders and all stakeholders.
7. Set up an effective recruiting system with a transparent and equitable hiring procedure for key management roles.
8. Create an appropriate system or mechanism to determine fair compensation for IRPC's senior management, taking into accounts IRPC's operating results and business plans, creating short- and long-term incentives.
9. Approve the President and CEO's directorships in other companies. As for other senior executive officers' directorships in other companies shall be approved by the President and CEO. The appointment of IRPC executives to serve on the boards of subsidiaries or joint venture companies according to the proportion of its shareholding or a shareholders' agreement, falls within the Board's purview.
10. Determine the components and operational goals for the President and CEO's performance review, with due consideration to IRPC's business plans and the Balanced Scorecard management approach. Moreover, the Board shall regularly evaluate the performance of the President and CEO, whose compensation is linked to the performance review results, creating short- and long-term incentives.
11. Provide suitable communication channels with shareholders and stakeholders. It shall also assess IRPC's disclosures to ensure their accuracy, clarity, transparency, reliability, and conformity with standards.
12. Lead by example with regard to work ethic that aligns with IRPC's corporate governance guidelines and emphasize on business practices that promote sustainable well-being and social responsibility.
13. Advocate the full range of anti-graft and anti-corruption activities and promote sound corporate governance.
14. Set up plans for an assessment of the company's code of conduct and its good corporate governance policy at least once per year.
15. Appoint a qualified individual to serve as company secretary to assume duties and responsibilities set forth in the Securities and Exchange Act and other relevant laws.

Authority of the Board of Directors

1. Approve vision, strategies, short- and long-term business plans, and critical policies, such as corporate governance policy, risk management policy, trade competition policy, anti-corruption policy, connected transaction policy, disclosure policy, corporate information networks security policy (IT Security).
2. Approve financial procedures, investments, investment approach, financial targets, action plans, and annual budgets.
3. Approve procurements that exceed the President and CEO's authority.
4. Approve investment projects and important operations under as required by law, objectives framework, company's Articles of Association and shareholders' resolutions, and oversee the effective implementation of the established policies and work plans.
5. Approve transactions under the criteria set forth by the Securities and Exchange Act and relevant regulations, such as connected transactions or asset acquisition or disposal.
6. Approve to schedule the date for the Annual General Meeting of Shareholders and payments of interim dividends to shareholders and annual employees' salary adjustments and bonuses.
7. Approve the nomination of Sub-Committees, the replacement of a director who left during the year, and the establishment of the list of authorized directors who are able to sign on behalf of the company.
8. Approve determination of components and goals for CEO's performance review and compensation, and determination of annual increment and bonus for employees.
9. Approve the President and CEO serving as director in other organization.
10. Approve the appointment of executives as defined by the Securities and Exchange Commission or the Capital Market Supervisory Board.
11. Approve executive officers' directorships in IRPC subsidiaries or joint ventures under shareholders' agreements or the in proportion to shareholding.

Authority of Shareholders

Unless otherwise stipulated by law, the following shall require approval from shareholders in a resolution passed by at least three-quarters of all shareholders attending and eligible to vote:

1. Sale or transfer of the whole or essential parts of the business to other parties.
 2. Purchase or acquisition of a business of another (private) company.
 3. Making, amending, or terminating the whole or essential parts of a business lease agreement.
 4. Assigning another party to manage an IRPC business.
 5. Merging with another party to share losses or profits.
 6. Amending the Memorandum of Association or Articles of Association.
 7. Increase or decrease of IRPC's registered capital or the issuance of debentures; and
 8. Merger or dissolution of IRPC
4. Promote and support directors and shareholders to obtain adequate information, and express opinions independently.
 5. Promote the exercise of rights and equitable treatment of shareholders.
 6. Encourage directors to fulfill its duties and responsibilities to the best of its ability under the framework of good corporate governance, and to support the President and CEO.
 7. Supervise and monitor the performance of the Board and its committees to ensure that IRPC's objectives are accomplished; and
 8. Exercise the casting vote at Board meetings in the event of equality of votes.

Authority of the Chairman

IRPC stipulates that the Chairman and the President and CEO shall not be the same individual to ensure a clear separation of powers between policymaking and policy execution. This separation also enhances the leadership role of the Board of Directors in providing management oversight. The Chairperson's duties and responsibilities are as follows:

1. Call Board meetings, preside over the Board and shareholders' meetings.
2. Approve and determine items on the agenda together with the President and CEO.
3. Attend Board and shareholders' meetings, ensure their meetings are in compliance with IRPC's Articles of Association, encourage directors and shareholders to express their views freely based on the information duly provided.

Sub-Committees

In keeping with corporate governance principles, the Board of Directors has appointed four standing committees to oversee critical matters in their separate specialized fields as follows:

1. Audit Committee

The Audit Committee shall consist of at least three independent directors. Its composition, including duties and responsibilities, shall meet the requirements promulgated by the notifications of the Securities and Exchange Commission and the framework of the Capital Market Supervisory Board. Each of these directors shall possess the knowledge, expertise, and experience that the role demands. The Audit Committee shall have at least one director with sufficient knowledge and experience in accounting and finance to review financial statements to ascertain whether they are indeed reliable. Its current members are:



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| 1) Mr. Somnuk Bomrungsalee | (Independent Director) Chairman of the Audit Committee |
| 2) Miss Siriwan Chierapong | (Independent Director) member of the Audit Committee |
| 3) Mr. Jumpol Sumpaopol | (Independent Director) member of the Audit Committee |

All three directors on the Audit Committee possess the knowledge and experience required to review IRPC's financial statements.

- | | |
|--|--|
| 1) Mr. Somnuk Bomrungsalee | Chairman of the Audit Committee |
| Experience in reviewing financial statements | |
| - Nov. 2018 - Present | Audit Committee, Megachem (Thailand) Public company Limited |
| - Dec. 2017 - Present | Chairman of the Audit Committee, IRPC Public Company Limited |
| 2) Miss Siriwan Chierapong | Audit Committee |
| Experience in reviewing financial statements | |
| - Apr. 2019 - Present | Audit Committee, IRPC Public Company Limited |
| 3) Mr. Jumpol Sumpaopol | Audit Committee |
| Experience in reviewing financial statements | |
| - Oct. 2019 - Present | Audit Committee, IRPC Public Company Limited |

Office of Corporate Internal Audit and Secretary to the Audit Committee

Mr. Prasitsak Sawasduang, Manager of Office of Corporate Internal Audit and the secretary to the Audit Committee since January 1, 2021 - December 31, 2022 (Mr. Prasitsak Sawasduang's professional profile appears under Executive Profiles on page 49).

The Audit Committee has assigned Office of Corporate Internal Audit to audit the company's operations as well as the conduct of the management and employees to ensure they comply with all laws, related rules and regulations and the internal control system. The Office also handles both internal and external whistleblowing reports. The manager of Office of Corporate Internal Audit is independent and reports directly to the Audit Committee.

Term of Office

1. The Audit Committee members' term of office shall be equal to that of their directorship (Not more than 3 years).
2. Members who complete their terms of office may be re-appointed, subject to the Board's discretion, but they may serve no more than three consecutive terms, or a combined total of nine years. There shall be no exceptions.
3. In the event of a director vacating office, due to any reason, the company shall provide explanation to the Stock Exchange of Thailand.
4. If any committee position becomes vacant for any reason other than retirement by rotation, the Board shall appoint a new, qualified director to serve on the committee within three months from the date its members fell short of the required number.

Duties and Responsibilities

1. Review the accuracy and adequacy of IRPC's financial reports, ensuring that they meet accounting standards stipulated by law.
2. Examine IRPC's internal control, internal audit systems, and risk management process for suitability, sufficiency, and effectiveness.
3. Review and ensure IRPC is in compliance with the laws governing securities and stock exchange as well as other regulations relevant to the company's business.
4. Examine connected transactions and other transactions with possible conflicts of interest to ensure compliance with laws and regulations of the Stock Exchange of Thailand and to ensure the reasonableness of such transactions in the best interests of IRPC.
5. Select and nominate an independent auditor; determine the fee of auditor appointed to audit the company's financial statements as well as to remove auditor in the event of incompetence, negligence, or misconduct; and attend a meeting with the auditor in the absence of the senior management at least once a year.

6. Ascertain that the independent auditor and Internal Audit's scopes of responsibility and auditing plans are complementary to each other to reduce auditing redundancies.
7. Approve auditing plans and offer opinions on the budget and workforce of Office of Corporate Internal Audit.
8. Appoint, transfer, or dismiss the manager of Office of Corporate Internal Audit and ensure the independence of the Office of Corporate Internal Audit.
9. Oversee the efficiency and effectiveness of IT systems relevant to internal control and risk management.
10. Prepare the Report of the Audit Committee, which is a part of the annual report.
11. Access the information needed to review and investigate relevant persons within the scope of its duties and responsibilities of the Audit Committee under IRPC's Articles of Association.
12. Report to the Board of Directors upon detecting transaction or action that may give rise to material impact to IRPC's financial status or operating results so that appropriate measures can be taken to mitigate or resolve it. Events that require reporting include:
 - (1) Conflict of Interest.
 - (2) Corrupt practices, misconducts, or abnormalities or serious faults in the internal control system.
 - (3) Violations of securities and exchange laws, regulations of the Stock Exchange of Thailand or other rules relevant to IRPC's business.

If the Board or the management fails to act promptly without a valid reason, the Audit Committee shall promptly report the incident to the Securities and Exchange Commission, or the Stock Exchange of Thailand.

13. Perform other tasks assigned by the Board.

2. Nomination and Remuneration Committee

The Nomination and Remuneration Committee shall consist of at least three directors, at least one of whom shall be an independent director. Its current members are as follows:



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|----|-------------------------|---|
| 1) | Mr. Woothisarn Tanchai | Chairman of the Nomination and Remuneration Committee |
| 2) | Mr. Petai Mudtham | member of the Nomination and Remuneration Committee |
| 3) | Mr. Yordchatr Tasarika, | (Independent Director) member of the Nomination and Remuneration Committee, |

Ms. Arisara Suthasut, Executive Vice President, Office of Corporate Affairs, and company secretary acting as the secretary to the Nomination and Remuneration Committee from October 1, 2019 - Present.

Term of Office

1. Nomination and Remuneration Committee members' term of office shall be equal to their directorship's term of office (Not more than 3 years).
2. Member of the Nomination and Remuneration Committee who retires by rotation may be re-appointed by the Board of Directors (Not more than three consecutive terms, or a combined total of up to nine years. There will be no exception).

Duties and Responsibilities

Nomination and Remuneration Committee's Duties and Responsibility separated in 2 parts are as follows:

Part 1 Nomination

1. Review and make recommendations for the structure, size, and composition of the Board of Directors and Sub-Committees based on the size, type, and complexity of IRPC's business. In doing so, the committee ensures that the Board is transparent and free from the influences of shareholders with controlling power and inspires confidence in external parties. Its proposal shall be submitted to the Board of Directors and/or the shareholders' meeting for approval.

2. Review the qualifications of each director candidate. The following criteria shall apply:

- 1) The Board of Directors shall consist of directors who have necessary skills knowledge, capabilities but none of the prohibitions stipulated by law and other relevant regulations, including the Corporate Governance Handbook and Articles of Association.
- 2) Directors serving on the Board shall have positive general characteristics, including integrity, responsibility, ability to make informed decisions, maturity, assertiveness, unconventional thinking, independent viewpoints, principled and high professional standards, as well as diversity in terms of knowledge, experience, age and gender mix.
- 3) Directors serving on the Board shall possess skills that suit the business needs and requirements of IRPC. It is in IRPC's best interest if the candidates are on the lists of competent professionals certified or recommended by a government agency.
- 4) Directors serving on the Board shall be able to dedicate their time fully to the position. Their directorships in other companies and/or state

enterprises and/or companies listed on the Stock Exchange of Thailand must satisfy the following requirements:

- (1) Up to three state enterprises or juristic persons whose shares are held by a state enterprise.
 - (2) Holding a directorship in not more than three companies listed on the Stock Exchange of Thailand, provided that the total number of directorships under (1) and (2) not exceeding five entities.
3. Review the qualifications of each independent director candidate, to ensure suitability, taking into account corporate governance principles, criteria of the Securities and Exchange Commission and the Stock Exchange of Thailand. The committee shall also ensure that these candidates do not possess any of the prohibitions stipulated by law and relevant regulations.
 4. Propose the criteria and procedures for nominating incoming directors to the Board for approval.
 5. Recommend appropriate director candidates in the event of a vacancy or retirement by rotation to the Board or shareholders at a shareholders' meeting for approval.
 6. Nominate suitable members of the Board to serve on subcommittees. Such nomination must be endorsed or approved by the Board.
 7. Vet candidates for the positions of the President and CEO in the best interest of IRPC. The nomination and appointment of the President and CEO are subject to the Board's approval.
 8. Determine the President and CEO's duties, responsibilities, and performance targets. Leadership, social responsibility, implementation of strategies, financial performance, relationships with the Board and the management, succession planning, positive corporate image, etc., shall serve as the criteria for the annual review of the President and CEO's performance and determination of compensation, subject to the Board's approval.
 9. Evaluate the President and CEO's performance against defined criteria as well as to determine the annual adjustments of salary, pension, bonus, welfare package and other monetary and non-monetary benefits. The proposal shall be subject to the Board's approval.

10. Review the succession planning for the positions of the President, CEO and other upper management positions to prepare for when they retire or if any of them being unable to perform their duties to ensure business continuity.

Part 2 Director Compensation

1. Propose the compensation components and criteria of directors and subcommittees, such as retainer fees, bonus, meeting allowance and monetary and non-monetary benefits that are adequate and fair, commensurate to the size of IRPC's business. Such compensation packages shall provide good incentives and enable the company to retain high-caliber directors, which are aligned with shareholders' best interest. Director compensation must be approved by the shareholders' meeting.
2. Determine the criteria and components of the President and CEO's compensation based on suitability, adequacy and fairness to motivate the President and CEO to create value-added to IRPC sustainably. The compensation package is designed to retain a highly effective leader. The President and CEO's compensation shall be subject to the Board's approval.
3. Where necessary, the committee may engage external consultants to give advice on the appropriate compensation for directors and the President and CEO. IRPC shall bear the expenses.
4. Perform other tasks assigned by the Board.

Director Nomination Process

The Nomination and Remuneration Committee reviews and selects suitable candidates to fill vacant positions at the Board or one of the Sub-Committees based on desired qualifications specified by the Board under the following criteria:

1. The nominees shall possess suitable knowledge, experiences, and abilities that will benefit IRPC, especially in the business or industrial sectors where IRPC belongs. At the same time, the candidates shall also satisfy the Board's requirements for diversity and inclusion in alignment with the company's business direction.
2. The committee shall consider the Board's skills matrix and diversity in terms of gender, age, fields of expertise, experience and hard and soft skills as well as sustainability factors. Director candidates, if appointed, should be able to perform their role efficiently and complement the Board with their unique knowledge, competencies, experience, and diversity for the benefit of IRPC. Information from the State Enterprise Policy Office's Directors' Pool and the Thai Institute of Directors Association (IOD) shall also be taken into consideration.
3. The nominees shall possess all the desired qualifications but none of the prohibitions stipulated by law, such as the Public Limited Company Act B.E. 2535, the Securities and Exchange Act B.E. 2535 and other pertinent regulations.
4. The committee shall consider the director nominees' record of accomplishment, commitment and dedication, and in cases of returning directors, their past performance. Nominees' directorships in other listed companies must not prevent them from fulfilling the requirements of IRPC's business. In addition, the number of their directorships shall not exceed the established limit and shall conform to the Cabinet Resolution dated January 24, 2011, regarding state enterprises' anti-corruption guidelines that seeks to limit the appointment of high-ranking government officials to serve as directors at state enterprises.
5. The committee shall ensure that directors' independence satisfies the requirements of the Securities and Exchange Commission and those of IRPC. If any of the existing independent directors no longer meet these requirements, the committee shall nominate additional individuals to replace them to maintain the proportion prescribed in the Board's policy.
6. The committee shall determine the term of office for independent directors. A returning independent director may serve up to three consecutive terms, or a combined total of not more than nine years.
7. The committee shall reach out to qualified candidates before nomination to ascertain that such persons would be willing and ready to accept a directorship at IRPC if appointed.
8. The committee shall present a list of nominees who meet the criteria, along with their qualifications and reasons for their nomination, to the Board of Directors. With Board's approval, the list shall go before the shareholders' meeting for approval. The Board shall have the authority to appoint a new director in the case of appointment to fill a vacancy that occurs or in case of resignation during the year in accordance with the Company's Articles of Association and the Public Limited Companies Act.
9. For appointments to Board's committees, the Nomination and Remuneration Committee shall consider candidates with appropriate knowledge and abilities, the composition of each committee, and directorship criteria, such as Board skills matrix/Board diversity, and their independence credentials, for submission to the Board for approval.

3. Corporate Governance Committee

The Corporate Governance Committee shall consist of at least three directors, at least one of whom shall be an independent director. Its role shall be to offer corporate governance guidelines and advice to the Board. Its current members are:



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| 1) | Mr. Supot Laosuarpha | Chairman of the Corporate Governance Committee |
| 2) | Asst. Prof. Dr. Chaiyaporn Puprasert | (Independent Director) member of the Corporate Governance Committee |
| 3) | General Aittipol Suwannarat | (Independent Director) member of the Corporate Governance Committee |

Miss Arisara Suthasut, Executive Vice President, Office of Corporate Affairs and company secretary serves as the secretary to the Corporate Governance Committee from October 1, 2019 - Present.

(Miss Arisara Suthasut's professional profile appears under Executive Profiles on page 52)

Term of Office

- Members' term of office shall be equal to that of their directorships (up to three years).
- Members who complete their terms of office may be re-appointed, subject to the Board's discretion, but they may serve no more than three consecutive terms, or a combined total of nine years. There shall be no exceptions.
- Remuneration package for members will be in line with the criteria approved by the shareholders.

Duties and Responsibilities

- Review and advise the Board of Directors on establishment of CG Framework that is aligned with IRPC's operational structure, in line with international best practices.
- The committee shall prescribe corporate governance policy and guidelines as well as other pertinent matters of significance, such as the Code of Ethics and the Code of Conduct, sustainability management, social, community, and environmental responsibility, anti-bribery and anti-corruption drives, and policies related to governance, risk management, and compliance management (GRC), to ensure compliance with the

principles, standards, and requirements of listed company regulators, such as the Stock Exchange of Thailand and Securities and Exchange Commission, as well as those of nationally and internationally recognized organizations, so as to support IRPC's strategies and goals. The committee shall also review and revise these policies and guidelines periodically.

- Determine guidelines, oversight and monitoring mechanisms to ensure IRPC's operations are in compliance with defined policies and practices so as to continually improve and strengthen corporate governance.
- Review compliance with corporate governance policy and guidelines as well as other pertinent matters of significance.
- Approve methods for assessing the performance of the Board and its committees. The committee also reports assessment results to the Board of Directors and shareholders every year.
- Give advice, suggestions and recommendation pertaining to corporate governance guidelines to the Board of Directors.
- Perform other tasks assigned by the Board.

4. Risk Management Committee

The Risk Management Committee shall consist of at least three directors who are petroleum or petrochemical experts. The committee is tasked with formulating risk management policy, risk management plan and procedures across the entire company that are aligned with IRPC business plan and strategies. Its current members are:



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| 1) Dr. Anusorn Sangnimnuan | (Independent Director) Chairman of the Risk Management Committee |
| 2) Dr. Ekniti Nitithanprapas | member of the Risk Management Committee |
| 3) Miss Peangpanor Boonklum | member of the Risk Management Committee |
| 4) Mr. Prasong Intaranongpai | member of the Risk Management Committee |
| 5) Mr. Kris Imsang | member of the Risk Management Committee |

Mr. Somkiat Lertritpuwadol, Executive Vice President Corporate Strategy Planning and Business Development serves as secretary to the Risk Management Committee from February 2019 - December 31, 2022.

Term of Office

- Risk Management Committee member's term of office shall be equal to that of their directorship (Up to three years).
- Members who complete their terms of office may be reappointed, subject to the Board's discretion. But they may serve no more than three consecutive terms, or up to a combined total of nine years. There shall be no exceptions.

Duties and Responsibilities

- Formulate suitable, effective policy and give recommendations on the management of risks associated with IRPC's business operations.
- Provide oversight for enterprise-wide risk management, starting with identification of risks based on internal and external factors. All units shall conduct risk assessment and rank those risks based on impact and likelihood of them happening, so appropriate risk management measures can be taken.

- Develop risk management systems and promote effective use of risk management tools, such as derivatives, futures and hedging, etc.
- Supervise, monitor and review the corporate risk management to ensure its effectiveness as well as assessing compliance with the risk management framework.
- Report risk management assessment results and risk mitigating activities to the Board on a regular basis, and in the case of risk event that may adversely affect IRPC's operations, report to the Board immediately.
- Provide support for establishment and continuing development of risk management that is constantly in alignment with IRPC's business plan.
- Give advice on risk management for investment projects or activities with considerable technical complications, long-term obligations, and are potentially exposed to significant risks.
- Disclose the report of the Risk Management Committee in the annual report.
- Perform other tasks assigned by the Board.

Management and Management-Level Committees

At IRPC Public Company Limited, the highest-ranking person is the President and Chief Executive Officer. The President and CEO oversees the management of all IRPC's operations under the guidance of the Board of Directors. He acts in the best interest of the company and shareholders. The President and CEO reports any material change in the management structure to the Board for review and approval.

In 2022, IRPC continuously implemented the New Organization with Agile Human (NOAH) initiative to restructure the organization in line with business needs, with emphasis on effective cost management to achieve lower and competitive costs as well as a lean workforce structure suitable for IRPC's mission. Under this management strategy, IRPC introduced a program to Upskill/Reskill across all employee levels, improvement in performance assessment and incentive reward programs, significantly decrease in employees' expenses approximately Baht 1,077 million. The summary of performance according to NOAH modules as follows:

- Module A: improve work processes throughout the company by implementing Lean Transformations. The total outcome is the equal of 751 employee substitutes, 42-94 per cent faster ability, and 2-10 times productivity gains.
- Module B: improve knowledge and acquire new skills required for work, the company can develop its workforce. This can be compared with employees who conduct the same jobs in reputable companies (Benchmarking with Peers).
- Module C: create a review, a process for performance evaluation, and notable awards in accordance with the objectives of the plan.
- Module D: Recruit new hires with the skills and knowledge necessary to fulfill the requirements outlined in the hiring plan. the execution of the succession plan (succession management) especially level N-2 and N-3 have been finished.

The President and Chief Executive Officer

The Chief Executive Officer and President, whose power to direct the company in accordance with its objectives, rules, and Board's policies specifically stated in writing, are designated by the Board of Directors as the head of management. This includes the organization's policies and procedures in various functions for management and employees as well.

Mr. Chawalit Tippawanich served as President and Chief Executive Officer from December 1, 2020 to September 30, 2022.

Mr. Kris Imsang has served as President and Chief Executive Officer from October 1, 2022 to present.

Duties and Responsibilities

1. Ensure that the company operates in compliance with the law, its objectives and Articles of Association, Board's policies, and shareholder resolutions.
2. Take charge of the management staff, employees, and personnel, including matters relating to hiring, appointments, work regulations, salary scales, wages, welfare benefits, transfers, removals, dismissals, reshuffles, pay adjustments, promotions, disciplinary actions under the Board's policy framework.
3. Implement policies, strategic plan, business plan in accordance with IRPC's vision and mission under the operational framework approved by the Board of Directors, with efficiency and in the company's best interest.
4. Approve investment budgets, procurements, operating expenses under the business plan and within the annual budget approved by the Board.
5. Manage cashflows, investment projects, budgets, and risk management plans and procedures under the guidelines and within the scope of authority granted by the Board.
6. Review IRPC's operating results and consider proposing interim or annual dividend payment (if any), which must be approved by the Board or the shareholders' meeting.
7. Evaluate the company's performance and report progress status of the implementation of the business plan to the Board on a quarterly basis.

8. Lead by example with integrity and compliance with code of ethics and business conduct.
9. Provide leadership and serve as a role model to encourage and motivate employees to adopt the IRPC corporate culture and develop positive mindset. The President shall also be a good communicator to inspire confidence and enhance the corporate image, with emphasis on environmental stewardship, social responsibility, and community development as well as work safety and occupational health for the company's employees.
10. Implement IRPC's anti-corruption and anti-bribery guidelines.
11. Ascertain that IRPC stays committed to achieving the UN Sustainable Development Goals (SDGs) and Good Global Corporate Citizenship.
12. Undertake to support the company's operations in every way within the scope of authority granted by the Board.

Senior Executive Officers

IRPC's six senior executive officers according to the Securities and Exchange Commission's definition, as of January 1, 2022, consist of:

Name	Position
1. Mr. Kris Imsang	President and Chief Executive Officer/ Secretary of the Board of Directors
2. Mr. Woravuth Sivapetrarnart	Acting Senior Executive Vice President, Innovation and Operation Excellence/ Senior Executive Vice President, Petrochemical and Refinery Operation
3. Mr. Pranach Kosayanon	Senior Executive Vice President, Corporate Strategy Planning and Business Development
4. Mr. Pichin Apiwannaporn	Senior Executive Vice President, Corporate Accounting & Finance
5. Ms. Wanida Utaisomnapa	Senior Executive Vice President, Corporate Commercial and Marketing
6. Mr. Poramet Junwichit	Senior Executive Vice President, Corporate Organization Effectiveness

Notes: 1. Mr. Chawalit Tippawanich, President and Chief Executive Officer/ Secretary of the Board of Directors, resigned on September 30, 2022

2. Mrs. Nidcha Jirameththanakij, Senior Executive Vice President, Corporate Accounting & Finance, resigned on September 30, 2022

3. Mr. Somkiat Lertritpuwadol, Senior Executive Vice President, Corporate Strategy Planning and Business, resigned on December 31, 2022

Duties and Responsibilities

1. Implement the President and Chief Executive Officer's policies and goals.
2. Determine and align the strategic plans, objectives, and primary goals of their respective functions with IRPC's vision and mission. These shall serve as guidelines for implementation by employees.
3. Ensure the accomplishment of predetermined goals, objectives and short- and long-term strategic plans within the management framework under the organizational structure within the scope of their assignments.
4. Provide advice, support, assist, and find solutions to problems for their team. They shall also create motivation and a work environment that maximize employees' performance efficiency.

5. Encourage personal development among employees in order to realize their potential for their own and the company's benefits.
6. Foster the company's sustainable growth under good corporate governance principles, with due regard to environmental stewardship and social responsibility.
7. Lead by example and serve as IRPC DNA Role Model for their subordinates.

Management Committee

To bolster systematic operational efficiency and strengthen connections and good coordination within IRPC and in its interaction with joint ventures and subsidiaries, the President and CEO established the Management Committee (MC), consisting of the President and CEO, senior executive vice presidents and executive vice presidents of all business units. The Executive Vice President, Corporate Affairs serves as the secretary to the Management Committee.

With weekly meetings scheduled for Mondays for the entire year, the Management Committee met 54 times in 2022.

Duties and Responsibilities

The Board of Directors have a duty to consult and consider jointly for deciding significant issues important to the Strategy, Business Direction, Operational Plan, Performances, Investment Plan, Budget, Human Resource Management Guidelines, and Resources Allocation to the Company or its affiliated companies. Systematic management and working in the same direction as well as providing information to Chief Executive Officer and President in order to make decisions or propose to the Board of Directors consider in case of it overstep the authority of the Chief Executive Officer and President. The mission can be summarized as follows:

1. Establish vision and key business goals for the company and its subsidiaries.
2. Define guidelines, plans, and objectives for the Company's business activities. and the achievement of the IRPC group businesses.
3. Determine the corporate governance, GRC integration, sustainable business operations, human resource management and development, quality, safety, health, and environment management, and social responsibilities of the company as well as companies in the IRPC group.
4. Review and evaluate investment and resource structure for investment budgeting and support the operations of IRPC and its subsidiaries.
5. Review and evaluate investment management of IRPC and its subsidiaries (IRPC Group's Portfolio Management).
6. Scrutinize important business matters that may affect to change in key operations of IRPC and its subsidiaries such as reformation, expansion, diversification of investments, joint-ventures, acquisition, and other initiatives etc.
7. Establish an efficient and systematic IRPC Group's governance policy which support future challenges in decision making of Human resources management, preparation, and development of executives.
8. Scrutinize and establish the IRPC Group's governance policy and management approach per IRPC Group Way of Conduct to ensure consistency in results and achieve common standards across the IRPC Group.
9. Scrutinize and give opinions on standards and management mechanism of the company and companies in the IRPC group related to human resources system, organizational structure, including risk management, anti-corruption prevention.
10. Monitor the overall performance of various aspects of an organization, such as innovation and technology, and support the effective execution of all the business divisions in the Company and the IRPC group of companies.
11. Consider, scrutinize, suggest, and approve the meeting agenda before presenting to the Board of Directors' meeting.

12. Follow up on and put into execution on recommendations, and comments given from Board of Directors sessions.
13. Appoint a subcommittee and/or working group to make the work of the management committee (MC) efficient.
14. Consider and review the approval of procurements and investments within the approval authority of the Chief Executive Officer and President.
15. Perform any other tasks as assigned by the Chief Executive Officer and President.

Auxiliary Risk Management Committees at Management Level

In addition to the Risk Management Committee of the Board of Directors, IRPC has established the following auxiliary risk management committees, workgroups, and risk agents to monitor enterprise-wide risk management activities and ensure greater efficiency in the company's overall risk management and internal control systems:

1. Risk Management and Internal Control Committee (RMCC)
2. Hedging Committee
3. Risk Manager, who is responsible for managing the overall risk of a business unit.
4. Risk Owner, who is responsible for risk management and development of risk management plan.
5. Risk Agent, who coordinates risk management planning within a unit or project, and reports risk management progress status or performance to the respective departmental or project manager to ensure appropriate, sufficient risk management that corresponds to risks at the unit level.

Committees and Sub-Committee

The Chief Executive Officer and President has also appointed Committees and other sub-committees as appropriate with the company's strategic plan together with the Company's situation in order to manage, drive, operate or screen operations regarding assigned duties, for example,

1. Rayong Factory Group Management Committee (RMM) to manage and integrate the overall work of the group of Rayong factory to be in line with the vision, mission, and ready to step to achieve the company's goals.
2. Human Resources and Organization Potential Management Committee (HOMC) to screen and advise on standards, mechanisms of Human Resource Management, organizational structure, and succession plan.
3. License issue management committee under section 9 to manage public use matters and manage issues Community complaints to be transparent and beneficial to the community and business operations of the Company.
4. Environmental Quality Management Committee (EMC) to manage environmental quality and accountability to the society of the IRPC group in order to be in line with the quality policy security, safety, occupational health, environment and Power Management (QSSHE).
5. Management team at department manager level to drive operations according to the company's strategy with a meeting of the executive committee in the position of Department Manager or above (VP Meeting) 1 time per month.

Compensation

Compensation of the President and Chief Executive Officer

The Nomination and Remuneration Committee determines the President and CEO's compensation based on well defined, transparent, fair, and reasonable criteria, taking the role's duties, responsibilities, and performance review as well as IRPC's operating results into consideration.

The proposal for the compensation of the President and CEO is then submitted to and approved by the Board. Determination of compensation of the President and CEO follows the procedural steps that correspond with the performance appraisal as follows:

1. The Nomination and Remuneration Committee proposes the compensation components and criteria to the Board for consideration at the beginning of the year.
2. The Board approves the proposal and notifies the President and CEO of the performance review criteria.
3. The Nomination and Remuneration Committee conducts performance appraisal of the President and CEO based on the established criteria throughout the year. The committee takes into account key components of the overall performance, such as problem-solving skills, communication in crisis situations, community relations, environmental stewardship, response to corporate governance issues, and corporate image management, etc., within the context of the company's business outlook and the challenges it faces.
4. The Nomination and Remuneration Committee presents the results of the President and CEO's performance review, along with the proposed annual compensation adjustments, to the Board for approval in December.

Management Compensation

IRPC annually evaluates the performance of executive officers at all levels. Its Performance Management System (PMS) consists of three components:

1. Key Performance Indicators (KPIs)
2. Competency; and
3. Desired Behavior

In 2022, there were eight senior executive officers, according to the SEC's definition, including two senior executive who resigned during the year. They received a combined total of Baht 60.06 million in monthly salaries, bonuses, and provident fund contributions as follows:

(Unit: Million Baht)

Compensation Components	2019 (7 persons)	2020 (7 persons)	2021 (6 persons)	2022 (8 persons)
Cash				
Salary	40.05	33.59	30.85	36.15
Bonus	12.87	15.3	6.70	18.70
Others				
Provident Fund Contribution	3.31	4.66	4.42	5.21
Total	56.23	53.55	41.97	60.06

In 2022, seven executive officers received compensation from serving as directors of IRPC A&L Company Limited (a subsidiary), totaling Baht 1.89 million.

Director and Executives' Shareholding Report

Directors' shareholding as of December 31, 2022

No.	Name	As of Dec 31, 2021 Shareholding Percentage/ Number of shares	As of Dec 31, 2022 Shareholding Percentage/ Number of shares	Number of shares Increase (Decrease) during the fiscal Year	WARRANT / NVDR / TSR/ DW 2022	Notes
1.	Dr. Siri Jirapongphan		None	No Change	None	New Director at AGM meeting April 5, 2022
	Spouse		None	No Change	None	
	Minor child		None	No Change	None	
2.	Mr. Somnuk Bomrungsalee	0.00024% 50,000	0.00024% 50,000	No Change	None	
	Spouse	None	None	No Change	None	
	Minor child	None	None	No Change	None	
3.	Dr. Anusorn Sangnimnuan	None	None	No Change	None	
	Spouse	None	None	No Change	None	
	Minor child	None	None	No Change	None	
4.	Mr. Supot Laosuarpha	0.00024% 50,000	0.00024% 50,000	No Change	None	
	Spouse	None	None	No Change	None	
	Minor child	None	None	No Change	None	
5.	Miss Siriwan Chierapong	None	None	No Change	None	
	Spouse	None	None	No Change	None	
	Minor child	None	None	No Change	None	
6.	Mr. Jumpol Sumpaopol	None	None	No Change	None	
	Spouse	None	None	No Change	None	
	Minor child	None	None	No Change	None	
7.	Dr. Ekniti Nitithanprapas	None	None	No Change	None	
	Spouse	None	None	No Change	None	
	Minor child	None	None	No Change	None	
8.	Miss Peanganor Boonklum	None	None	No Change	None	
	Spouse	None	None	No Change	None	
	Minor child	None	None	No Change	None	
9.	Mr. Prasong Intaranongpai		None	No Change	None	New Director since December 1, 2022
	Spouse		None	No Change	None	
	Minor child		None	No Change	None	
10.	Asst. Prof. Dr. Chaiyaporn Pupasert	None	None	No Change	None	
	Spouse	None	None	No Change	None	
	Minor child	None	None	No Change	None	

No.	Name	As of Dec 31, 2021 Shareholding Percentage/ Number of shares	As of Dec 31, 2022 Shareholding Percentage/ Number of shares	Number of shares Increase (Decrease) during the fiscal Year	WARRANT / NVDR / TSR/ DW 2022	Notes
11.	General Aittipol Suwannarat		None	No Change	None	New Director at AGM meeting April 5, 2022
	Spouse		None	No Change	None	
	Minor child		None	No Change	None	
12.	Mr. Chansak Chuenchom	None	None	No Change	None	
	Spouse	None	None	No Change	None	
	Minor child	None	None	No Change	None	
13.	Mr. Petai Mudtham		None	No Change	None	New Director Since January 19, 2022
	Spouse		None	No Change	None	
	Minor child		None	No Change	None	
14.	Mr. Yordchatr Tasarika		None	No Change	None	New Director at AGM meeting April 5, 2022
	Spouse		None	No Change	None	
	Minor child		None	No Change	None	
15.	Mr. Kris Imsang		None	No Change	None	New Director Since October 1, 2022
	Spouse		None	No Change	None	
	Minor child		None	No Change	None	
Directors completed term / resigned						
16.	Mr. Woothisarn Tanchai	None	None	No Change	None	Completed term AGM April 5, 2022
	Spouse	None	None	No Change	None	
	Minor child	None	None	No Change	None	
17.	Mr. Sukrit Surabotsopon	None	None	No Change	None	Completed term AGM April 5, 2022
	Spouse	None	None	No Change	None	
	Minor child	None	None	No Change	None	
18.	Air Marshal Boonsuib Prasit	None	None	No Change	None	Completed term AGM April 5, 2022
	Spouse	None	None	No Change	None	
	Minor child	None	None	No Change	None	
19.	Mr. Chawalit Tippawanich	0.00220% 450,000	0.00220% 450,000	No Change	None	Resigned as Chief Executive Officer September 30, 2022
	Spouse	None	None	No Change	None	
	Minor child	None	None	No Change	None	

As of December 31, 2022, and during the past 5 years, no directors, or executive officers of IRPC have any records of wrongful activities under the Securities and Exchange Act B.E. 2535 (1992) or Derivatives Act B.E. 2546 (2003), or any of the following:

1. Dishonesty or gross negligence.
2. Disclosure or dissemination of false information or statements that may cause misunderstanding, or concealing essential facts that ought to be disclosed, which may have affected the decisions of shareholders, investors, or concerned parties; or
3. Unfair conduct or taking unfair advantage of investors in the trade in stocks, derivatives, or futures or having taken part in or supported such misconducts.

Director of Subsidiaries as of December 31, 2021

1. IRPC Oil Co., Ltd.

Name	Position (s)
1. Miss Wanida Utaisomnapa	Member
2. Mr. Woravuth Sivapetranart	Member
3. Mr. Pongsak Wattanakarunwong	Managing Director

2. IRPC Polyol Co., Ltd.

Name	Position (s)
1. Mr. Sergiusz Stefanowski	Chairman
2. Mr. Krit Imsang	Member
3. Mr. Phichin Aphiwantanaporn	Member
4. Mr. Woravuth Sivapetranart	Member
5. Mr. Rafal Zdon	Member
6. Mr. Waldermar Franz Preussner	Member
7. Miss Soh Bee Hong	Member
8. Mrs. Wiparat Wattanakij	Managing Director

3. IRPC Technology Co., Ltd.

Name	Position (s)
1. Mr. Poramas Chullawichit	Chairman
2. Mr. Rathapol Unakanporn	Member
3. Miss Arisara Suthasut	Member
4. Mr. Surachai Toaphicharttrakul	Member
5. Mrs. Suchinda Ploymontree	Member
6. Mr. Preeda Boonsilp	Managing Director

4. IRPC A&L Co., Ltd

Name	Position (s)
1. Mr. Krit Imsang	Member
2. Mr. Phichin Aphiwantanaporn	Member
3. Miss Wanida Utaisomnapa	Member
4. Mr. Woravuth Sivapetranart	Member
5. Mr. Payom Boonyoung	Member
6. Mr. Soji Sakamoto	Member
7. Mr. Hideyuki Tokimasa	Member
8. Mr. Dai Yamashita	Member
9. Mr. Takayuki Mano	Member

5. Rakpasak Co., Ltd.

Name	Position (s)
1. Mr. Somboon Sadsin	Chairman
2. Mr. Surachai Toaphicharttrakul	Member
3. Mr. Chokchai Olansirikul	Member
4. Mr. Panutat Kiatananchai	Managing Director

6. iPolymer Co., Ltd.

Name	Position (s)
1. Miss Wanida Utaisomnapa	Member
2. Miss Suwannee Buranapraditkul	Member
3. Mr. Hu Jiezhong	Member
4. Miss Liu Yuhong	Member

7. Innopolymed Co.,Ltd.

Name	Position (s)
1. Mr. Savara Kwangsopa	Chairman
2. Mr. Phichin Aphiwantanaporn	Member
3. Mr. Anucha Somjitchob	Member

Positions of Directors and Executives in Subsidiaries/ Associated Companies/ Related Companies as of December 31, 2022

No.	Name	Com- pany	Subsidiaries					Joint Ventures			Associated Companies		Related Companies	
		IRPC PLC	IRPC Oil Co., Ltd.	IRPC Technology Co., Ltd.	IRPC A&L Co., Ltd.	IPolymer Co., Ltd.	INNOLYMED CO., LTD.	IRPC Polyol Co., Ltd.	WHA Industrial Estate (Rayong) Co., Ltd.	Mytex Polymers (Thailand) Co., Ltd.	UBE Chemical (Asia) PLC	IRPC Clean Power Co., Ltd.	PTT PLC	The Energy Complex Co., Ltd.
1.	Dr. Siri Jirapongphan ⁽¹⁾	x												
2.	Mr. Somnuk Bomrungsalee	/												
3.	Dr. Anusorn Sangnimnuan	/												
4.	Mr. Supot Laosuarpha	/												
5.	Ms. Siriwan Chierapong	/												
6.	Mr. Jumpol Sumpaopo	/												
7.	Dr. Ekniti Nitithanprapas	/												
8.	Ms. Piangpanor Boonklam	/										//	/	
9.	Asst. Prof. Dr. Chaiyaporn Puprasert	/												
10.	Mr. Chansak Chuenchom	/										//	x	
11.	Mr. Petai Mudtham ⁽²⁾	/												
12.	General Aittipol Suwannarat ⁽³⁾	/												
13.	Mr. Yordchatr Tasarika ⁽⁴⁾	/												
14.	Mr. Prasong Intaranongpai ⁽⁵⁾	/										//		
15.	Mr. Kris Imsang ⁽⁶⁾	/, //		/			/			/		//		
16.	Mr. Woothisarn Tanchai ⁽⁷⁾													
17.	Mr. Sukrit Surabotsopon ⁽⁸⁾													
18.	Air Mshl. Boonsuib Prasit ⁽⁹⁾													
19.	Mr. Chawalit Tippawanich ⁽¹⁰⁾													
20.	Mr. Woravuth Sivapetranart	//	/		/		/	/			/			
21.	Miss Wanida Utaisomnapa	//	/		/	/		/	/	/				
22.	Mr. Poramet Junwichit ⁽¹¹⁾	//		x										
23.	Mr. Phichin Aphiwantanaporn ⁽¹²⁾	//			/		/	/	/	/	/			
24.	Mrs. Nidcha Jirametthanakij ⁽¹³⁾													
25.	Mr. Somkiat Lertritpuwadol ⁽¹⁴⁾													

Remark: X = Chairman / = Director // = Management

⁽¹⁾ Dr. Siri Jirapongphan appointed as the Director on Apr 05, 2022, AGM.

⁽²⁾ Mr. Petai Mudtham appointed as the Director on Jan 19, 2022.

⁽³⁾ General Aittipol Suwannarat appointed as the Director on Apr 05, 2022, AGM.

⁽⁴⁾ Mr. Yordchatr Tasarika appointed as the Director on Apr 05, 2022, AGM.

⁽⁵⁾ Mr. Prasong Intaranongpai appointed as the Director on Dec 1, 2022.

⁽⁶⁾ Mr. Kris Imsang appointed as the Director and Management on Oct 1, 2022.

⁽⁷⁾ Mr. Woothisarn Tanchai completed the term on Apr 05, 2022, AGM.

⁽⁸⁾ Mr. Sukrit Surabotsopon completed the term on Apr 05, 2022, AGM.

⁽⁹⁾ Air Marshal Boonsuib Prasit completed the term on Apr 05, 2022, AGM.

⁽¹⁰⁾ Mr. Chawalit Tippawanich resigned from the Director and Management on Sep 30, 2022.

⁽¹¹⁾ Mr. Poramet Junwichit appointed as the Management on Jan 01, 2022.

⁽¹²⁾ Mr. Phichin Aphiwantanaporn appointed as the Management on Oct 01, 2022.

⁽¹³⁾ Mrs. Nidcha Jirametthanakij resigned from the Management on Sep 30, 2022.

⁽¹⁴⁾ Mr. Somkiat Lertritpuwadol retired on Dec 30, 2022.

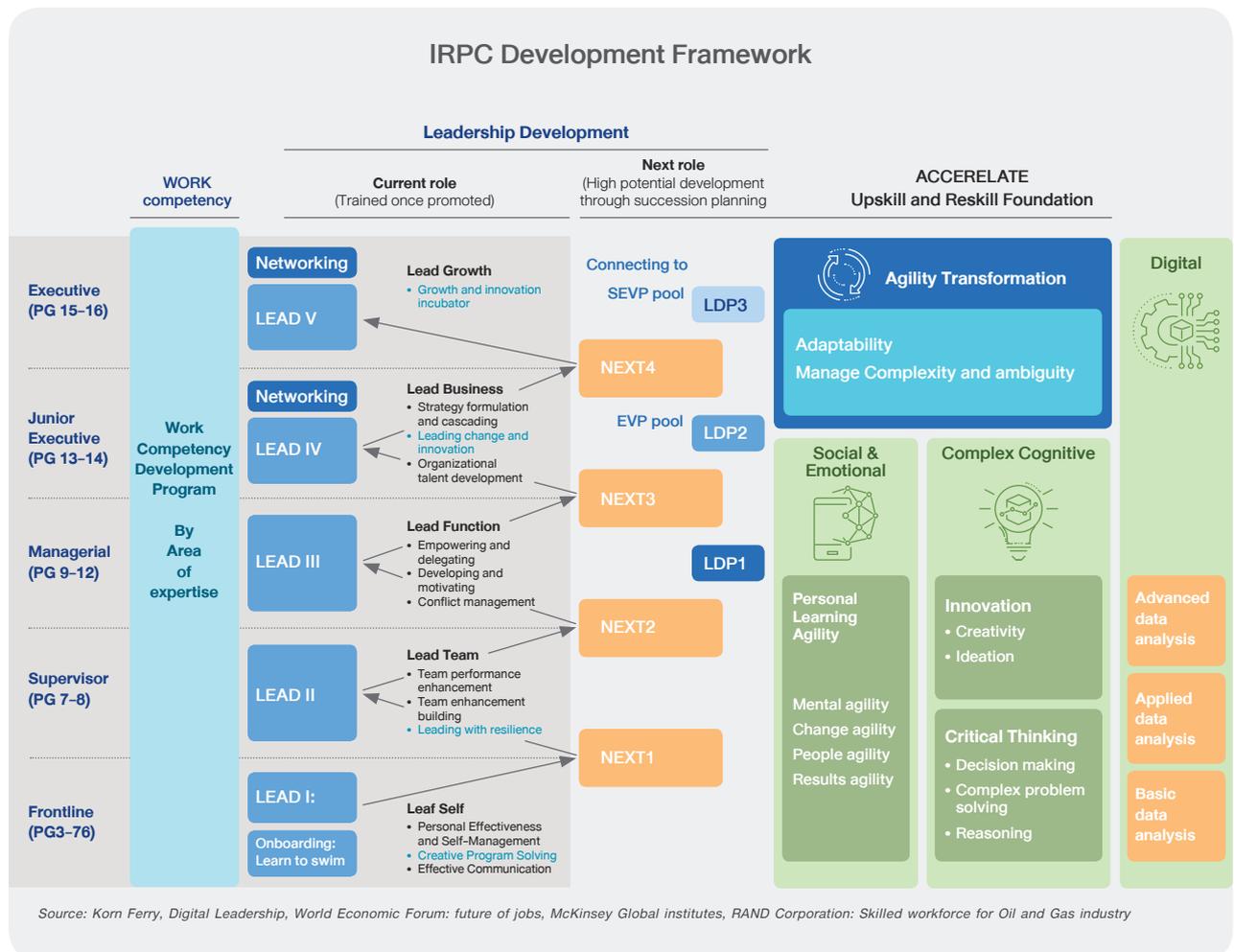
Human Resources Management

Human Resources Management in Accordance with Business Strategy

The Company has set a framework for strategic implementation and business direction by focusing on strength from our internal team. The business expansion development from our expertise in the current business value chain and seeking new business to push the company grow regarding the vision and mission to become a sustainable material and energy solutions company by the investment for future growth. We are focusing on collaborating with suppliers, customers, and business partners (JV, M&A, New S-Curve, Startup) both domestically and internationally with a focus on Human Resources Development which prepare the individual one by one and raise key behaviors to support the strategy to achieve results as follows:

1. Employee’s Competency Development

In order to be competitive and operate the business in the same industry, the Company has set the human resources development framework (IRPC Development Framework) to be in line with the organization's goals and based on Competency-Based Learning mainly aims to develop employees from the junior level to the senior management level which consisted of developing knowledge and abilities regarding their own responsibilities and employee regarding the development program in Work Competency, Leadership Competency, and Future Skill (Upskill & Reskill) as follows:



1. Work competency development by grouping of performance according to the overall work that focus on for each career path (Value Chain) to develop knowledge skills of employees in the organization to suit their roles and responsibilities and responsibility. It is pertaining to work and planning to Self-development and promoting higher potential of employees. We are also focusing on employees to develop their knowledge abilities and skills belongs to each profession. Presently, there are 7 groups of expertise to apply knowledge and skills, can be used to work efficiently.

2. Leadership Competency focuses on Leadership Development and business knowledge of employees for each level as follows;

- Onboarding development through learning from the orientation for new employees, Self-Development, Specialized, and Common Course such as QSHE operations, including Curriculum that Responds to Values (iSPIRIT) that reflect Competency and good governance.
- LEAD 1 (Leadership Development Program 1) to learn the basic of business operations and self-knowledge, including Working effectively with others (Lead Self).
- LEAD 2 (Leadership Development Program 2) to learn business principles and leadership Effective Team (Lead Team).
- LEAD 3 (Leadership Development Program 3) which is a course that focuses on development Leaders with an emphasis on developing core competencies/leaders of employees in Management level and learn business management (Business Management Program) to manage/manage effective change (Lead Function).
- VP/LEAD 4 Executive Development (Junior Executive Leadership Development Program 4) to develop executives with Leadership and Business development

courses for corporate strategic planning (Lead Business). We also have the external seminar courses to prepare for Potential executives include courses offered by TMA (Association Business Management of Thailand), CCL Institute (Center for Creative Leadership) SEP (Sasin) EDP (Research Institute Fiscal Policy), King Prajadhipok's Institute, etc.

- Development of senior management LEAD 5 (Executive Leadership Development Program 5) is an executive development program particularly in High level in Leadership and Business for growth of the organization (Lead Growth).
- Leadership Development Program of employees who have High Potential Next role (Talent Pool development through succession planning).
- Program to develop senior executives with PTT Group in Leadership Program (LDP I – III) for group executives' VP/EVP/SEVP Pool.

3. Development in the Accelerate Program for Upskill & Reskill employees to enhance knowledge and new skills that necessary for the competition in the digital age (Future Skill), for instance, increasing digital skills, Holistic knowledge that is practicable (Multi-Skill), increase capability in self-development to catch up and be able to compare with others who perform the same function in leading companies (Benchmarking with Peers), Skills and clear decision-making processes with the attitude and point of view public benefit in long-term mutual benefits, etc. through online learning system which employees can conveniently access the system anytime, anywhere, any devices (PC, Notebook, Mobile). The employees can plan their own study and use the learning system to develop the potential on their own regarding the Learning Roadmap guidelines that are required by each group of employees.

2. Individual Preparation

The management has prepared a success profile framework as a guideline for Development of potential executives (Management Pool) together with the preparation of a succession plan (Succession Planning) of senior executives who are highly significant to the business of the Company continually and carry out an individual development plan (Individual Development Plan: IDP) as a guideline to help employees in the company, they can work and achieve their goals in their function in order to manage continuity efficient and support the growth of the company.

- INDIVIDUAL OWNERSHIP**
- SYNERGY**
- PERFORMANCE EXCELLENCE**
- INNOVATION**
- RESPONSIBILITY FOR SOCIETY**
- INTEGRITY & ETHICS**
- TRUST & RESPECT**

3. Raising the key behavior

The Company adheres to iSPIRIT values which all executives and employees should have. It is the belief in doing expressive work according to the following values:



In conducting oneself according to the beliefs and norms of the organization's values, every executive must be an iSPIRIT Role Model and enhance the working environment to encourage employees to develop behaviors in earnest work called IRPC G3 (Good Great Growth to success) or "good, talented, brave" by key behavior "IRPC G3" has the following details:

Culture	Meaning	Key Behaviors
Good “ดี” ด้วยใจรับผิดชอบ	Employees of the company have ethics, accurate, transparent, respectful of different opinions and responsible for the organization, society and environment	1) Integrity & Ethics: what is right, transparent and follow the business guidelines conducting good business of the Company 2) Trust & Respect: Believe in others, respect different opinions, build memories positive in every relationship 3) Sustainability: Behave with responsibility to the organization, society and sustainable environment
Great “เก่ง” ทั้นโลกธุรกิจ	IRPC employees know deeply, know widely, integrate Shared Value and Generating Business Results IRPC Group and allies	1) Inclusive Competency: Continual development, Know-in-depth, Know-in-wide, build participating in a diverse group of people 2) Solution & Synergy Value: towards a common goal 3) Deliver Corporate Result: Deliver business results of IRPC Group and partners
Growth to Success “กล้า” เพื่อความสำเร็จ	IRPC employees think differently, do new things, create innovation, stand up, take responsibility lead the future to success	1) Leadership: Devoting energy, eager to do better than what is existing for the company in the future 2) Change, Transformation & Innovation Challenge: Find new ways to create innovations to increase the company growth. 3) Accountability & Commitment: understand the impact of decision, Take responsibility for our actions

From iSPIRIT Values to Key Behaviors G3 "Good, Smart, Eager", the company has driven through executives at all levels and linked to the Human Resource Management system, for example, operational management systems etc. by emphasizing on the "good, talented, courageous" behavior of all employees who will support the success of the departments and organizations' performance regarding the company's vision.

Development of Human Resource Operation System

Human Resource management has been redesigned to support more precise and effective working method including digitalization via i-Connect Platform which connect all HR operational systems thru Web/Mobile Application. IConnect provide convenience and speed, "Any where, Any time, Any Device", collect, analyse, design and develop HR system precisely. Furthermore, the Company also coordinate with health service provider to develop an application for reimbursement and medical expense verification including health data analysis to organize employees' health promotion activities.

Employee Engagement

IRPC has set up the structure and compensation including fringe benefits which is corresponding to the employee's roles and responsibilities for a good quality of life. During COVID-19 Pandemic, IRPC has taken measure to ensure its employees and family's safety by supporting them to get vaccine from both government and private sectors, and to provide necessary protective equipments such as masks, and alcohol sprays. IRPC also monitors employee's health and work welfare closely and encourage work from home regime to reduce infection by implementing e-conference system. IRPC setup a preparatory working committee, a 24-hours surveillance monitoring & controlling the spread. Also, the Covid-19 War Room is the operation center which keeps the employees update on COVID situation regularly and provide a mobile application for employee to do a daily location check in.

Number of Employees

As of the end of 2022, IRPC and its subsidiaries have a total of 5,380 employees, includes 5,316 employees of IRPC Public Company Limited and 64 employees of its subsidiaries, namely IRPC Oil Co., Ltd., IRPC A&L Co., Ltd, IRPC Technology Co., Ltd., and iPolymer Co., Ltd. With details as follows:

(Unit: Person)

Department	Number of Employees
1. Department under the President and CEO	376
2. Accounting and Finance	122
3. Commercial and Marketing	201
4. Corporate Strategic Planning	75
5. Management and Organization Development	1,116
6. Petrochemical and Refinery Operation	2,470
7. Innovation and Operation for Excellence	956
Total: IRPC's employees	5,316
Total: Subsidiaries' employees	64
Total number of employees	5,380

Employee Remuneration

The Company and its subsidiaries paid the compensation, which are salary, overtime, bonus, provident fund, and social securities to their employees in 2022 as follows;

(Unit: Baht)

Description	Amount
Salary, overtime, bonus, and other benefits	7,666,719,086
Provident Fund and Social Securities	441,509,394
Total	8,108,228,480

Other Important Information

Company Secretary



Miss Arisara Suthasut has served as Company Secretary since October 1, 2019 (Ms. Arisara Suthasut's professional profile appears under Executive Profiles on page 46).

In compliance with the Securities and Exchange Act, B.E. 2535 (1992), its B.E. 2551 (2008) amendments, and the Corporate Governance Code, the Board of Directors has appointed the executive vice president Office of Corporate Affairs as company secretary, tasked with performing the duties outlined in the law and notifications of the Capital Market Supervisory Board.

Duties and Responsibilities

1. Provide directors with preliminary advice on matters relating to laws, regulations, company's Articles of Association, monitor corporate compliance, and report material changes to the Board.
2. Organize Board and shareholders' meetings in accordance with the law, IRPC's Articles of Associations, and customary practices.
3. Record the minutes of Board and shareholders' meetings and ensure compliance with or execution of Board and shareholders' resolutions.
4. Oversee that information and data are disclosed to regulators in conformity with rules and regulations.
5. Prepare and catalog important documents, the Board of Directors' roster, meeting notices, meeting minutes, the company's annual reports, shareholders' meeting

invitations, shareholders' meeting minutes, directors and management's conflicts of interest reports, and other tasks prescribed by the Capital Market Supervisory Board and relevant laws.

6. Prepare information and reports pertaining to the Board and corporate governance, which are needed to apply for membership, certification for good corporate citizenship and compliance with national and international standards.
7. Implement anti-corruption activities in accordance with the Board's policies and measures.
8. Acquire information, build knowledge base, and adopt best practices relating to the company secretary's duties and responsibilities, and on keep abreast of corporate governance at national and international levels, and apply them as appropriate. The company secretary also attends training programs and workshops to stay up to date on changes and trends in laws, regulations and evolving corporate governance management approaches.
9. Facilitate one- and two-way communication channels for the discussion and dissemination of information on good governance with IRPC's stakeholders, including investors, shareholders, the media, and the public.

Person Assigned the Direct Responsibility of Supervising Accounting Preparation

Mr. Surachai Toaphicharttrakul has served as Accounting Manager since August 1, 2022 (Mr. Surachai Toaphicharttrakul's professional profile appears under Executive Profiles on page 46).

IRPC appointed Mr. Surachai Toaphicharttrakul as the person supervising accounting on August 1, 2013, who is professionally qualified in accordance with the Stock Exchange of Thailand's notifications. Mr. Surachai Toaphicharttrakul is currently the Account Manager. He received a Master's degree in Business Administration (Accounting for Planning and Control) from Kasetsart University and has passed training for continuous knowledge development in accounting for not less than six hours per year, in compliance with the requirements of the Department of Business Development's notification. (Mr. Surachai Toaphicharttrakul's professional profile appears under Executive Profiles on page 46).

Head of Internal Audit

The Audit Committee appointed Mr. Prasitsak Sawasduang as Manager of the Corporate Internal Audit Office and secretary to the Audit Committee during January 1, 2021 - December 31, 2022, to support the work of the Audit Committee, to hold a meeting for the Audit Committee including implementation in accordance with Audit Committee policy (Mr. Prasitsak Sawasduang's professional profile appears under Executive Profiles on page 49).

Head of Compliance

IRPC has assigned Miss Arisara Suthasut, Executive Vice President Office of Corporate Affairs to oversee corporate compliance to promote and facilitate oversight for corporate compliance, including ensuring that IRPC executives and employees and those of its subsidiaries abide by relevant laws and regulations (Miss Arisara Suthasut's professional profile appears under Executive Profiles on page 46).

Head of Investor Relations

IRPC has assigned Miss Kanyamas Rithidech as Manager of Finance and Investor Relations, responsible for coordinating investor relationships among companies and related parties such as shareholders, investors, business partners, internal audit, and mass media to convey information effectively while incorporating outside views and opinions would be a benefit.

Contact Investor Relations via one of the following channels:

- E-mail : @irpc.co.th
- Telephone : 0-2765-7380
- Fax : 0-2765-7379

Appointment and Remuneration of the Auditor

IRPC Public company Limited

The Audit Committee nominated EY Office Company Limited (EY) as the 2022 auditor for IRPC. The nomination was approved at the 2022 Annual General Meeting of Shareholders. EY is an independent auditor with a long-standing reputation. It has no relations and/or vested interest in IRPC, its subsidiaries, directors, executives, majority shareholder, or related persons. The audit fee for the year 2022 was 2,600,000 Baht, which was a decrease from 2021. This fee, however, did not include other accrued expenses, such as travel allowances, etc., but not exceeding 130,000 Baht, which were billed to IRPC according to customary practice.

Audit Fee (Unit: Baht)	2021 (Auditor: Deloitte)	2022 (Auditor: EY)
1. Audit Fee	3,100,000	2,600,000
2. Non-audit fee	600,000	None
	Fees for	
	1. Additional work to support the audit of large corporation's financial statements	

Subsidiaries and Joint Ventures

EY Office Company Limited "EY" also proposed the audit fee of 1,040,000 Baht for IRPC's five subsidiaries and two joint venture company.



Report on Key Corporate Governance Activities

Summary of the Board Performance in the Past Year

Nomination, Director Development and Board Performance Assessment

1. Nomination and Appointment of Directors and the Top Management

Independent Directors

Details about the company's independent directors, their duties and responsibilities appear under "Independent Director" on page 224-227.

Director Nomination

The Board's policy mandates that members of the Board of Directors must come from diverse backgrounds. Priority is given to needed competencies that will strengthen and complement the composition of the Board. Individuals with qualifications, experience, and expertise are considered

regardless of their gender, religion, or ethnicity. Further details on this matter appear under "Composition and Qualifications of the Board of Directors" on page 224.

As for the nomination of director candidates, IRPC considers suitable and deserving individuals. Both majority and minority shareholders, in addition to the Nomination and Remuneration Committee, have the right to propose director candidates. All nominations must be endorsed by the Nomination and Remuneration Committee and approved by the Board or shareholders (as the case may be). Details about the methods and procedures of director nomination appear under "Nomination and Remuneration Committee" on page 231-233.

Separation of Board Chairman and President/CEO

The Public Limited Company Act does not prohibit one person from simultaneously holding both the positions of Chairman of the Board of Directors and CEO. However, the Board's key roles and responsibilities are to determine directions of the company, formulate policies and monitor the management's performance. Having the CEO, who heads company's management team, to also chair the Board could give rise to dominance that undermines the

Board's ability to function effectively. Such arrangement could also result in the Board being blindsided by the CEO who may conceal vital information or present selective information, or exercising power as chairman to make decisions that benefit the management, etc.

To ensure good corporate governance and separation of powers for checks and balances, the Board of Directors of IRPC Public company Limited has mandated that its Chairman and CEO of the company cannot be the same person, and their roles are separate and distinct.

Further details about the duties and responsibilities of the Board chairman and the CEO appear under "Authority of the Chairman" on page 228 and "Duties and Responsibilities of the President and Chief Executive Officer" on page 236-237 respectively.

President and CEO Nomination and Succession Planning

The Board of Directors has tasked the Nomination and Remuneration Committee with nominating a qualified and capable individual for the office of the President. The nominee is presented to the Board for appointment. The President and CEO of the company also serves as a member of the Board in accordance with the company's regulations and legal procedures. The candidate must possess the necessary experience, knowledge and a profound understanding of the petroleum and petrochemical businesses, in addition to a good reputation, leadership, and a record of accomplishment of corporate governance compliance. Candidates for senior executive vice president positions must be subjected to scrutiny of the Nomination and Remuneration Committee and approval of the Board as well.

CEO Succession Planning According to IRPC's Succession Plan Management, IRPC senior executive vice presidents are selected to undergo the IRPC Group's executive development program. Upon completion, their leadership skills will be assessed by a top consultancy firm. The company will take into account the results of the assessment to further develop their potential. When there are upper management job openings, they will be nominated and appointed under applicable criteria and procedures.

Executive Succession Planning and Development

The Board of Directors charges the Nomination and Remuneration Committee with succession planning for N-1 and N-2 senior executive positions, preparing candidates for upper management positions. Succession planning also helps IRPC manage risks, ensure business continuity, and give top talents the incentive to grow with the company.

IRPC has a systematic executive succession plan in place and the Nomination and Remuneration Committee is kept up to date with periodic reporting on progress status. Succession planning refers to continuous processes of assessment and development to unlock the full potential of senior executive officers and get them ready to take on future challenges of consistently achieving strategic objectives and long-term goals of the company. This crucial undertaking is implemented in accordance with the following procedural steps:

1. Succession Planning
2. Criticality of Target Role
3. Prioritization of Target Group
4. Succession Readiness
5. Successor Candidate

2. Development of Directors and Executive Officers

The company firmly believes in continuing development of directors and executives by providing them with plenty of opportunities to grow professionally. In 2022, the following activities were implemented:

Director Orientation

In order for newly appointed directors to gain knowledge and understanding of the company's businesses and to assume the roles and responsibilities as the company's directors in accordance with the law and international corporate governance best practices. In 2022 the company made arrangement for newly appointed directors to attend a director orientation before the first Board meeting. The President and CEO always makes himself available to provide new directors with an introductory briefing,

and handed out information regarding organizational overview, rules and regulations, and various handbooks. In 2022, four new directors attended the orientation, namely (1) Dr. Siri Jirapongphan (2) General Aittipol Suwannarat. (3) Mr. Yordchatr Tasarika and (4) Mr. Prasong Intaranongpai.

Development of Directors and Executive Officers

IRPC encourages its directors and executive officers to partake in training programs that enable them to familiarize themselves with the company's management style, industry overview and roles and responsibilities of a director. Every director has attended the orientation (for further details please refer to Directors' Biographies on page 26-38).

In addition, in 2022, the company coordinated with the directors and executive officers to attend related training sessions as follows:

1. A narration on investment in new company provided by Mr. Manop Sangiambutr, Senior Executive Vice President Chief Financial Officer and Chief Finance & Strategy Officer, SCB X Public Company Limited.
2. Lecture by Dr. Amornthep Chawla, Research Director, CIMB Bank, on the direction of the global economy and an analysis of the impact of the Russian and Ukrainian conflicts (Investment Outlook amid Market Volatility and War in Ukraine).
3. Presentation by petrochemical and refining industry specialists from IHS Global (Thailand) Limited on the consequences and opportunities of policies linked to global warming and the Conference of the Parties, 26th seated of the United Nations Framework Convention on Climate Change (COP26).
4. Lecture on authority, duties and responsibilities of directors and executives By Mr. Weerawong Jitmittraphap, Senior Partner, Weerawong Law Firm, Chinawat and Partners.
5. Lecture on alternative energy (Green Hydrogen) by experts.

3. Board Performance Assessment and Performance Review of the President and CEO

Board performance assessment

In 2022, the Company has assessed the performance of the Board of Directors and bring the evaluation results to do a Directors Development Plan by using an assessment by an independent assessor from external party (Independent Assessment), which the Company has conducted every 3 years. In 2022, the company has assigned the PricewaterhouseCoopers ABAS Ltd. (PwC) Assessor who is the Independent Assessment of the Board of Directors' and Sub-Committees' performance by using the assessment process is efficiency, measurable and in line with international standards. The methodology that considers questionnaires and interview with the Board of Directors. We have brought the suggestions from the evaluation results to improve work efficiency of the Board of Directors to improve create transparency credibility as well as strengthening the governance with good corporate governance of the Company more solid by conducting in the form of a self-assessment and the interview is as follows:

1. The assessment forms as self-assessment:
 - 1.1 Self-assessment of the entire Board of Directors
 - 1.2 Self-assessment of individual directors
 - 1.3 Director's mutual performance assessment form (2-person cross assessment)
 - 1.4 Sub-Committee performance
2. The assessment in forms of Interview:
 - 2.1 Interview Chairman
 - 2.2 Interview head of Subcommittee (4 parties).

2022 Performance Assessment of the Board of Directors and Sub-Committees by external assessor (PwC)

1. Self-assessment of individual directors—the average score of every topic is assessed as “excellence”

Directors' Assessment	Assessment Score 2022 (%)
1. The entire Board of Directors	97.85
2. Self-assessment of individual directors	96.98
3. Director's mutual performance assessment form (2-person cross assessment)	98.75
4. Subcommittee performance	
4.1 Risk Management Committee	98.86
4.2 Audit Committee	96.51
4.3 Nomination and Remuneration Committee	98.06
4.4 Corporate Governance Committee	97.97

2. Form above assessment, scores for each topic can be distributed as follows:

- 1) Performance Assessment of the entire Board of Directors

Assessment topic	Assessment score (%)
Board Structures & Qualifications	97.10
Roles and Responsibilities	97.68
Meeting preparation and conduction	99.64
Training and Self-development	96.00
Total Score	97.85

- 2) Performance Assessment of Mutual Assessment of Directors (cross-assessment)

Assessment topic	Assessment score (%)	
	Self-Assessment	Cross-Assessment
Roles and Responsibilities	97.83	99.22
Meetings preparation and conduction	99.00	99.00
Relationship with Management team	95.56	97.78
Training and Self-development	94.33	97.00
Total score	96.98	98.75

3) Performance Assessment of Sub-Committee (4 units)

Assessment topic	Risk Management Committee	Audit Committee	Nomination and Remuneration Committee	Corporate Governance Committee
Committee Structure and Qualification	100.00	97.78	97.78	100.00
Roles and Responsibilities	99.00	96.36	97.62	98.57
Meetings preparation and conduction	98.67	95.56	100.00	97.78
Training and Self-development	96.00	100.00	93.33	86.67
Total score	98.86	96.51	98.06	97.97

Summary of 2022 Performance Assessment of the Board of Directors and Sub-Committees by external assessor (PwC)

The performance review of IRPC's the Board of Directors and Sub-Committees was assessed and scored at the average of 96.51%-97.85% comparing the standards of CORPORATE GOVERNANCE REPORT OF THAI LISTED COMPANIES (CGR) by Thai Institute of Directors (IOD), resulting in the evaluations for the "Excellence".

Performance Review of the President and CEO

The Board of Directors has stipulated that the performance review of IRPC's President and CEO shall be conducted annually by the Nomination and Remuneration Committee. The Board then determines the remuneration of the President and CEO based on the results of this review; however, these results are considered private and confidential that cannot be disclosed. The review criteria are based on the President's job components and goals. They reflect the president's performance in a tangible, transparent, fair, and commensurate with his responsibilities. The review consists of two parts:

Part 1: Four Corporate KPIs:

1. Financial Perspective
2. Stakeholder Perspective
3. Internal Process Perspective
4. Learning & Growth Perspective

Part 2: Three Sustainable Growth Factors

1. Leadership
2. Board of Directors' Assessment
3. Outstanding Management/Crisis Management

In 2022, the Board of Directors approved the President and CEO's performance review criteria at Board Meeting No. 4/2022 on March 15, 2022. In addition to challenging short-term strategic objectives and long-term goals, these criteria include key performance indicators relating to financial and non-financial outcomes. Having acknowledged these criteria, the President and CEO showed his remarkable business acumen, steering IRPC through these challenging times and achieved the predetermined goals. He demonstrated his outstanding leadership and overcame adverse impacts on the company and its stakeholders with decisive, well-executed actions to achieve success.

The President and CEO excelled at both parts of the review. Compensation for the President and CEO was comparable to his peers in the same or similar industries. The President, and CEO's compensation was reported as per criteria prescribed by the SEC Office in the management structure under "Executives' Compensation" on page 240.

Meeting attendance and remuneration of individual Board members Board and Sub-Committee Meetings

Board and Sub-Committee Meetings

The Board of Directors holds its meetings according to predetermined schedule covering the entire year, to address clearly defined regular agenda that have been fixed in advanced.

Together, the Chairman and the President and CEO determine agenda items based on a review of proposed topics. Directors are encouraged to propose matters for consideration. Notable issues that require regular attention appear on the agenda of each month, such as the progress status of an ongoing investment project and corporate performance. The Board also follows up on its previous decisions and resolutions to ensure that policies and strategies are properly executed.

Since 2017, IRPC has benefited from the Board Portal, which is accessible via the internet from computers, smartphones, and tablets. This online platform allows the Board to function more effectively. With Board Portal, Board members may access IRPC's essential documents, supporting documents for the Board and Board committees' meetings, materials for director development and learning programs, and a library containing current news and vital information for directors as well as searchable archive. Meeting invitations are sent out accompanied by agenda, along with background information (seven business days in advance to allow directors enough time to prepare for the meeting).

At every meeting, directors with personal stake or conflict of interest in an agenda item must disclose it and recuse themselves or abstain from voting on the item in question. In accordance with the Corporate Governance Policy, the Chairman provides ample opportunities for directors to express their opinions freely. All questions are answered and clarified before a vote is called. The Board's resolution is passed by a simple majority, or in the case of a special

resolution (as per IRPC's regulations) is passed by at least two-thirds of all directors present. Meeting minutes cover directors' opinions and observations. Minutes are presented to the Board at the next meeting for review and approval. Once approved, minutes and relevant documents are electronically stored and classified for reference that can be accessed by authorized persons according to their level of security clearance.

In 2022, the Board of Directors held 17 meetings, physical as well as e-meetings, consisting of two physical meeting and 11 e-meetings, and four of both physical and e-meetings. Of these, one a was held to determine or review the direction, strategy, and business plan of the organization (BOD-STs) as a special agenda, two meetings were held among independent directors, and one was a Board of Directors meeting in the absence of the management. In keeping with corporate governance principles, directors gave suggestions that were beneficial to the company, and freely discussed the management's work. The Board meeting requested the management to take suggestions and recommendations for consideration or implementation, and report back to the Board periodically.

At the meetings of independent directors (on May 17, 2022, and October 18, 2022), topics discussed included IRPC's research and development, production efficiency planning, marketing planning and logistics planning, organizational potential development, business planning and environment planning, for example.

Meeting of the Board of Directors in the absence of the management (on July 25, 2022) covered a range of topics of great potential benefits to IRPC, such as future business plan, Petroleum marketing, asset management, Compliance with standards and regulations, and human resource management to develop future-proof skill sets for growth amid changing trends in the years ahead etc.

The Board as a whole attended 98 per cent of its meetings in 2022. Individual directors attended an average of more than 82 per cent of the meetings (82-100 per cent) The table below summarizes the attendance rates of the Board of Directors and Sub-Committees:

Meeting Attendance of the Board of Directors and Sub-Committees in 2022

(Unit: times)

Name	Board of Directors	Board without Executives	Independent Directors	Audit Committed	Risk Management Committee	Nomination and Remuneration Committee	Nomination and Remuneration Committee	2022 Shareholders Annual General Meeting	
	(15 members) Number of meetings: 17	(14 members) Number of meetings: 1	(7 members) Number of meetings: 2	(3 members) Number of meetings: 11	(5 members) Number of meetings: 14	(3 members) Number of meetings: 6	(3 members) Number of meetings: 11	(15 members) Number of meetings: 1	
1. Dr. Siri Jirapongphan	12/12	1/1	-	-	-	-	-	-	
2. Mr. Somnuk Bomrungsalee	17/17	1/1	2/2	11/11	-	-	-	1/1	
3. Dr. Anusorn Sangnimnuan	17/17	1/1	2/2	-	14/14	-	-	1/1	
4. Mr. Supot Laosuarpha	17/17	1/1	-	-	-	6/6	-	1/1	
5. Miss Siriwan Chierapong	17/17	1/1	2/2	11/11	-	-	-	1/1	
6. Mr. Jumpol Sumpaopo	17/17	1/1	2/2	10/11	-	-	-	1/1	
7. Dr. Ekniti Nitithanprapas	17/17	1/1	-	-	13/14	-	-	1/1	
8. Miss Piangpanor Boonklam	16/17	1/1	-	-	14/14	-	-	1/1	
9. Mr. Prasong Intaranongpai	1/1	1/1	-	-	1/1	-	-	-	
10. Asst. Prof. Dr. Chaiyaporn Puprasert	17/17	1/1	2/2	-	-	6/6	-	1/1	
11. General Aittipol Suwannarat	12/12	1/1	2/2	-	-	5/5	-	-	
12. Mr. Chansak Chuenchom	14/17	1/1	-	-	7/10	-	6/6	1/1	
13. Mr. Petai Mudtham	15/17	1/1	-	-	-	-	10/10	1/1	
14. Mr. Yordchatr Tasarika	12/12	1/1	2/2	-	-	-	6/6	-	
15. Mr. Kris Imsang	15/15	-	-	-	-	-	1/1	1/1	
Directors who retired and resigned in 2022									
16. Mr. Woothisarn Tanchai ⁽¹⁾	5/5	-	-	-	-	-	4/4	1/1	
17. Air Marshal Boonsuib Prasit ⁽²⁾	5/5	-	-	-	-	1/1	-	1/1	
18. Mr. Sukrit Surabotsopon ⁽³⁾	5/5	-	-	-	3/3	-	-	1/1	
19. Mr. Chawalit Tippawanich ⁽⁴⁾	14/14	-	-	-	11/11	-	-	1/1	

Notes: ⁽¹⁾ Mr. Woothisarn Tanchai, independent director, completed his term on April 5, 2022

⁽²⁾ Air Marshal Boonsuib Prasit, independent director, completed his term on April 5, 2022

⁽³⁾ Mr. Sukrit Surabotsopon, independent director, completed his term on April 5, 2022

⁽⁴⁾ Mr. Chawalit Tippawanich, director resigned effective September 30, 2022

Individual Directors' Compensation

The Board of Directors has appointed the Nomination and Remuneration Committee to determine compensation guidelines for the Board and Board committee members. The compensation guidelines proposed to the Board are as follows:

1. Directors' compensation shall consist of two components: 1) monthly cash retainer and 2) meeting allowance.
2. Directors' compensation amounts shall be based on their respective directors' responsibilities and performance and IRPC's operating results. They shall be comparable to those of their peers in companies of similar size and business risks, in order to attract and retain directors whose qualifications suit the company's business needs. The compensation survey of the Thai Institute of Directors (IOD) and the Stock Exchange of Thailand shall also be taken into account.
3. The scope of duties and responsibilities of the Board and Board committees shall also be considered.
4. The compensation amount for the Board Chairman and Sub-Committee chairpersons shall be approximately 30 per cent higher than that of a director.
5. Members of Board's committees: the Audit Committee, Nomination and Remuneration Committee, Risk Management Committee, and the Corporate Governance Committee, shall be entitled to meeting allowance based on the actual number of meetings they attend.
6. Compensation for the Board and its committees shall be subject to the approval of shareholders at the AGM. According to the Director pay Survey Report 2020 by Thai Institute of Directors (IOD), published in December 2020, the proposed compensation packages for 2022 are approximately equivalent to the "mean" of monthly income/person. The resulting compensation packages for the Board of Directors and its committees were submitted to the Annual General meeting of Shareholders (AGM), and it was resolved to consent to them, which were the same amounts offered in 2021, as follows:

Directors Monthly	Compensation/ Person	Meeting Allowance/ Person
1. Board of Directors		
Chairman	60,000 Baht	60,000 Baht
Director	45,000 Baht	45,000 Baht
2. Sub-Committees: Audit Committee, Nomination and Remuneration Committee, Risk Management Committee, Corporate Governance Committee, and other committees that may be appointed by the Board in the future		
Chairman	None	60,000 Baht
Director	None	45,000 Baht

Director Bonuses

The Nomination and Remuneration Committee also proposed director bonuses, which were based on IRPC's performance. In 2021, as IRPC proposed bonuses be awarded based at the amount of Baht 44 million, and the Board of Directors approved the proposal. At the AGM 2022, held on April 5, 2022, shareholders voted to award directors bonuses based on the 2021 operating results at the amount of Baht 44 million. The compensation of individual directors is detailed in the table below.

2022 Compensation of Individual Directors						
(Unit: Baht)						
	Name	Compensation	Meeting allowance for Board of Directors	Meeting allowance for Sub-Committees	Bonus	Total
1.	Dr. Siri Jirapongphan	532,000	720,000	-	-	1,252,000
2.	Mr. Somnuk Bomrungsalee	540,000	765,000	660,000	3,048,499	5,013,499
3.	Dr. Anusorn Sangnimnuan	540,000	765,000	840,000	3,048,499	5,193,499
4.	Mr. Supot Laosuarpha	540,000	765,000	345,000	2,438,799	4,088,799
5.	Miss Siriwan Chierapong	540,000	765,000	495,000	3,048,499	4,848,499
6.	Mr. Jumpol Sumpaopo	540,000	765,000	495,000	3,048,499	4,848,499
7.	Dr. Ekniti Nitithanprapas	540,000	765,000	585,000	2,845,266	4,735,266
8.	Miss Piangpanor Boonklam	540,000	720,000	630,000	2,845,266	4,735,266
9.	Mr. Prasong Intaranongpai	45,000	45,000	45,000	-	135,000
10.	Asst. Prof. Dr. Chaiyaporn Puprasert	540,000	765,000	270,000	2,438,799	4,013,799
11.	General Aittipol Suwannarat	399,000	540,000	225,000	-	1,164,000
12.	Mr. Chansak Chuenchom	540,000	630,000	600,000	609,700	2,379,700
13.	Mr. Petai Mudtham	513,871	675,000	450,000	-	1,638,871
14.	Mr Yordchatr Tasarika	399,000	540,000	270,000	-	1,209,000
15.	Mr. Kris Imsang ⁽¹⁾	554,500	750,000	150,000	3,963,049	5,417,549
16.	Mr. Woothisarn Tanchai	142,500	225,000	240,000	3,048,499	3,655,999
17.	Air Marshal Boonsuib Prasit	142,500	225,000	60,000	3,048,499	3,475,999
18.	Mr. Sukrit Surabotsopon	142,500	225,000	135,000	2,845,266	3,347,766
19.	Mr. Chawalit Tippawanich	403,500	630,000	495,000	3,048,499	4,576,999
Total		8,134,371	11,280,000	6,990,000	39,325,635	65,730,006

(No other compensation or benefit were paid to directors, monetary or otherwise)

Note: ⁽¹⁾ Mr. Kris Imsang reimbursed his compensation to PTT Public Company Limited compliance with the PTT's President Employment Agreement

Supervision of Subsidiaries and Associated Companies

Supervisory Mechanisms

In addition to corporate governance oversight under the leadership of IRPC President and CEO and other senior executive officers, the company's Board of Directors oversees the management of subsidiaries, associated companies and joint ventures through IRPC representatives whom the company nominates, with the IRPC Board of Directors' approval, to serve as directors or executives of these companies. (Further details on this subject appear in "Shareholding Structure" section (Page 89). The decisions on significant investments and business decisions that these representatives make require the approval of the Investment Board, the Executive Board, or the Board of Directors, as the case may be. These representatives must also submit progress reports to the Board of Directors periodically.

In order to rationalize the management and supervision of subsidiaries in a more transparent manner and ensure they are systematically in alignment with IRPC's key policies, IRPC announced the IRPC Group Way of Conduct Policy on August 4, 2021. The company also introduced IRPC Group Way of Conduct Handbook to establish IRPC's Governance Principles consisting of:

1. Determination of main job positions for executives and employees to work (Key Strategic Position).
2. Preparation of regulations, rules, requirements and policies (Rules and Regulations) including various directives to establish a linkage among supervision regarding the company's policy and bringing Policy to achieve results.
3. Reporting Line and Performance Management
4. Multi-level Governance with the IRPC group operates a variety of businesses and has different complexity, therefore, in order to manage the group IRPC goes in the same direction, is clear and has systematically linked. Therefore, the management guidelines have been designed the Management in a hierarchical governance style or Multi-Level Governance by relying on the cooperation mechanism of the companies in the

group. IRPC results in the same standard of operation and achieve business objectives in a sustainable manner based on of the value of the organization "iSPIRIT".

5. Management Committee both at the board level and management level, such as the Good Corporate Governance Committee, Management Committee (Management Committee: MC), including specific committees regarded as a part important in driving group management IRPC to achieve effective results.

Monitoring Corporate Governance Policy Compliance and Practices

1. Supervision of the use of insider information

IRPC emphasizes the need to control how insider information of the company and its subsidiaries is used as part of our commitment to equitable treatment of shareholders. The company has set a policy to prevent insider trading and imposed the blackout period. This is in order to control non-public price sensitive information, and to prevent directors, executives, employees, and related persons from using information that has not been disclosed to the SET or general public, for personal gain or to benefit others, directly or indirectly. The guidelines on this matter are summarized below:

- (1) Directors, executives (according to the SEC Office's definition), employees who have access to insider information (those working in accounting, finance, company secretary, Internal Audit Office, investor relations, corporate strategy, investment management, risk management, and Office of Corporate Affairs) are prohibited from trading in IRPC's securities for a period of 30 days prior to and within 48 hours of public disclosure of the quarterly or annual financial statements. The company secretary shall make advance announcement regarding persons who are subject to the Blackout Period.
- (2) IRPC's directors and executives wishing trade in the company's securities have a duty to notify the company secretary at least one day prior to such engaging in such transaction. In case the company secretary wishing to trade in the company's securities, he or she must notify the chairman of the Board of Directors or the President and CEO accordingly.

- (3) Directors, executives (according to the SEC Office's definition) and auditors of the company have a duty to prepare and disclose reports on changes in securities holdings of themselves, their spouse, and minor children, in accordance with the rules and procedures prescribed by the SEC Office within three business days from the date of purchase, sale, transfer, or acceptance of transfer of such securities.
- (4) Directors and executives (according to the SEC Office's definition) must report changes in their interests and their personal background information in accordance with the reporting procedures for personal interest declaration within seven business days from the date of such changes. The report must be submitted to the company secretary for examination by the chairman of the Board of Directors and chairman of the Audit Committee.

2. Conflict of Interest Prevention

IRPC requires that its directors, executives, and employees, as well as those of its subsidiaries, joint ventures, and companies in which IRPC has controlling stake, disclose any potential conflict of interest in any transaction of IRPC or the IRPC Group, using the specified method. Disclosures enhance operational efficiency, governance and management excellence, ethics, freedom from corruption, transparency, and accountability.

Conflict of Interest Report

IRPC mandates that all IRPC Group executive officers and employees must report all their (potential) conflicts of interest with the company to the Corporate Governance Committee. This is the 8th year report done via online system (since 2015). This is in addition to disclosing its directors' and executives' conflicts of interest according to the regulations of the SEC Office to promote transparency and anti-corruption operational mindset. In 2022,

The company saw a 100 per cent adoption of the online reporting system from executives and employees across all levels.

Reporting Conflict of Interest of Directors, Executives and Related Persons

Every director submits a conflict of interest report, which the board uses as the basis for the supervision of its members' conflicts of interest. Every senior executive officer prepares a similar report annually. The company secretary files these away after presenting their copies to the chairman of the board and the chairman of the Audit Committee, who use them to oversee matters of conflicts of interest.

3. Reporting Securities Holding

To supervise the use of insider information, it is mandatory for Board members and executive officers, including their lawful spouse, cohabiting partners, and underage children, to report any changes in their holding of IRPC securities to the company, the Stock Exchange of Thailand, and the Office of the Securities and Exchange Commission in accordance with Section 59 of the Securities and Exchange Act B.E. 2535 and any ensuing amendments, within three business days from the date of the transaction. Moreover, the company's policy requires Board members and executives to disclose/report/purchase/sale/transfer/changes in holdings of IRPC securities to the Board at the monthly Board meeting. Such reporting requirement is an integral part of every board meeting's agenda.

The company has never been warned of such matters from the regulators and in 2022 Board members collectively held less than 25 per cent of the company's issued shares, in compliance with regulations of the Stock Exchange of Thailand.

4. Connected Transactions Related/Connected Transactions Policy

IRPC and its subsidiaries operate an integrated petrochemical and refining business, belonging to the same industrial sector as the PTT Group. Transactions between IRPC and other companies within the PTT Group are conducted on arm's length basis, from the exchange of crude oil and petrochemical products, related services, and other activities that support each other's day-to-day operations. The prices and terms and conditions of these transactions are no different from those agreed upon with companies outside the PTT Group. There is no transfer of mutual benefits. IRPC examines every connected transaction carefully, rationally, and independently, in its own best interest.

Measures for Related/Connected Transactions

IRPC complies with the regulations of the Securities and Exchange Commission and Stock Exchange of Thailand regarding connected transactions. The Board of Directors appropriately considered the items that may give rise to conflicts of interest to ensure that the transaction is fair, transparent, and reasonable. The directors, employees, or any person with conflicts of interest are not allowed to attend the meeting or vote on that agenda. In addition, the Audit Committee is also responsible for the review and audit of connected transactions made between the company, its subsidiaries, and related persons or companies on a quarterly basis. The objectives are to eliminate conflicts of interest that might occur and ensure the best interests of the company.

Policy on Future Connected Transactions

IRPC's future connected transactions will be normal business transactions. The company bases its decisions primarily on reasonable and fair pricing. This is to ensure shareholders and all stakeholders receive fair and equitable treatment in accordance with the Corporate Governance Policy, in compliance with the regulations of Office of the Securities and Exchange Commission and the Stock Exchange of Thailand on connected transactions.

5. Whistleblowing

IRPC Board of Directors has established the Whistleblowing Policy by providing channels for whistleblowing and receiving complaints from internal and external whistleblowers. The company accepts submissions about any activity that violates the law or code of conduct, or any corrupt practice or inappropriate conduct of any person at any level, from directors, executive officers to employees of IRPC or subsidiaries, stakeholders, or parties related to IRPC's businesses. The policy also clearly specifies the investigation procedures to ensure impartiality and transparency. All whistleblowers and witnesses will be offered protection. With the goal to improve compliance with good corporate governance principles and international standards, IRPC has enhanced the rules on complaints and whistleblowing for IRPC Public Company Limited and its companies (IRPC Group) as of 2022.

Whistleblowing and Complaint Channels

- E-mail: auditor@irpc.co.th
- Mail: Chairman of the Audit Committee
IRPC Public Company Limited
555/2 Energy Complex, Building B,
Floor 6th, Vibhavadi Rangsit Road,
Chatuchak, Chatuchak, Bangkok
10900
- Postal Office: PO Box 35, Sun Tower Building
Postal Office, Bangkok 10900
- Website : www.irpc.co.th
- Supervisor/Manager

Action when collect the complaints

Our policy has determined to follow this procedure.

- When receiving a complaint according to the methods and channels specified by the Company to submit such complaints to the internal audit office by The Internal Audit Office will initially record the information and consider it. If it is not related to a corruption, it will be forwarded to the Compliant Screening Committee.

- Complaint Screening Committee consider screening matters and make a preliminary complaint with collect or seek additional evidence for consideration of complaints. Including preparing a report to present to the Chief Executive Officer and President and/or relevant committees; and inform the complainant about the status of the operation according to the criteria specified by the Company.
- If it is a complaint about corruption, the Internal Audit Office is responsible for taking action and follow up, collect the information, which might be violating the company's code of conduct, in order to report directly to the Audit Committee and the Board of Directors.

In 2022, the Internal Audit Office receives the complaints according to the methods and channels as follows:

Period	Channel				Type		Investigation		Case	
	E-mail & Mail	Po Box 35	Website	Supervisor	- Operation, - Behavior, - Suggestion	Corruption	Complete	Under Investigation	Complete	Pending
1 st Quarter	-	-	-	-	-	-	-	-	-	-
2 nd Quarter	1	-	-	-	-	1	1	-	-	1
3 rd Quarter	-	6	-	2	7	1	8	-	7	1
4 th Quarter	-	-	-	2	1	1	1	1	-	2
Total	1	6	-	4	8	3	10	1	7	4

6. Digital Execution

Digital is one of the key success factors that will help the company can move forward in a new business efficiently. The Company's Digital Framework (IRPC's Digital Framework) focus on 2 main topics:

- Cyber Security focuses on strengthening to prevent cyber-attacks to ensure that the company able to operate safely using the conceptual framework and ISO 27001 Cyber Security Standards with NIST Cyber Security Framework principles.
- Data Analytic aims to develop and increase the efficiency of analytics and making a decisions of employees at all levels, resulting in the company's income.

In addition, the company is aware of the security of digital work systems and the Company's information technology system, as a result, the company has set proactive and implementing digital risk management as follows;

- Data and information security: The company has been certified ISO 27001: Information Security Management System, which is a security management system standard information security.
- Conduct disaster recovery in case of a system failure (Disaster Recovery Plan), which may be caused by external attacks, equipment is damaged or various disasters annually every year.
- There is a Security Operation Center (SOC) that is efficient and constantly improving.
- Prepare a manual for IT operations in response to cyber incidents and organize training to educate employees on how to use computer accessories and software safely.

Details of digital operations are in the topic report "Digital Transformation of Organizations" on page 121-129 and "Risk Management" on page 94-98.

Corporate Governance Compliance in Other Matters

Anti-Corruption

IRPC operates its business with integrity, adheres to its code of conduct and follows the law and international anti-corruption and anti-bribery best practices. The company endeavors to eliminate corruption, bribery, and coercion in all forms by building knowledge and promoting understanding in the matters among personnel at all levels as well as throughout the supply chain. The company also set up convenient, appropriate channels to receive complaints along with efficient complaint handling process. IRPC has implemented and continued to refine its anti-corruption measures as follows:

- The Board of Directors has set out concrete anticorruption policies and practices, such as anti-graft, anti-corruption, anti-bribery policies, no-gift policy. These policies apply to every person at every level of IRPC and the IRPC Group. Training and occasional campaigning are used to raise awareness. These policies are published on the company's website and via other communication channels. Additionally, the Board of Directors endeavors to expand the IRPC anticorruption network to include stakeholders, such as other IRPC Group companies, joint-venture partners, and contractors. The company's anti-corruption practices have been disclosed to all its partners. Many of these activities have been ongoing between 2016 and 2022.
- The Audit Committee includes corruption risk management and assessment on its corporate internal audit agenda. The committee also requires corruption risks to be controlled, monitored, assessed, and reported to the Board on a regular basis. Details of anti-corruption activities in 2022 appear under "Creating Corporate Governance Awareness and Mindset in 2022" on page 215-217.



Human Rights

The Company respects and treats employees, communities, and related parties in the supply chain in accordance with international human rights principles and human rights law. The company affords freedom and equality to individuals, which are guaranteed and protected by Thai and international laws. It never violates or conspires in the violation of human rights, directly or indirectly. IRPC respects human dignity and provides equal opportunity regardless of ethnicity, religion, faith, gender, skin color, disability, or social status.

The Board of Directors has announced the latest Human Rights Policy of IRPC Group, the 2021 revised edition, already disclosed on the company's website, to ensure that the company's business operations are free from human rights violations in all aspects. In addition, strategies have been developed to integrate respect for human rights into the value chain. The key words for this campaign are Protect, Respect and Remedy, which will be implemented through communication, awareness campaigns, and networking activities.

The company has extended human rights protection to its own employees and those of contractors to ensure full compliance with labor law, decent working conditions and appropriate welfare benefits in accordance with the company's regulations. The same safety training and safety measures apply to IRPC's employees and those employed by the contractors. Safety handbook will be issued during factory maintenance to ensure safety measures are strictly observed by external personnel and visitors. Safety units shall submit situation reports covering regular working hours and after hours, along with complaints relating to environmental impact on communities at the Management Committee on a weekly basis so that decisions can be made to prevent, mitigate, or remedy problems appropriately and in a timely manner as well as to prevent recurrence.

IRPC conducts due diligence to assess the risks associated with human rights, for which company has already addressed adequately. In addition, there are community and environmental risk assessment processes and appropriate remedial processes in they are adversely impacted by the company's activities. This includes a round-the-clock complaint receiving channels and on-call personnel that can be dispatched to investigate incidents and address the situation. Information on activities that may potentially impact communities will be disclosed to the public prior to and while they are underway.

Thanks to its dedication to human rights issues and regular activities, IRPC was awarded the title of the Private Sector Winner of the Human Rights Role Model Organization for the third consecutive year. Details of 2022 human rights activities appear under "Creating Corporate Governance Awareness and Mindset" on page 130-135.

Further details about the Human rights management appear on the company's website <https://www.irpc.co.th/sustain/>.

Labor

The Company respects fundamental rights and personal freedoms under Thai labor laws and conventions of the United Nations International Labor Organization. Its treatment of employees conforms to labor laws. It encourages employees to exercise their freedom of association as per labor relations law and complies with relevant government regulations. IRPC never uses its power to coerce employees to enter into an agreement that deprives them of their fundamental labor rights, and never engages in the use of illegal labor. Moreover, the company complies with the Convention on the Elimination of All Forms of Discrimination against Women and UNICEF's Children's Rights and Business Principles. Furthermore, employment at IRPC is free from discrimination regardless of ethnicity, religion, gender, or skin color. The company promotes equal opportunity and decent work, liberty, and human dignity.

Environment

Through the company's environmental protection measures and guidelines, IRPC expresses its firm commitment to environmental stewardship and to prevent any environmental impact that its operations may cause. The company conducts an environmental impact assessment before investing in a project or business. It applies appropriate technologies to bolster its environmental protection measures and methods. The company also encourages the development of eco-friendly innovations and technologies. IRPC always promotes awareness of environmental stewardship, occupational health and safety for employees and the entire supply chain. Details of environmental activities appear under "Sustainability Management in Environmental Dimensions" on page 148-169.



Internal Control and Connected Transactions

Internal Control

The Board's views on the internal control system

IRPC Public Company Limited has implemented internal control in accordance with the internationally-accepted COSO Internal Control - Integrated Framework to achieve objectives in 3 areas: Operations, Reporting, and Compliance. The management and the internal control unit have created an internal control assessment form in accordance with the rules prescribed by the Securities and Exchange Commission (SEC) as well as reviewed and given opinions on recommendations made by the Audit Committee before reporting to the Board of Directors at Meeting No. 10/2022 of November 8, 2022, also attended by independent directors and the Audit Committee. The Board was of the opinion that the Company's internal control system was sufficient and appropriate, and no significant deficiencies detected that could compromise the ability of the internal control system to achieve its objectives. The Company has put in place appropriate procedures and competent personnel to ensure efficient and effective implementing internal control, accurate and reliable reporting, and conduct businesses in full compliance with relevant laws and regulations. That is to safeguard the Company and its subsidiaries' assets against fraud or abuse by directors, executives, or employees as well as to prevent transactions with potential conflicts of interest involving related parties.

The Company's internal control system has undergone constant revision and updating to correspond with changing external and internal contexts. In 2022, the Company further developed its internal control system and summarized internal control outcomes for publication in its annual report in accordance with COSO (The Committee of Sponsoring Organizations of the Treadway Commission) framework, which consists of five internal control components as follows:

1. Control Environment

The Board and the management promote a corporate culture that nurtures talent, courage, and integrity of the Company's employees. This not only enables the Company to align business operations effectively and sustainably to its vision and mission, but also to foster business ethics and corporate governance through the establishment of sound and appropriate internal control environment as follows:

The Board and the management have set good corporate governance policy, compliance policy, internal control policy (revised), anti-corruption policy, personal data privacy (PDPA) policy, and code of conduct, requiring employees at all levels to submit conflict of interest declaration form electronically every year. There is also ethics self-assessment form for executives and employees to complete, along with the introduction of corporate governance handbook (revised edition), prescribing best practices in various fields that executives and employees must sign to acknowledge, uphold, and implement.

The Board, independent from the management, is tasked with overseeing the Company's overall business operations and giving opinions on the strategic direction underpinning the business and operational plans as well as monitoring the Company's operating results and the performance of directors on a regular basis to ensure corporate objectives are met.

IRPC organizes itself along the business group and business function structures to enable efficient corporate management focusing on the unwavering strategic direction of the entire group of companies. Segregation of duties in critical functions is designed to ensure checks and balances. In addition, approval authority regarding the Company's business operations and transactions is subject to review on a regular basis. The Company also formulated an overall short- and long-term human resource development plans with clearly defined qualifications for individual positions and put in place succession planning and implemented Leadership Development Program. Systematic and standardized performance assessment

process was established, together with regular performance monitoring to ensure fair rewards that provide incentives for employees to discharge their duties effectively.

IRPC has adopted the internationally accepted “Three Lines of Defense model” of enterprise risk management and sound internal control. Staff and managers (First Line), internal control unit, compliance unit and other auxiliary units (Second Line), and the Office of Corporate Internal Audit (Third Line) are required and encouraged to apply the model continuously and consistently, from risk identification and determination of control activities to risk monitoring and assessment. In this regard, the First Line of Defense plays the most crucial role in ensuring success and efficiency of internal control.

2. Risk Assessment

The Board and the management attach foremost importance to risk management to build confidence and provide assurance as to the achievement of the Company's short and long-term goals. The Risk Management Committee (RMC) and Risk Management and Internal Control Committee (RMCC), established by the Board, are chaired by the Chief Executive Officer and the President, respectively. These committees provide oversight for appropriate and effective risk management and internal control as well as strict implementation of enterprise-wide risk management under the following management approaches:

IRPC has adopted ISO 31000 (2018) and COSO Enterprise Risk Management (2017) and formulated a risk management policy to provide guidelines for the management of risks that could potentially threaten the Company's ability to achieve its objectives, which Risk Appetite Statement is completely set in 2022. Such risk management approaches comprise corporate risk management, functional risk management as well as project risk management, considering the corporate goals, changing internal and external factors, including opportunity for fraud and corruption. Such enterprise risk management standards, as a part of all units' responsibility, also provide risk management approaches, coupled with risk review process and performance monitoring of risk management plan implementation on a regular basis to ensure risks stay at acceptable levels.

The Company requires the submission of a quarterly summary report on enterprise risk management to the Risk Management and Internal Control Committee, and a monthly enterprise risk management report to the Risk Management Committee. For functional risk management, a summary report is required at respective line/functional team meetings. For Star KPI-aligned & risks, a quarterly summary report on KPIs and risk management is required at the VP meeting.

IRPC has adopted the Business Continuity Management System (BCMS) in accordance with ISO 22301 (2019) to enable the Company to conduct contingency planning and respond effectively to emergency situations to ensure business continuity, mitigate impacts, and preserve the corporate public image and reputation.

3. Control Activities

IRPC has put in place effective control activities with a view to establish sound internal control to minimize risks that threaten the Company's ability to achieve its objectives. Such control activities include creation of rules, policies, regulations, handbooks, and procedures in written form, defining managers' scope of authority and duties and employees' job descriptions at each level, along with determination of authority to approve business transactions, and regular operational reviews to ensure compliance with rules, policies, regulations, and operational handbooks. In addition, the Company has formulated policies and guidelines regarding roles and responsibilities, and transactions with actual or potential conflicts of interest to ensure transparency, accountability, and fairness of all transactions and to ascertain that they are approved in the best interests of the Company.

IRPC has implemented Continuous Control Monitoring System (CCMS) for purchase/procurement and payments as well as sales and receipts as a tool to effectively monitor business operations and detect irregularities, in line with the segregation of duties concepts.

IRPC has developed the Control Self-Assessment (CSA) form to cover its key operations, such as the enterprise-wide internal control self-assessment form and process-specific internal control self-assessment form. These self-assessment forms help executives develop comprehensive and broad-based approach to control activities to minimize risks in various operational processes.

IRPC has established Project Governance guidelines to improve efficiency and effectiveness of project management by requiring relevant committees and business units to thoroughly review information on investment projects at all stages of implementation, with regard to risk assessment and risk management approaches. The Company is also developing IRPC Way of Conduct to provide oversight, supervision, and monitoring of companies within IRPC Group. This year, the Company announced the IRPC Group's management policy.

IRPC achieved ISO 27001 certification for information security management to provide assurance of the Company's efficient and effective IT security management.

The Company has developed Personal Data Privacy Policy, appointed a working group and data protection officer as well as upgraded its IT system to enhance its personal data control process, including alerting relevant members of the staff to the Personal Data Privacy Act (PDPA) now in force.

4. Information & Communication

IRPC values quality information and communication which are key components supporting effective internal control. An E-Compliance system has been developed to collect information with regard to laws, rules, regulations, and relevant requirements as well as compliance assessment system. The E-Compliance system is launched in 2022 and is currently being developed for better effectiveness. Progress in the project implementation will be communicated to the Company's Board of Directors, executives, employees, and stakeholders as appropriate. Meeting agenda will be delivered to members of the Board prior to the Board meeting, so they can prepare for decision-making.

The Company has announced policy and an integrated approach to Governance, Risk Management/Internal Control and Compliance (GRC), which will be communicated to raise awareness among employees about GRC implementation guidelines and how to apply it in the line of their duties to ensure efficiency, transparency, and compliance.

IRPC has provided internal communication channels, which consist of communication from the top management to employees through Town Hall events, communication via corporate intranet, communication via electronic mail, and communication via Line group. External communication channels for stakeholder engagement consist of SMS,

Line group, electronic mail, Facebook page and corporate website. There are also units dedicated to regular information disclosure to stakeholders as well as complaint-handling channels and Whistleblower system to assure employees and external persons that their complaints will be handled in a transparent, honest, fair, and timely manner, while being kept confidential.

5. Monitoring Activities

IRPC has established a process for monitoring and assessing the adequacy of internal control along with guidelines to further improve and enhance the efficiency and effectiveness of the Company's internal control system. Executives at all levels are charged with the duty to provide oversight and monitor work systems under their respective purviews to ensure efficiency and strict compliance with applicable policies, rules, and regulations.

Internal control unit of Corporate Strategic and Sustainability Planning Department is tasked with assessing the adequacy and suitability of internal control system while providing advice on how to improve or remedy internal control deficiencies that have been detected. IRPC imposes reporting requirements for any internal control deficiency detected so that the management is alerted in a timely manner, along with monitoring process to ensure any remedial measure taken is effective and completed on time.

The Office of Corporate Internal Audit, an independent unit reporting directly to the Audit Committee, is tasked with reviewing, and assessing internal control effectiveness for various activities under audit plans approved by the Audit Committee. These plans align with IRPC's strategic direction and critical risks facing the Company's businesses. The office also provides recommendations for improving internal control efficiency and effectiveness by informing the management of remedial actions, reporting to the Audit Committee findings and the progress of remedial actions to completion.



(Dr. Siri Jiramongphan)

Chairman

IRPC Public Company Limited

Connected Transactions

For the fiscal year 2022, the IRPC and its subsidiaries engaged in key connected transactions with related companies or parties. These transactions were based on market prices, or, in the absence of market prices, the prices agreed upon at fair prices and conditions. The relationship and connected transactions are described below:

No.	Connected Party/Relationship	Transaction	Unit (Million Baht)			Nature and Condition
			2022	2021	2020	
1	PTT Plc (PTT) Relationship: - IRPC's major shareholder with 45.05% shares - PTT Management on IRPC Board of Directors Mr. Kris Imsang Miss Peangpanor Boonklum Mr. Chansak Chuenchom Mr. Prasong Intaranongpai	- Sale of goods	883	192	593	- IRPC sold petroleum products and provided tank storage service to PTT
		- Purchase of goods	242,353	166,119	103,029	- IRPC purchased crude oil and natural gas from PTT and received compensation from selling and buying crude oil and products within PTT group
		- Other income	9	5	75	- IRPC received logistics compensation and personnel expenses from PTT
		- Sales & admin expenses	87	41	46	- IRPC paid personnel expenses to PTT
		- Interest payables	2	-	3	- IRPC paid short-term loan interest (ICBL) to PTT
		- Account receivable	860	19	542	
		- Accounts payable	31,116	24,503	21,674	
		- Other receivables	611	2,789	1	
2	PTT Oil and Retail Business Plc (PTTOR) Relationship: PTT Plc holds 75.00% shares	- Sale of goods	42,010	32,681	24,102	- IRPC sold petroleum products to PTTOR.
		- Purchase of goods	135	163	13	- IRPC purchased lubricant products from PTTOR.
		- Other income	-	-	1	- IRPC received income for decorating Cafe' Amazon outlets.
		- Sales & admin expenses	2	2	-	- IRPC Oil Co., Ltd. and IRPC Technology Co., Ltd. paid royalties and marketing fees for sale of goods and transportation expenses to PTTOR.
		- Accounts Receivable	2,496	1,993	1,619	
		- Accounts Payable	10	13	-	

No.	Connected Party/Relationship	Transaction	Unit (Million Baht)			Nature and Condition
			2022	2021	2020	
3	Thai Oil Plc (TOP) Relationship: PTT Plc holds 45.03% shares	- Sale of goods - Service income - Trade in crude and feedstocks for legal reserves - Purchase of goods - Other income - Account receivable	550 - - - - -	- 42 571 34 3 -	- 118 - - - 11	- IRPC sold petroleum products to TOP - IRPC provided tank storage service to TOP - IRPC traded in crude and feedstocks for legal reserves with TOP - IRPC purchased crude from TOP - IRPC received compensation from TOP
4	Thai Paraxylene Co., Ltd.(TPX) Relationship: TOP holds 99.99% shares	- Sale of goods - Purchase of Goods - Account receivable - Account payable	- 1,419 6 -	445 1,400 - -	- 743 - 67	- The company sold aromatics products to TPX - IRPC purchased aromatics products from TPX
5	Thai Oil Marine Co., Ltd. (TOM) ⁽¹⁾ Relationship: TOP holds 99.99% shares	- Service Income - Account Receivable	- -	11 -	34 2	- IRPC provided port services to TOM
6	Top Next International (TX) ⁽²⁾ Relationship: Thai Oil Solvent Co., Ltd. holds 99.99% shares	- Sale of goods - Purchase of goods - Account receivable - Account payable	1,730 147 117 11	1,247 114 104 14	767 50 69 7	- IRPC sold aromatics products to TX - IRPC purchased Solvent products from TX
7	Top Solvent Vietnam Co., Ltd. (TSV) Relationship: Top Solvent Co., Ltd. holds 99.99% shares	- Sale of goods - Account receivable	136 -	568 26	433 56	- IRPC sold aromatics products to TSV
8	Sak Chaisit Co., Ltd. (SAKC) Relationship: Top Solvent Co., Ltd. holds 80.52% shares	- Sale of goods - Account receivable	408 4	222 3	141 5	- IRPC sold aromatics products to SAKC
9	Ubon Bio Ethanol Plc (UBBE) ⁽³⁾ Relationship: Thai Oil Ethanol Co., Ltd. holds 12.39% shares	- Purchase of goods - Accounts payable	- -	99 -	253 1	- IRPC purchased ethanol products from UBBE.

No.	Connected Party/Relationship	Transaction	Unit (Million Baht)			Nature and Condition
			2022	2021	2020	
10	PTT Energy Solutions Co., Ltd. (PTTES) ⁽⁴⁾ Relationship: PTT Plc holds 40.00% shares IRPC Plc holds 20.00% shares - Common director: Mr. Kris Imsang	- Other income - Sales & admin expenses - Other receivables	4 80 1	4 82 2	3 77 -	- IRPC received personnel expenses from PTTES - IRPC paid PTTES technical service fees
11	Energy Complex Co., Ltd. (EnCo) Relationship: PTT Plc holds 50.00% shares - Common directors: Miss Peangpanor Boonklum Mr. Chansak Chuenchom	- Sales & admin expenses - Amortization of license asset - Interest expense under lease agreement - Right of use - Lease liabilities - Accrued interest under lease agreement - Contract deposit	65 31 2 66 68 2 20	64 30 1 3 3 - 20	65 30 2 33 34 1 20	- IRPC signed office rental and service agreements with EnCo for a period of three years (Feb 2022 - Jan 2025)
12	PTT International Trading Pte., Ltd. (PTTT) Relationship: PTT Plc holds 99.99% shares	- Sale of goods - Purchase of goods - Other income - Income (Expenses) from oil futures contract - Account receivable - Other receivables - Other payables	46,848 1,159 12 (2,455) 2,633 514 81	11,510 - - (311) 1,076 - 22	8,596 - - (10) 539 - 125	- IRPC sold petroleum products to PTTT - IRPC purchased petroleum products from PTTT, and received compensation from selling and buying crude oil and products within PTT group - IRPC received compensation from delivery delay from PTT - The Company entered into an oil futures contract with PTTT
13	Dhipaya Insurance Plc (TIP) ⁽⁵⁾ Relationship: PTT Plc holds 13.33% shares	- Other income - Sales & admin expenses - Other payables	- - -	561 360 -	244 307 3	- IRPC received compensation from TIP - IRPC paid insurance premiums to TIP

No.	Connected Party/Relationship	Transaction	Unit (Million Baht)			Nature and Condition
			2022	2021	2020	
14	PTT Tank Terminal Co., Ltd. (PTTTANK) Relationship: PTT Plc holds 99.99% shares	- Sales & admin expenses	13	-	-	- IRPC paid for project consulting fees
15	Business Services Alliance Co., Ltd. (BSA) Relationship: PTT Plc holds 25.00% shares	- Other income	3	3	3	- IRPC Oil Co., Ltd. Received store management service income from BSA
		- Sales & admin expenses	382	331	269	- The company paid personnel wages to BSA
		- Other payables	4	60	22	
16	Global Power Synergy Plc (GPSC) Relationship: PTT Plc holds 47.27% shares	- Other income	-	7	11	- IRPC provides research services to GPSC.
		- Sales & admin expenses	2	2	-	- IRPC paid personnel wages to GPSC.
17	PTT Global Chemical Plc (GC) Relationship: PTT Plc holds 45.18% shares	- Sale of goods	25,108	8,754	5,996	- IRPC sold petroleum products and polymer products to GC
		- Purchase of goods	29,065	14,459	11,263	- IRPC purchased petroleum and polymer products from GC
		- Sales & admin expenses	23	40	4	- IRPC paid personnel wages and compensation for goods to GC
		- Account receivable	1,735	1,460	595	
		- Accounts payable	1,715	2,429	939	
18	GC Marketing Solutions Co., Ltd. (GCM) Relationship: PTT Global Chemical Plc holds 100.00% shares	- Sale of goods	260	333	118	- IRPC sold polymer products to GCM
		- Purchase of goods	330	405	286	- IRPC purchased polymer products from GCM
		- Account receivable	-	27	20	
		- Accounts payable	-	33	25	
19	GC Logistics Solutions Co., Ltd. (GCL) Relationship: PTT Global Chemical Plc holds 100.00% shares	- Sales & admin expenses	-	2	5	- IRPC paid GCL for transportation services
20	GC Styrenics Co., Ltd. (GCS) ⁽⁶⁾ Relationship: PTT Global Chemical Plc holds 99.99% shares	- Sale of goods	-	44	1	- IRPC sold aromatics products to GCS

No.	Connected Party/Relationship	Transaction	Unit (Million Baht)			Nature and Condition
			2022	2021	2020	
21	GC Glycol Co., Ltd. (Glycol) ⁽⁷⁾ Relationship: PTT Global Chemical Plc holds 99.99% shares	- Purchase of Goods	-	-	1	- IRPC purchased petrochemical products from Glycol
22	GC Maintenance and Engineering Co., Ltd. (GCME) Relationship: PTT Global Chemical Plc holds 99.99% shares	- Sales & admin expenses - Other payables	16 4	13 -	13 -	- RPC paid engineering service fees to GCME
23	PTT Asahi Chemical Co., Ltd. (PTTAC) Relationship: PTT Global Chemical Plc holds 50.00% shares	- Purchase of goods - Accounts payable	1,372 78	2,275 208	1,122 141	- IRPC purchased petrochemical products from PTTAC
24	PTT Digital Solutions Co., Ltd. (PTT DIGITAL) Relationship: PTT Global Chemical Plc holds 40.00% shares, PTT Plc holds 20.00% shares	- Sales & admin expenses	28	30	29	- IRPC paid IT service fees to PTT DIGITAL
25	NPC Safety and Environmental Services Co., Ltd. (NPC S&E) Relationship: PTT Global Chemical Plc holds 99.99% shares	- Sales & admin expenses	3	2	1	- IRPC paid for rent of safety equipment, equipment for testing COVID-19 and training fees to NPC S&E NPC S&E
26	Global Green Chemicals Plc (GGC) Relationship: PTT Global Chemical Plc holds 72.29% shares	- Purchase of goods - Accounts payable	1,552 19	1,578 66	562 39	- IRPC purchased petroleum products from GGC
27	Solution Creation Co.,Ltd. (SOLUTIONCRE) Relationship: PTT Global Chemical Plc holds 99.99% shares	- Sales of goods	4	3	-	- IRPC sold polymer products SOLUTIONCRE
28	GCM Polymer Trading DMCC Relationship: GC Marketing Solutions Co., Ltd. holds 100.00% shares	- Sale of goods - Account receivable	49 -	127 -	77 3	- IRPC sold polymer products to GCM Polymer Trading DMCC

No.	Connected Party/Relationship	Transaction	Unit (Million Baht)			Nature and Condition
			2022	2021	2020	
29	IRPC Clean Power Co., Ltd. (IRPC-CP) Relationship: Global Power Synergy Plc holds 51.00% shares, IRPC Plc holds 48.99% shares - Common directors: Mr. Phichin Apiwattanaporn Mr. Woravuth Sivapetranart	- Sale of goods	42	44	45	- IRPC sold electricity and water to IRPC-CP
		- Purchase of goods	3,206	2,305	2,296	- RPC purchased steam from IRPC-CP
		- Sales & admin expenses	2	-	-	- Technology IRPC paid electricity expense to IRPC-CP
		- Other income	119	118	117	- IRPC provided services relating to power plants to IRPC-CP
		- Account receivable	4	4	4	
		- Accounts payable	211	228	190	
		- Other receivables	-	1	-	
		- Other payables	227	189	215	
30	PTT MEA Co., Ltd. (PTTMEA) Relationship: PTT PCL holds 100.00% shares	- Purchase of goods	(10)	-	-	- IRPC received compensation from selling and buying crude oil and products within PTT group
31	PTT International Trading London Co., Ltd. (PTTTLDN) Relationship: PTT PCL holds 100.00% shares	- Purchase of goods	(35)	-	-	- IRPC received compensation from selling and buying crude oil and products within PTT group
32	PTT Treasury Center Co., Ltd. (PTTTCC) Relationship: PTT Plc holds 99.99% shares	- Paid interest	1	-	-	- Subsidiary paid loan interest to PTTCC
		- Long-term loan	31	31	-	- Subsidiary borrowed from PTTCC

Notes: ⁽¹⁾ Thai Oil Marine Co., Ltd. (TOM) is not a related party of the group of companies since April 30, 2021

⁽²⁾ Top Solvent Co., Ltd. (TS) changed to Top Next International (TX) since October 3, 2022

⁽³⁾ Ubon Bio Ethanol Plc (UBBE) is not a related party of the group of companies since September 27, 2021

⁽⁴⁾ PTT Energy Solutions Co., Ltd registered for company dissolution on December 29, 2022

⁽⁵⁾ Dhipaya Insurance Plc (TIP) is not a related party of the group of companies from August 31, 2021

⁽⁶⁾ GC Styrenics Co., Ltd registered for company dissolution on August 31, 2022

⁽⁷⁾ GC Glycol Co., Ltd registered for company dissolution on August 31, 2022

Connected Transactions Policy and Requirements

Significant connected transactions must be considered and approved by IRPC Board of Directors. As IRPC and its subsidiaries operate fully integrated petrochemical and refining businesses, the same business sector as PTT Group companies, connected transactions among IRPC, its subsidiaries, and PTT affiliates are inevitable and regarded as normal business operations. All such connected transactions, including trading in oil products and related services, as well as other transactions in support of normal business, are conducted on an arm's length basis and which does not lead to benefit transfer. IRPC exercises due care in considering connected transactions based on reasonableness and to the best interests of the company.

Measures Relating to Connected Transactions

IRPC complies with the requirements Office of the Securities and Exchange Commission (SEC) and the Securities Exchange of Thailand (SET) regarding connected transactions. The Board has duly examined transactions with potential conflicts of interest to ensure that they are conducted in a fair, transparent, and reasonable manner. Should a conflict of interest arise, the director, employee or any related party must recuse themselves from any discussion or voting on the issue in which they have a personal interest.

In addition, on a quarterly basis, the Audit Committee reviews IRPC and its subsidiaries' connected transactions with related companies or parties to avoid conflicts of interest and ensure IRPC's best interest.

Policy on Future Connected Transactions

IRPC's future connected transactions will be considered normal business transactions, with the company will take into consideration suitability of conditions and fair market prices. This is to ensure the best interests of all shareholders and stakeholders, in strict compliance with the corporate governance policy as well as SEC Office and SET's regulations on connected transactions.

Opinion of the Audit Committee

Having reviewed all connected transactions, the Audit Committee regards these connected transactions as sensible and conducted in the normal course of business, with suitable reference market prices, and on an arm's length basis, in conformity to the corporate governance policy and SEC Office and SET's regulatory requirements.



Section **03**

Financial Report



- Report of the Board of Directors' Responsibilities for the Financial Reports
- Independent Auditor's Report
- Financial Statements
- Notes to the Consolidate Financial Statements

Report of the Board of Directors' Responsibilities for the Financial Reports

Dear Shareholders,

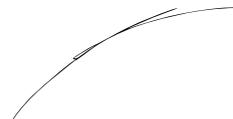
The financial statements of IRPC Public Company Limited and subsidiaries for the year ended on December 31, 2022, were prepared under the requirements of the Securities and Exchange Commission and the financial reporting standards enforced by the Federation of Accounting Professions.

The Board of Directors is responsible for IRPC and subsidiaries' financial reports to ensure that our financial position, performance, and cash flow statements are materially correct. IRPC has recorded accurate, complete, on-time and sufficient accounting journal entries to maintain assets, ensure an effective risk management and internal control, prevent fraud and substantially irregular

transactions. For the intent of preparing these reports and for the benefit of shareholders and general investors, IRPC has adopted suitable and consistently practiced accounting policy in line with proper financial reporting standards in the preparation of these reports. Material data have been duly disclosed in the Notes to the Financial Reports. The Auditor, having scrutinized the consolidated statements, expressed their opinion on the financial statements of IRPC Public Company Limited and its subsidiaries in the Report of the Independent Certified Public Accountant.



Mr. Siri Jirapongpun
Chairman



Mr. Kris Imsang
President and Chief Executive Officer

Independent Auditor's Report

To the Shareholders of IRPC Public Company Limited

Opinion

I have audited the accompanying consolidated financial statements of IRPC Public Company Limited and its subsidiaries ("the Group"), which comprise the consolidated statement of financial position as at 31 December 2022, and the related consolidated statements of income, comprehensive income, changes in shareholders' equity and cash flows for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies, and have also audited the separate financial statements of IRPC Public Company Limited for the same period.

In my opinion, the financial statements referred to above present fairly, in all material respects, the financial position of IRPC Public Company Limited and its subsidiaries and of IRPC Public Company Limited as at 31 December 2022, and their financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards.

Basis for Opinion

I conducted my audit in accordance with Thai Standards on Auditing. My responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report. I am independent of the Group in accordance with the Code of Ethics for Professional Accountants including Independence Standards as issued by the Federation of Accounting Professions as relevant to my audit of the financial statements, and I have fulfilled my other ethical responsibilities in accordance with the Code of Ethics for Professional Accountants. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Key Audit Matters

Key audit matters are those matters that, in my professional judgement, were of most significance in my audit of the financial statements of the current period. These matters were addressed in the context of my audit of the financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

I have fulfilled the responsibilities described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report, including in relation to these matters. Accordingly, my audit included the performance of procedures designed to respond to my assessment of the risks of material misstatement of the financial statements. The results of my audit procedures, including the procedures performed to address the matters below, provide the basis for my audit opinion on the accompanying financial statements as a whole.

Key audit matter and how audit procedures respond for are described below.

Allowance for diminution in value of inventories

As mentioned in Note 9 to the consolidated financial statements, regarding inventories as at 31 December 2022, the Group's cost of inventories amounted to Baht 42,887 million and the recorded allowance for diminution in value of inventories was Baht 3,511 million. I focused on consideration of allowance for diminution in value of inventories to net realisable value because the Group's inventories are mainly raw materials and finished goods that are commodities of which prices are volatile. This may affect the value of inventories at the end of the reporting period and the inventory balance is material to the financial statements. Inventories are measured at the lower of cost or net realisable value and this, together with determination of the related allowance for diminution in value of inventories, requires the management to consider the reasonableness of the market price used, by comparing it to the expected selling price of the commodities.

The procedures I performed to assess the determination of allowance for diminution in value of inventories included:

- Gaining an understanding and performing tests of the design and operating effectiveness of the controls relevant to the inventory valuation process.
- Assessing the appropriateness of the methodology used to calculate the net realisable value of inventories at the end of the reporting period, through considering the reasonableness of the market prices used by comparing them to the expected selling prices of commodities and testing the accuracy of the calculations.

- Assessing the completeness of the adjustments of allowance for diminution in value of inventories in the consolidated and separate financial statements and the adequacy of the disclosures made in relation to the estimation of allowance for diminution in value of inventories in the notes to the financial statements.

Other Matter

The consolidated financial statements of IRPC Public Company Limited and its subsidiaries (The Group) and the separate financial statements of IRPC Public Company Limited for the year ended 31 December 2021, presented herein as comparative information, were audited by other auditor who, under his report dated 8 February 2022, expressed an unmodified opinion on those financial statements.

Other Information

Management is responsible for the other information. The other information comprises the information included in annual report of the Group, but does not include the financial statements and my auditor's report thereon.

My opinion on the financial statements does not cover the other information and I do not express any form of assurance conclusion thereon.

In connection with my audit of the financial statements, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or my knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work I have performed, I conclude that there is a material misstatement of this other information, I am required to report that fact. I have nothing to report in this regard.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fairly presentation of the financial statements in accordance with Thai Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Group'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 Financial Statements

My objectives are to obtain reasonable assurance about whether the 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 my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Thai Standards on Auditing 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 financial statements.

As part of an audit in accordance with Thai Standards on Auditing, I exercise professional judgement and maintain professional skepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the 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 my 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 ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the 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. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I 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 I identify during my audit.

I also provide those charged with governance with a statement that I 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 my independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, I determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. I describe these matters in my auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, I determine that a matter should not be communicated in my report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

I am responsible for the audit resulting in this independent auditor's report.



Kittiphun Kiatsomphob
Certified Public Accountant (Thailand) No. 8050

EY Office Limited
Bangkok: 7 February 2023

IRPC Public Company Limited and its subsidiaries

Statement of financial position

As at 31 December 2022

(Unit: Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
Assets					
Current assets					
Cash and cash equivalents	7	3,230,449,809	11,236,030,183	2,917,691,080	10,894,240,854
Trade receivables	6, 8	15,051,059,250	13,785,361,876	15,090,802,555	13,815,354,501
Other receivables	8	6,545,211,172	2,642,775,853	6,537,485,541	2,630,420,704
Amounts due from related parties	6, 8	1,282,588,765	2,922,728,608	1,298,621,864	2,940,134,794
Short-term loans and interest receivable					
from a related party	8	-	-	134,844,429	-
Inventories	9	39,376,047,749	33,766,140,256	38,951,378,971	33,405,004,951
Refundable value-added tax		3,340,376,305	2,480,809,228	3,340,182,927	2,470,399,834
Prepaid excise tax		112,782,815	165,832,591	112,782,815	165,832,591
Other current assets		1,981,691,067	101,430,342	1,960,759,813	82,482,858
Total current assets		70,920,216,932	67,101,106,937	70,344,549,965	66,403,881,087
Non-current assets					
Other non-current financial assets	10	1,682,502,102	1,689,040,204	1,681,902,104	1,688,440,206
Investments in subsidiaries	11	-	-	2,522,389,957	2,462,389,957
Investments in joint ventures	12	726,171,969	691,372,172	682,999,790	667,999,790
Investments in associates	13	8,745,968,977	8,602,894,817	8,967,146,963	8,977,346,963
Long-term loans to related parties	6	-	-	76,935,938	126,935,938
Investment properties	14	938,988,819	921,962,956	903,122,010	886,096,147
Property, plant and equipment	15	111,432,138,687	109,067,255,859	109,473,178,272	107,211,252,394
Right-of-use assets	21.1	248,348,220	224,767,008	346,741,017	437,162,834
Intangible assets	16	695,433,457	760,509,363	663,004,922	725,803,814
Deferred tax assets	31	2,325,367,906	1,152,182,384	2,252,641,665	1,067,971,020
Non-current derivative assets	39.1	154,831,762	-	154,831,762	-
Other non-current assets	17	316,790,279	280,765,343	314,558,188	278,435,683
Total non-current assets		127,266,540,178	123,390,750,106	126,039,452,768	122,529,834,746
Total assets		198,186,757,110	190,491,857,043	196,384,002,733	188,933,715,833

The accompanying notes are an integral part of the financial statements.

IRPC Public Company Limited and its subsidiaries

Statement of financial position (continued)

As at 31 December 2022

	Note	(Unit: Baht)			
		Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
Liabilities and shareholders' equity					
Current liabilities					
Short-term borrowings from					
financial institutions	18	9,000,000,000	-	9,000,000,000	-
Trade payables	6, 19	34,465,948,903	28,671,172,280	34,446,135,617	28,630,394,669
Other payables	19	4,243,531,715	3,238,612,043	4,178,276,040	3,168,711,587
Amounts due to related parties	6, 19	317,779,044	272,284,991	330,564,583	266,138,326
Interest payables		229,527,676	194,917,381	229,527,676	194,917,381
Accrued bonus expenses		1,343,445,768	1,954,791,396	1,325,924,487	1,934,759,102
Advance receipts for goods		1,209,525,779	1,874,544,038	1,171,727,547	1,822,597,138
Current portion of long-term borrowings					
from financial institutions	20.1	8,763,088,217	8,585,757,948	8,763,088,217	8,585,757,948
Current portion of debentures	20.2	1,999,314,664	1,999,005,065	1,999,314,664	1,999,005,065
Current portion of lease liabilities	6, 21.1	102,457,907	81,334,015	211,559,100	188,109,149
Short-term borrowings and interest payable					
from a related party	6	-	-	4,122	56,468,671
Income tax payable		7,741,384	593,496,182	-	580,545,948
Current derivative liabilities	6, 39.1	62,228,511	27,760,107	62,228,511	27,760,107
Other current liabilities		311,257,814	48,947,561	308,393,912	39,829,434
Total current liabilities		62,055,847,382	47,542,623,007	62,024,744,476	47,514,994,525
Non-current liabilities					
Long-term borrowings from financial institutions					
- net of current portion	20.1	19,885,636,691	28,520,968,570	19,885,636,691	28,520,968,570
Debentures - net of current portion	20.2	31,963,531,754	21,973,341,597	31,963,531,754	21,973,341,597
Long-term lease liabilities					
- net of current portion	6, 21.1	143,948,044	141,480,669	136,055,763	249,911,040
Long-term borrowings from a related party	6	31,290,625	31,290,625	-	-
Provision for long-term employee benefits	22	4,245,971,386	4,005,119,183	4,106,763,294	3,958,407,216
Non-current derivative liabilities	39.1	66,912,018	222,568,283	66,912,018	222,568,283
Other non-current liabilities	23	95,842,542	342,178,806	88,610,539	313,226,456
Total non-current liabilities		58,453,133,060	55,236,947,733	58,357,510,059	55,238,423,162
Total liabilities		118,508,980,442	102,779,570,740	118,382,254,535	102,753,417,687

The accompanying notes are an integral part of the financial statements.

IRPC Public Company Limited and its subsidiaries

Statement of financial position (continued)

As at 31 December 2022

(Unit: Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
Shareholders' equity					
Share capital					
Registered share capital					
20,475,000,000 ordinary shares of Baht 1 each		20,475,000,000	20,475,000,000	20,475,000,000	20,475,000,000
Issued and paid-up share capital					
20,434,419,248 ordinary shares of Baht 1 each		20,434,419,248	20,434,419,248	20,434,419,248	20,434,419,248
Share premium		28,554,212,397	28,554,212,397	28,554,212,397	28,554,212,397
Treasury stock - ordinary shares					
held by a subsidiary	24	(124,282,649)	(124,282,649)	-	-
Premium on treasury stock - ordinary shares					
held by a subsidiary		15,177,080	15,177,080	-	-
Retained earnings					
Appropriated - statutory reserve	25	2,047,500,000	2,047,500,000	2,047,500,000	2,047,500,000
Unappropriated		28,531,873,203	36,571,819,945	28,972,331,336	35,147,430,753
Other components of shareholders' equity		(6,614,731)	(3,264,250)	(6,614,731)	(3,264,250)
Equity attributable to owners of the Company		79,452,284,546	87,495,581,789	78,001,748,248	86,180,298,146
Non-controlling interests of the subsidiaries	11	225,482,122	216,704,534	-	-
Total shareholders' equity		79,677,776,668	87,712,286,303	78,001,748,248	86,180,298,146
Total liabilities and shareholders' equity		198,186,757,110	190,491,857,043	198,384,002,783	188,933,715,833

The accompanying notes are an integral part of the financial statements.

 Directors

IRPC Public Company Limited and its subsidiaries

Income statement

For the year ended 31 December 2022

				(Unit: Baht)	
		Consolidated financial statements		Separate financial statements	
Note	2022	2021	2022	2021	
Revenues					
Revenue from sales and services	324,800,027,932	255,114,607,531	323,770,855,329	253,960,295,789	
Other income	26 1,538,130,838	1,508,130,223	1,742,498,129	1,735,720,462	
Total revenues	326,338,158,770	256,622,737,754	325,513,353,458	255,720,016,251	
Expenses					
Cost of sales and services	314,892,104,739	228,668,860,070	314,076,566,056	228,270,207,884	
Selling and distribution expenses	1,984,485,955	2,104,684,036	2,000,377,343	2,158,977,545	
Administrative expenses	27 5,275,018,354	5,672,860,943	5,108,621,573	5,577,606,109	
Net derivative loss	28 8,118,759,167	1,942,163,334	8,118,759,167	1,942,085,814	
Total expenses	330,250,368,215	238,708,574,383	329,304,324,139	237,948,879,352	
Operating profit (loss)	(3,912,209,445)	17,914,163,371	(3,790,970,681)	17,779,136,899	
Share of profit from investments in joint ventures and associates	12, 13 283,621,119	712,619,961	-	-	
Finance cost	29 (1,873,236,507)	(1,742,698,953)	(1,878,255,920)	(1,750,447,531)	
Profit (loss) before income tax revenues (expenses)	(5,501,824,833)	16,884,084,379	(5,669,226,601)	16,028,689,368	
Income tax revenues (expenses)	31 1,141,807,919	(2,351,267,186)	1,170,662,363	(2,266,254,961)	
Profit (loss) for the year	(4,360,016,914)	14,532,817,193	(4,498,564,238)	13,762,434,367	
Profit (loss) attributable to					
Equity holders of the Company	(4,363,617,922)	14,504,624,077	(4,498,534,206)	13,762,434,367	
Non-controlling interests of the subsidiaries	3,601,008	28,193,116			
	(4,360,016,914)	14,532,817,193			
Basic earnings (loss) per share					
33					
Profit (loss) attributable to equity holders of the Company	(0.21)	0.71	(0.22)	0.67	

The accompanying notes are an integral part of the financial statements.

IRPC Public Company Limited and its subsidiaries
Statement of comprehensive income
For the year ended 31 December 2022

		(Unit: Baht)			
		Consolidated financial statements		Separate financial statements	
Note		2022	2021	2022	2021
	Profit (loss) for the year	<u>(4,360,018,014)</u>	<u>14,532,817,193</u>	<u>(4,498,534,268)</u>	<u>13,782,434,387</u>
	Other comprehensive income (loss):				
	<i>Other comprehensive income not to be reclassified to profit or loss in subsequent periods</i>				
	Actuarial gain	22	-	408,886,137	-
	Less: Income tax effect	31	-	(81,211,096)	-
			<u>325,775,041</u>	<u>-</u>	<u>321,612,592</u>
	Loss on investments in equity instruments designated at fair value through other comprehensive income	39.4	(4,188,101)	(2,816,381)	(4,188,101)
	Less: Income tax effect	31	837,820	563,276	837,820
			<u>(3,350,481)</u>	<u>(2,253,105)</u>	<u>(2,253,105)</u>
	Gain on sales of investments in equity instrument	10	1,277,104	-	1,277,104
	Share of other comprehensive loss on investment in associates	13.2	(3,952,723)	(1,559,938)	-
	Other comprehensive income (loss) for the year		<u>(8,028,100)</u>	<u>(2,073,377)</u>	<u>319,359,487</u>
	Total comprehensive income (loss) for the year		<u>(4,368,043,014)</u>	<u>14,854,779,191</u>	<u>(4,500,607,585)</u>
	Total comprehensive income (loss) attributable to Equity holders of the Company		<u>(4,369,644,022)</u>	<u>14,826,586,075</u>	<u>(4,500,607,585)</u>
	Non-controlling interests of the subsidiaries		<u>3,691,008</u>	<u>28,193,116</u>	
			<u>(4,368,043,014)</u>	<u>14,854,779,191</u>	

The accompanying notes are an integral part of the financial statements.

IRPC Public Company Limited and its subsidiaries
Statement of changes in shareholders' equity
For the year ended 31 December 2022

	Consolidated financial statements											(Unit: Baht)		
	Equity attributable to owners of the Company													
	Issued and paid-up share capital	Share premium	Treasury stock - ordinary shares held by a subsidiary	Treasury stock - ordinary shares held by a subsidiary	Premium on treasury stock - ordinary shares held by a subsidiary	Retained earnings		Unappropriated - statutory reserve	Appropriated - statutory reserve	Other components of shareholders' equity - Other comprehensive income	Total equity attributable to owners of the Company		Non-controlling interests of the subsidiaries	Total shareholders' equity
						Unappropriated	Appropriated							
Balance as at 1 January 2021	20,034,419,248	28,554,212,287	(134,262,648)	(134,262,648)	15,177,080	2,047,500,000	24,800,287,029	24,800,287,029	(1,571,140)	75,500,401,800	139,320,070	75,639,721,870		
Profit for the year	-	-	-	-	-	-	14,504,624,877	-	-	14,504,624,877	28,183,116	14,532,807,993		
Other comprehensive income (loss) for the year	-	-	-	-	-	-	324,215,103	-	(2,253,165)	321,961,938	-	321,961,938		
Total comprehensive income (loss) for the year	-	-	-	-	-	-	14,828,839,980	-	(2,253,165)	14,826,586,815	28,183,116	14,854,770,191		
Dividends paid	-	-	-	-	-	-	(2,657,456,281)	-	-	(2,657,456,281)	(23,813,752)	(2,681,270,033)		
Increase in portion of investment of non-controlling subsidiary (Note 11)	-	-	-	-	-	-	-	-	-	-	72,650,100	72,650,100		
Balance as at 31 December 2021	20,034,419,248	28,554,212,287	(134,262,648)	(134,262,648)	15,177,080	2,047,500,000	36,571,813,945	36,571,813,945	(3,264,290)	87,466,581,789	216,704,504	87,713,286,303		
Balance as at 1 January 2022	20,034,419,248	28,554,212,287	(134,262,648)	(134,262,648)	15,177,080	2,047,500,000	36,571,813,945	36,571,813,945	(3,264,290)	87,466,581,789	216,704,504	87,713,286,303		
Profit (loss) for the year	-	-	-	-	-	-	(4,260,817,922)	-	-	(4,260,817,922)	3,891,008	(4,256,926,914)		
Other comprehensive loss for the year	-	-	-	-	-	-	(2,675,619)	-	(2,365,481)	(5,041,100)	-	(5,041,100)		
Total comprehensive income (loss) for the year	-	-	-	-	-	-	(4,265,493,541)	-	(2,365,481)	(4,267,859,022)	3,891,008	(4,263,968,014)		
Dividends paid	-	-	-	-	-	-	(3,675,653,395)	-	-	(3,675,653,395)	(34,813,400)	(3,710,466,821)		
Increase in portion of investment of non-controlling subsidiary (Note 11)	-	-	-	-	-	-	-	-	-	-	40,000,000	40,000,000		
Balance as at 31 December 2022	20,034,419,248	28,554,212,287	(134,262,648)	(134,262,648)	15,177,080	2,047,500,000	29,631,873,203	29,631,873,203	(6,114,731)	79,432,264,546	225,492,122	79,657,776,668		

The accompanying notes are an integral part of the financial statements.

IRPC Public Company Limited and its subsidiaries
Statement of changes in shareholders' equity
For the year ended 31 December 2022

	Separate financial statements							(Unit: Baht)
	Issued and paid-up share capital	Share premium	Appropriated - statutory reserve	Retained earnings	Unappropriated	Other components of shareholders' equity	Total Shareholders' equity	
Balance as at 1 January 2021	20,434,419,346	28,554,212,397	2,047,500,000	23,924,128,011		(1,011,145)	74,859,246,509	
Profit for the year	-	-	-	13,782,434,387		-	13,782,434,387	
Other comprehensive income (loss) for the year	-	-	-	321,612,592		(2,253,105)	319,359,487	
Total comprehensive income (loss) for the year	-	-	-	14,084,046,979		(2,253,105)	14,081,793,874	
Dividends paid (Note 30)	-	-	-	(2,860,742,237)		-	(2,860,742,237)	
Balance as at 31 December 2021	20,434,419,346	28,554,212,397	2,047,500,000	35,147,430,753		(3,264,250)	86,180,288,146	
Balance as at 1 January 2022	20,434,419,346	28,554,212,397	2,047,500,000	35,147,430,753		(3,264,250)	86,180,288,146	
Loss for the year	-	-	-	(4,498,534,208)		-	(4,498,534,208)	
Other comprehensive income (loss) for the year	-	-	-	1,277,104		(3,350,481)	(2,073,377)	
Total comprehensive loss for the year	-	-	-	(4,497,257,104)		(3,350,481)	(4,500,607,585)	
Dividends paid (Note 30)	-	-	-	(3,077,942,313)		-	(3,077,942,313)	
Balance as at 31 December 2022	20,434,419,346	28,554,212,397	2,047,500,000	26,972,231,336		(6,614,731)	78,001,748,346	

The accompanying notes are an integral part of the financial statements.

IRPC Public Company Limited and its subsidiaries

Cash flow statement

For the year ended 31 December 2022

	(Unit: Baht)			
	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Cash flows from operating activities				
Profit (loss) before tax	(5,501,824,833)	16,884,084,379	(5,869,226,691)	16,028,689,368
Adjustments to reconcile profit (loss) before tax to net cash provided by (paid from) operating activities				
Depreciation and amortisation	6,058,798,629	6,586,513,253	6,066,910,512	6,604,302,266
Share of profit from investments in joint ventures and associates	(283,621,119)	(712,619,961)	-	-
(Reversal) expected credit losses	(1,971,483)	909,722	915,789	1,905,015
Reduction of inventory to net realisable value	2,399,636,067	169,872,719	2,399,636,067	170,318,568
Unrealised loss on exchange rate	209,208,775	567,073,227	209,158,497	567,578,594
Unrealised gain on hedge accounting	(258,019,624)	(102,988,011)	(258,019,624)	(102,988,011)
(Gain) Loss on disposal of property, plant and equipment	(3,044,058)	46,011,857	(3,137,134)	44,958,588
Reversal of loss on impairment of an asset	(17,025,863)	-	(17,025,863)	-
Loss on impairment of investment in an associate	-	-	10,200,000	-
Provision for long-term employee benefits	283,375,129	280,310,831	279,059,877	256,204,203
Interest income	(37,674,844)	(43,627,315)	(41,266,065)	(48,388,678)
Dividend income	(5,600,190)	(5,126,681)	(166,458,610)	(154,881,773)
Finance cost	1,873,236,507	1,742,898,953	1,878,266,929	1,750,447,531
Profit from operating activities before changes in operating assets and liabilities	6,708,471,099	27,393,112,973	6,678,663,045	27,118,143,371
Operating assets (increase) decrease				
Trade receivables	(1,299,923,523)	(4,181,454,211)	(1,311,376,831)	(4,107,645,505)
Other receivables	(3,991,670,664)	(332,575,591)	(3,907,123,088)	(330,721,460)
Amounts due from related parties	1,628,227,665	(2,768,261,702)	1,629,612,752	(2,774,462,176)
Inventories	(8,009,543,559)	(12,767,129,768)	(7,948,010,087)	(12,655,765,398)
Refundable value-added tax	(859,567,077)	(1,943,369,770)	(869,783,092)	(1,936,437,875)
Prepaid excise tax	53,049,776	89,410,331	53,049,776	89,410,331
Other current assets	(57,328,071)	267,898,737	(58,570,005)	257,858,245
Other non-current assets	151,373,255	163,467,040	151,275,685	163,467,040
Operating liabilities increase (decrease)				
Trade payables	5,802,418,215	4,688,663,808	5,823,479,079	4,711,666,259
Other payables	(231,166,920)	(466,112,151)	(226,991,497)	(461,069,278)
Amounts due to related parties	45,584,679	(93,132,579)	44,426,258	(96,531,394)
Accrued bonus expenses	(811,345,626)	795,574,433	(808,834,616)	790,318,262
Advanced receipts for goods	(665,018,258)	1,070,633,524	(650,869,591)	1,060,461,279
Other current liabilities	262,310,253	15,922,992	268,564,478	1,251,278
Provision for long-term employee benefits	(42,522,925)	(86,858,444)	(40,793,796)	(83,960,066)
Other non-current liabilities	(246,336,265)	(345,066,194)	(224,615,917)	(346,660,654)
Cash flows from (used in) operating activities	(1,272,987,957)	11,527,921,428	(1,193,967,450)	11,399,236,224
Cash paid for corporate income tax	(2,495,312,949)	(186,131,478)	(2,482,002,977)	(138,198,488)
Cash receipt from withholding tax	56,085,511	-	45,808,347	-
Net cash flows from (used in) operating activities	(3,712,215,395)	11,341,789,950	(3,610,361,180)	11,261,037,736

The accompanying notes are an integral part of the financial statements.

IRPC Public Company Limited and its subsidiaries

Cash flow statement (continued)

For the year ended 31 December 2022

(Unit: Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Cash flows from investing activities				
Proceed from short-term loan to a related party	-	-	-	18,784,849
Cash receipt (paid) on long-term loan to a related party	-	-	(84,637,873)	62,928,124
Increase in investments in a subsidiary and joint ventures	(15,000,000)	(16,999,800)	(75,000,000)	(128,199,700)
Dividend received from a subsidiary, a joint venture and associates	116,795,440	117,562,843	168,147,532	117,562,843
Proceed from sales of equity investments	3,627,104	-	3,627,104	-
Acquisitions of property, plant and equipment	(8,819,954,228)	(2,932,380,292)	(8,824,229,958)	(2,771,508,561)
Proceed from disposal of property, plant and equipment	7,117,924	59,081,339	7,055,043	58,930,519
Acquisitions of intangible assets	(79,975,872)	(128,685,524)	(78,083,798)	(122,633,779)
Other non-current assets	(187,398,191)	-	(187,398,191)	-
Interest received	37,874,844	43,627,215	41,059,530	48,277,891
Dividend received	5,600,190	5,126,681	1,311,078	37,318,930
Net cash flows used in investing activities	(8,830,611,589)	(2,852,647,438)	(8,828,149,534)	(2,678,539,084)
Cash flows from financing activities				
Cash receipt (paid) on settlements of financial derivative contracts	9,741,833	(91,499,197)	9,741,833	(91,499,197)
Repayment of lease liabilities	(112,729,053)	(110,064,433)	(218,212,736)	(212,242,215)
Cash receipt (paid) from short-term borrowings from a related party	-	-	(56,443,566)	56,443,566
Cash receipt from short-term borrowings from financial institutions	9,000,000,000	-	9,000,000,000	-
Cash receipt from long-term borrowings from a related party	-	31,200,000	-	-
Dividend paid to non-controlling interest of subsidiaries	(34,813,420)	(23,813,752)	-	-
Cash receipt from non-controlling interest of subsidiaries	40,000,000	72,800,100	-	-
Proceed from debentures issuance	11,982,143,314	11,982,924,269	11,982,143,314	11,982,924,268
Repayment of long-term loans from financial institutions and debentures	(10,849,930,000)	(13,336,600,000)	(10,849,930,000)	(13,336,900,000)
Dividend paid	(3,673,653,201)	(2,857,408,261)	(3,677,942,313)	(2,860,742,237)
Interest paid	(1,923,512,863)	(1,768,543,085)	(1,927,395,592)	(1,776,378,610)
Net cash flows from (used in) financing activities	4,637,246,610	(6,104,302,359)	4,461,960,940	(6,241,394,425)
Net increase (decrease) in cash and cash equivalents	(8,005,580,374)	2,384,840,153	(7,976,549,774)	2,341,104,227
Cash and cash equivalents at beginning of year	11,236,030,183	8,851,190,030	10,894,240,854	8,553,138,827
Cash and cash equivalents at end of year	3,230,449,809	11,236,030,183	2,917,691,080	10,894,240,854
Supplemental cash flows information				
Non-cash item consist of				
Increase in right-of-use assets and lease liabilities from additional lease agreements	136,320,321	144,166,681	127,607,411	471,466,683
Accounts payable from purchases of fixed assets	1,984,525,545	328,421,997	1,563,883,038	328,210,133

The accompanying notes are an integral part of the financial statements.

IRPC Public Company Limited and its subsidiaries

Notes to consolidated financial statements

For the year ended 31 December 2022

1. General information

IRPC Public Company Limited ("the Company") is a public company incorporated and domiciled in Thailand. Its parent company is PTT Public Company Limited, which was incorporated in Thailand. The Company is principally engaged in petroleum and petrochemical business with its products being refinery, lubricant, olefins, aromatics, plastic resins and other petrochemical products. The address of the Company's registered office is 299 Moo 5, Sukhumvit Road, Choengnuean District, Aumthur Muang, Rayong Province. The Company's office is located at 555/2 Energy Complex, Building B, 6th floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900.

2. Basis of preparation

- 2.1 The financial statements have been prepared in accordance with Thai Financial Reporting Standards enunciated under the Accounting Professions Act B.E. 2547 and their presentation has been made in compliance with the stipulations of the Notification of the Department of Business Development, issued under the Accounting Act B.E. 2543.

The financial statements in Thai language are the official statutory financial statements of the Company. The financial statements in English language have been translated from the Thai language financial statements.

The financial statements have been prepared on a historical cost basis except where otherwise disclosed in the accounting policies.

2.2 Basis of consolidation

- a) The consolidated financial statements include the financial statements of IRPC Public Company Limited ("the Company") and the following subsidiary companies ("the subsidiaries") (collectively as "the Group").

Company's name	Nature of business	Country of incorporation	Percentage of shareholding	
			2022 (%)	2021 (%)
<u>Subsidiaries held by the Company</u>				
IRPC Oil Company Limited	Sales of oil products and gas	Thailand	99.99	99.99
IRPC Technology Co., Ltd.	Vocational school	Thailand	99.99	99.99
Innoplymed Co., Ltd.	Manufacturing and sales of non-woven fabric products and medical consumables	Thailand	60.00	60.00
IRPC A&L Company Limited	Distributing of petrochemical products	Thailand	57.48	57.48
iPolymer Company Limited	Distributing of plastic resin and chemical products via E-Commerce system	Thailand	55.00	55.00
<u>A subsidiary held by IRPC Oil Company Limited</u>				
Rakpasak Co., Ltd.	Oil vessel renting and producing and distributing of fertilizer products	Thailand	99.99	99.99

- b) The Company is deemed to have control over an investee or subsidiaries if it has rights, or is exposed, to variable returns from its involvement with the investee, and it has the ability to direct the activities that affect the amount of its returns.
- c) Subsidiaries are fully consolidated, being the date on which the Company obtains control, and continue to be consolidated until the date when such control ceases.
- d) The financial statements of the subsidiaries are prepared using the same significant accounting policies as the Company.
- e) Material balances and transactions between the Group have been eliminated from the consolidated financial statements.
- f) Non-controlling interests represent the portion of profit or loss and net assets of the subsidiaries that are not held by the Company and are presented separately in the consolidated profit or loss and within equity in the consolidated statement of financial position.

2.3 The separate financial statements present investments in subsidiaries, joint ventures and associates under the cost method.

3. New financial reporting standards

3.1 Financial reporting standards that became effective in the current year

During the year, the Group has adopted the revised financial reporting standards and interpretations which are effective for fiscal years beginning on or after 1 January 2022. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards with most of the changes directed towards clarifying accounting treatment and providing accounting guidance for users of the standards.

The adoption of these financial reporting standards does not have any significant impact on the Group's financial statements.

However, the Group has adopted the temporary reliefs in accordance with TFRS 9 Financial Instruments, TFRS 7 Disclosure of Financial Instruments and TFRS 16 Leases, which apply to transactions directly affected by interest rate benchmark reform, including changes to contractual cash flows.

The adoption of these temporary reliefs does not have any significant impact on the Group's financial statements.

3.2 Financial reporting standards that will become effective for fiscal years beginning on or after 1 January 2023

The Federation of Accounting Professions issued a number of revised financial reporting standards, which are effective for fiscal years beginning on or after 1 January 2023. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards with most of the changes directed towards clarifying accounting treatment and providing accounting guidance for users of the standards.

The management of the Group believes that adoption of these amendments will not have any significant impact on the Group's financial statements.

4. Significant accounting policies

4.1 Revenue and expense recognition

Revenue from sales and services

Revenue comprises the fair value of the consideration received or receivable for the sale of goods and service in the ordinary course of the Group's activities including excise tax, municipal tax and oil fund. Revenue is shown net of returns, rebates and discounts, and after eliminating sales within the Group. Revenue from sales 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.

Interest income

Interest income is calculated using the effective interest method and recognised on an accrual basis. The effective interest rate is applied to the gross carrying amount of a financial asset, unless the financial assets subsequently become credit-impaired when it is applied to the net carrying amount of the financial asset (net of the expected credit loss allowance).

Finance cost

Interest expense from financial liabilities at amortised cost is calculated using the effective interest method and recognised on an accrual basis.

Dividends

Dividends are recognised when the right to receive the dividends is established.

Other income

Other income is recognised in the statement of income on an accrual basis.

4.2 Cash and cash equivalents

Cash and cash equivalents consist of cash in hand and at banks, and all highly liquid investments with an original maturity of 3 months or less and not subject to withdrawal restrictions.

4.3 Inventories

Finished goods and work in process are valued at the lower of cost (under the weighted average method) and net realisable value. The cost of inventories is measured using the standard cost method, which approximates actual cost and includes all production costs and attributable factory overheads.

Raw materials, chemicals and fuel oil, spare parts and repair materials are valued at the lower of average cost or net realisable value and are charged to production costs whenever consumed.

The cost of purchase comprises both the purchase price and costs directly attributable to the acquisition of the inventory, such as import duties and transportation charges, less all attributable discounts or rebates.

Net realisable value is calculated based on the estimated selling price in the ordinary course of business less the estimated costs of completion and the necessary costs to make the sale

Allowance for obsolescence, slow moving or defective inventories is recorded based on the consideration of future use of those inventories and the aging analysis at the end of each reporting year.

4.4 Investments in subsidiaries, joint ventures and associates

Investments in joint ventures and associates are accounted for in the consolidated financial statements using the equity method.

Investments in subsidiaries, joint ventures and associates are accounted for in the separate financial statements using the cost method.

4.5 Investment properties

Investment properties are measured initially at cost, including transaction costs. Subsequent to initial recognition, investment properties are stated at cost less accumulated depreciation and allowance for loss on impairment (if any).

No depreciation is provided on land. Depreciation of other investment properties, which are buildings, is calculated by reference to their costs on the straight-line basis over estimated useful lives of 20 years. Depreciation of the investment properties is included in determining income.

On disposal of investment properties, the difference between the net disposal proceeds and the carrying amount of the asset is recognised in profit or loss in the period when the asset is derecognised.

4.6 Property, plant and equipment and depreciation

Land and land improvement is stated at cost. Buildings and equipment are stated at cost less accumulated depreciation and allowance for loss on impairment of assets (if any).

Depreciation of plant and equipment is calculated by reference to their costs, on the straight-line basis over the following estimated useful lives.

Buildings and building improvements	-	20 - 40 years
Machinery and pipes	-	20 - 30 years
Other machinery	-	Unit of production
Tools and factory equipment	-	10 years
Furniture, fixtures and office equipment	-	5 - 10 years
Vehicles	-	5 - 10 years

Depreciation is included in determining income.

No depreciation is provided on land, land improvement and assets under installation and construction.

An item of property, plant and equipment is derecognised upon disposal or when no future economic benefits are expected from its use or disposal. Any gain or loss arising on disposal of an asset is included in profit or loss when the asset is derecognised.

4.7 Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of an asset that necessarily takes a substantial period of time to get ready for its intended use or sale are capitalised as part of the cost of the respective assets. All other borrowing costs are expensed in the period they are incurred. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds.

4.8 Intangible assets

Intangible assets are initially recognised at cost. Following the initial recognition, the intangible assets are carried at cost less any accumulated amortisation and any accumulated impairment losses (if any).

Intangible assets with finite lives are amortised on the straight-line basis over the economic useful life and tested for impairment whenever there is an indication that the intangible asset may be impaired. The amortisation period and the amortisation method of such intangible assets are reviewed at least at each financial year end. The amortisation expense is charged to profit or loss.

A summary of the intangible assets with finite useful lives is as follows:

	<u>Useful lives</u>
Dredging expenses	10 - 20 years
Computer software	5 - 10 years

No amortisation is provided on computer software under installation.

4.9 Leases

At inception of contract, the Group assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

The Group as a lessee

The Group applied a single recognition and measurement approach for all leases, except for short-term leases and leases of low-value assets. At the commencement date of the lease (i.e. the date the underlying asset is available for use), the Group recognises right-of-use assets representing the right to use underlying assets and lease liabilities based on lease payments.

Right-of-use assets

Right-of-use assets are measured at cost, less accumulated depreciation, any accumulated impairment losses, and adjusted for any remeasurement of lease liabilities. The cost of right-of-use assets includes the amount of lease liabilities initially recognised, initial direct costs incurred, lease payments made at or before the commencement date of the lease less any lease incentives received.

Depreciation of right-of-use assets are calculated by reference to their costs, on the straight-line basis over the shorter of their estimated useful lives and the lease term.

Land	3 - 20 years
Buildings	3 years
Tank and storage	3 - 5 years
Computer and accessories	3 - 5 years
Vehicles	2 - 5 years

If ownership of the leased asset is transferred to the Group at the end of the lease term or the cost reflects the exercise of a purchase option, depreciation is calculated using the estimated useful life of the asset.

Lease liabilities

Lease liabilities are measured at the present value of the lease payments to be made over the lease term. The lease payments include fixed payments less any lease incentives receivable, variable lease payments that depend on an index or a rate, and amounts expected to be payable under residual value guarantees. Moreover, the lease payments include the exercise price of a purchase option reasonably certain to be exercised by the Group and payments of penalties for terminating the lease, if the lease term reflects the Group exercising an option to terminate. Variable lease payments that do not depend on an index or a rate are recognised as expenses in the period in which the event or condition that triggers the payment occurs.

The Group discounted the present value of the lease payments by the interest rate implicit in the lease or the Group's incremental borrowing rate. After the commencement date, the amount of lease liabilities is increased to reflect the accretion of interest and reduced for the lease payments made. In addition, the carrying amount of lease liabilities is remeasured if there is a change in the lease term, a change in the lease payments or a change in the assessment of an option to purchase the underlying asset.

Short-term leases and leases of low-value assets

A lease that has a lease term less than or equal to 12 months from commencement date or a lease of low-value assets is recognised as expenses on a straight-line basis over the lease term.

The Group as a lessor

A lease is classified as an operating lease if it does not transfer substantially all the risks and rewards incidental to ownership of an underlying asset to a lessee. Lease receivables from operating leases is recognised as income in profit or loss on a straight-line basis over the lease term. Initial direct costs incurred in obtaining an operating lease are added to the carrying amount of the underlying assets and recognised as an expense over the lease term on the same basis as the lease income.

4.10 Related party transactions

Related parties comprise individuals or enterprises that control, or are controlled by, the Company, whether directly or indirectly, or which are under common control with the Company.

They also include associates, and individuals or enterprises which directly or indirectly own a voting interest in the Company that gives them significant influence over the Company, key management personnel, directors, and officers with authority in the planning and direction of the Company's operations.

4.11 Foreign currencies

The consolidated and separate financial statements are presented in Baht, which is also the Company's functional currency.

Transactions in foreign currencies are translated into Baht at the exchange rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies are translated into Baht at the exchange rate ruling at the end of reporting period.

Gains and losses on exchange are included in determining income.

4.12 Impairment of non-financial assets

At the end of each reporting period, the Group performs annual impairment reviews in respect of the property, plant and equipment, right-of-use assets, investment properties and other intangible assets whenever events or changes in circumstances indicate that an asset may be impaired. An impairment loss is recognised when the recoverable amount of an asset, which is the higher of the asset's fair value less costs to sell and its value in use, is less than the carrying amount.

An impairment loss is recognised in profit or loss.

In the assessment of asset impairment (except for goodwill), if there is any indication that previously recognised impairment losses may no longer exist or may have decreased, the Group estimates the asset's recoverable amount. A previously recognised impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognised. The increased carrying amount of the asset attributable to a reversal of an impairment loss shall not exceed the carrying amount that would have been determined had no impairment loss been recognised for the asset in prior years. Such reversal is recognised in profit or loss.

4.13 Employee benefits

Short-term employee benefits

Salaries, wages, bonuses and contributions to the social security fund are recognised as expenses when incurred.

Post-employment benefits and other long-term employee benefits

Defined contribution plans

The Company and its employees have jointly established a provident fund. The fund is monthly contributed by employees and by the Company. The fund's assets are held in a separate trust fund and the Company's contributions are recognised as expenses when incurred.

Defined benefit plans and other long-term employee benefits

The Group has obligations in respect of the severance payments it must make to employees upon retirement under labor law and other employee benefit plan. The Group treats these severance payment obligations as a defined benefit plan. In addition, the Group provides other long-term employee benefit plan, namely gold awards plan to employees who have provided their services at their 10, 20 and 30 year anniversaries.

The obligation under the defined benefit plan and other long-term employee benefit plan is determined by a professionally qualified independent actuary based on actuarial techniques, using the projected unit credit method.

Actuarial gains and losses arising from defined benefit plans are recognised immediately in other comprehensive income.

Actuarial gains and losses arising from other long-term benefits are recognised immediately in profit and loss.

4.14 Provisions

Provisions are recognised when the Group has a present obligation as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

4.15 Treasury stock

The Group's own equity instruments that have been reacquired (treasury stock) are recognised at cost and deducted from equity. No gain or loss is recognised in profit or loss on the purchase, sale, issue or cancellation of the Group's own equity instruments. Any difference between the carrying amount and the consideration received, if reissued, is recognised in share premium.

4.16 Income tax

Income tax expense represents the sum of corporate income tax currently payable and deferred tax.

Current tax

Current income tax is provided in the accounts at the amount expected to be paid to the taxation authorities, based on taxable profits determined in accordance with tax legislation.

Deferred tax

Deferred income tax is provided on temporary differences between the tax bases of assets and liabilities and their carrying amounts at the end of each reporting period, using the tax rates enacted at the end of the reporting period.

The Group recognises deferred tax liabilities for all taxable temporary differences while it recognises deferred tax assets for all deductible temporary differences and tax losses carried forward to the extent that it is probable that future taxable profit will be available against which such deductible temporary differences and tax losses carried forward can be utilised.

At each reporting date, the Group reviews and reduces the carrying amount of deferred tax assets to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilised.

The Group records deferred tax directly to shareholders' equity if the tax relates to items that are recorded directly to shareholders' equity.

Deferred income tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred income tax assets and liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

4.17 Financial instruments

The Group initially measures financial assets at its fair value plus, in the case of financial assets that are not measured at fair value through profit or loss, transaction costs. However, trade receivables, that do not contain a significant financing component, are measured at the transaction price as disclosed in the accounting policy relating to revenue recognition.

Classification and measurement of financial assets

Financial assets are classified, at initial recognition, as to be subsequently measured at amortised cost, fair value through other comprehensive income ("FVOCI"), or fair value through profit or loss ("FVTPL"). The classification of financial assets at initial recognition is driven by the Group's business model for managing the financial assets and the contractual cash flows characteristics of the financial assets.

Financial assets at amortised cost

The Group measures financial assets at amortised cost if the financial asset is held in order to collect contractual cash flows and the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Financial assets at amortised cost are subsequently measured using the effective interest rate ("EIR") method and are subject to impairment. Gains and losses are recognised in profit or loss when the asset is derecognised, modified or impaired.

Financial assets designated at FVOCI (equity instruments)

Upon initial recognition, the Group can elect to irrevocably classify its equity investments which are not held for trading as equity instruments designated at FVOCI. The classification is determined on an instrument-by-instrument basis.

Gains and losses recognised in other comprehensive income on these financial assets are never recycled to profit or loss.

Dividends are recognised as other income in profit or loss, except when the dividends clearly represent a recovery of part of the cost of the financial asset, in which case, the gains are recognised in other comprehensive income.

Equity instruments designated at FVOCI are not subject to impairment assessment.

Financial assets at FVTPL

Financial assets measured at FVTPL are carried in the statement of financial position at fair value with net changes in fair value recognised in profit or loss.

These financial assets include derivatives, security investments held for trading, equity investments which the Group has not irrevocably elected to classify at FVOCI and financial assets with cash flows that are not solely payments of principal and interest.

Dividends on listed equity investments are recognised as other income in profit or loss.

Regular way purchases and sales of financial assets

Regular way purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the marketplace are recognised on the trade date, i.e., the date on which the Group commits to purchase or sell the asset / the settlement date, i.e., the date on which an asset is delivered.

Classification and measurement of financial liabilities

Except for derivative liabilities, at initial recognition the Group's financial liabilities are recognised at fair value net of transaction costs and classified as liabilities to be subsequently measured at amortised cost using the EIR method. Gains and losses are recognised in profit or loss when the liabilities are derecognised as well as through the EIR amortisation process. In determining amortised cost, the Group takes into account any fees or costs that are an integral part of the EIR. The EIR amortisation is included in finance costs in profit or loss.

Derecognition of financial instruments

A financial asset is primarily derecognised when the rights to receive cash flows from the asset have expired or have been transferred and either the Group has transferred substantially all the risks and rewards of the asset, or the Group has transferred control of the asset.

A financial liability is derecognised when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognised in profit or loss.

Impairment of financial assets

The Group recognises an allowance for expected credit losses ("ECLs") for all debt instruments not held at FVTPL. ECLs are based on the difference between the contractual cash flows due in accordance with the contract and all the cash flows that the Group expects to receive, discounted at an approximation of the original effective interest rate.

For credit exposures for which there has not been a significant increase in credit risk since initial recognition, ECLs are provided for credit losses that result from default events that are possible within the next 12-months (a 12-month ECLs). For those credit exposures for which there has been a significant increase in credit risk since initial recognition, a loss allowance is required for credit losses expected over the remaining life of the exposure (a lifetime ECLs).

The Group considers a significant increase in credit risk to have occurred when contractual payments are more than 30 days past due and considers a financial asset as credit impaired or default when contractual payments are 90 days past due. However, in certain cases, the Group may also consider a financial asset to have a significant increase in credit risk and to be in default using other internal or external information, such as credit rating of issuers.

For trade receivables, the Group applies a simplified approach in calculating ECLs. Therefore, the Group does not track changes in credit risk, but instead recognises a loss allowance based on lifetime ECLs at each reporting date.

ECLs are calculated based on its historical credit loss experience and adjusted for forward-looking factors specific to the debtors and the economic environment.

A financial asset is written off when there is no reasonable expectation of recovering the contractual cash flows.

Offsetting of financial instruments

Financial assets and financial liabilities are offset, and the net amount is reported in the statement of financial position if there is a currently enforceable legal right to offset the recognised amounts and there is an intention to settle on a net basis, to realise the assets and settle the liabilities simultaneously.

4.18 Derivatives

The Group uses derivatives, such as cross currency swaps, interest rate swaps and commodity derivative contracts to hedge its foreign currency risks, interest rate risks and commodity price risks, respectively.

Derivatives are initially recognised at fair value on the date on which a derivative contract is entered into and are subsequently remeasured at fair value. The subsequent changes are recognised in profit or loss. Derivatives are carried as financial assets when the fair value is positive and as financial liabilities when the fair value is negative.

Derivatives are presented as non-current assets or non-current liabilities if the remaining maturity of the instrument is more than 12 months and it is not due to be realised or settled within 12 months. Other derivatives are presented as current assets or current liabilities.

4.19 Fair value measurement

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between buyer and seller (market participants) at the measurement date. The Group applies a quoted market price in an active market to measure their assets and liabilities that are required to be measured at fair value by relevant financial reporting standards. Except in case of no active market of an identical asset or liability or when a quoted market price is not available, the Group measures fair value using valuation technique that are appropriate in the circumstances and maximises the use of relevant observable inputs related to assets and liabilities that are required to be measured at fair value.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy into three levels based on categorise of input to be used in fair value measurement as follows:

- Level 1 Use of quoted market prices in an active market for such assets or liabilities
- Level 2 Use of other observable inputs for such assets or liabilities, whether directly or indirectly
- Level 3 Use of unobservable inputs such as estimates of future cash flows

At the end of each reporting period, the Group determines whether transfers have occurred between levels within the fair value hierarchy for assets and liabilities held at the end of the reporting period that are measured at fair value on a recurring basis.

5. Significant accounting judgements and estimates

The preparation of financial statements in conformity with financial reporting standards at times requires management to make subjective judgements and estimates regarding matters that are inherently uncertain. These judgements and estimates affect reported amounts and disclosures; and actual results could differ from these estimates. Significant judgements and estimates are as follows.

Allowance for expected credit losses of trade receivables

In determining an allowance for expected credit losses of trade receivables, the management needs to make judgement and estimates based upon, among other things, past collection history, aging profile of outstanding debts and the forecast economic condition for groupings of various customer segments with similar credit risks. The Group's historical credit loss experience and forecast economic conditions may also not be representative of whether a customer will actually default in the future.

Allowance for diminution in value of inventories

Net realisable value is calculated based on the estimated selling prices by management in the ordinary course of business less the estimated costs of completion and the necessary costs to make the sale.

Calculation of recoverable amount

In the calculation of recoverable amount, the Group's management estimated the future cash flows discounted to their present value using an appropriate discount rate that reflects current market assessments of the time value of money and the risks specific to the asset.

Property, plant and equipment and depreciation

In determining depreciation of plant and equipment, the management is required to make estimates of the useful lives and residual values of the plant and equipment and to review estimate useful lives and residual values when there are any changes.

In addition, the management is required to review property, plant and equipment for impairment on a periodical basis and record impairment losses when it is determined that their recoverable amount is lower than the carrying amount. This requires judgements regarding forecast of future revenues and expenses relating to the assets subject to the review.

Deferred tax assets

Deferred tax assets are recognised for deductible temporary differences and unused tax losses to the extent that it is probable that taxable profit will be available against which the temporary differences and losses can be utilised. Significant management judgement is required to determine the amount of deferred tax assets that can be recognised, based upon the likely timing and level of estimate future taxable profits.

Impairment of investments in subsidiaries, joint ventures and associates

The Group records provision for impairment loss on investments in subsidiaries, joint ventures and associates when the indicator of impairment exists. This requires the management judgement with respect to its projections of future performance of those companies. The Group used a discounted cash flow model, based on projected information for the next 5 years and excluding any restructuring activities to which the Group is not yet committed or significant future investments that will enhance the performance of the assets.

Post-employment benefits under defined benefit plans and other long-term employee benefits

The obligation under the defined benefit plan and other long-term employee benefit plans is determined based on actuarial techniques. Such determination is made based on various assumptions, including discount rate, future salary increase rate, mortality rate and staff turnover rate.

6. Related party transactions

During the years, the Group had significant business transactions with related parties. Such transactions, which are summarised below, arose in the ordinary course of business and were concluded on commercial terms and bases agreed upon between the Group and those related parties.

	(Unit: Million Baht)			
	For the year ended 31 December			
	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<u>Transactions with subsidiary companies</u>				
(eliminated from the consolidated financial statements)				
Sales of goods and services	-	-	6,035	9,262
Purchases of goods	-	-	15	8
Selling and administrative expenses	-	-	106	143
Interest income, dividend income and other income	-	-	147	129
Interest expense and other expenses	-	-	5	8
<u>Transactions with the parent company</u>				
Sales of goods and services	883	192	883	192
Purchases of goods	242,353	166,119	242,353	166,119
Selling and administrative expenses	87	41	87	41
Interest income, dividend income and other income	9	5	9	5
Interest expense and other expenses	2	-	2	-
<u>Transactions with joint ventures</u>				
Sales of goods and services	226	84	226	84
Purchases of goods	5	2	-	-
Interest income, dividend income and other income	111	120	130	125
<u>Transactions with associates</u>				
Sales of goods and services	2,164	1,920	2,164	1,920
Purchases of goods	3,206	2,306	3,206	2,306
Selling and administrative expenses	82	82	80	82
Interest income, dividend income and other income	126	124	224	236

	(Unit: Million Baht)			
	For the year ended 31 December			
	Consolidated		Separate	
	financial statements	2021	financial statements	2021
<u>Transactions with related companies</u>				
Sales of goods and services	117,113	55,994	116,228	54,957
Purchases of goods	35,136	20,529	35,132	20,525
Sales / Purchase crude oil and raw material for crude reserve	-	571	-	571
Selling and administrative expenses	534	845	506	814
Net derivative loss	2,455	311	2,455	311
Interest income, dividend income and other income	17	575	15	573
Interest expense and other expenses	3	1	2	1

The pricing policies for particular types of transactions are as follows:

Transactions	Pricing policies
Revenue from sales and services	Market price
Purchases of raw material	Purchases of goods from a major shareholder. The major shareholder has provided services relating to the purchasing and payment process of goods. The purchase price includes a service fee charged by the major shareholder approximates the price of which the Group has procured by its own. In addition, the Company has also entered into commodity derivative contracts with a related party to protect the pricing risk regarding crude oil and petroleum products.
Selling and administrative expenses which mainly are throughout fees and tank farms rental	Contractually agreed prices
Interest income and interest expense	<u>Short-term</u> - the fixed interest rates 1-month and average interest rates 6-month of borrowing between commercial banks (BIBOR) adjusted by certain margins. <u>Long-term</u> - the weighted average interest rates of fixed deposits for four domestic commercial banks and the Minimum Loan Rate (MLR) adjusted by certain margins.
Directors' remunerations (meeting and bonus)	The rate approved by the Board of Directors and shareholders
Dividend received	As declared
Other income and other expense	Mutually agreed price

As at 31 December 2022 and 2021, the balances of the accounts between the Group and those related companies are as follows:

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2022	2021	2022	2021
Trade and other receivables - related parties (Note 8)				
<u>Trade receivables - related parties</u>				
Subsidiaries	-	-	253	363
Parent company	860	19	860	19
Joint ventures	51	37	51	37
Associates	219	200	219	200
Related companies	6,993	4,691	6,935	4,579
Total trade receivables - related parties	8,123	4,947	8,318	5,198
<u>Amounts due from related parties</u>				
Subsidiaries	-	-	27	28
Parent company	611	2,789	611	2,789
Joint ventures	110	129	110	129
Associates	1	2	1	2
Related companies	561	3	560	2
Total amounts due from related parties	1,283	2,923	1,309	2,950
Less: Allowance for expected credit losses	-	-	(10)	(10)
Total amounts due from related parties - net	1,283	2,923	1,299	2,940
Trade and other payables - related parties (Note 19)				
<u>Trade payables - related parties</u>				
Subsidiaries	-	-	1	1
Parent company	31,116	24,503	31,116	24,503
Associates	211	228	211	228
Related companies	1,832	2,760	1,832	2,760
Total trade payables - related parties	33,159	27,491	33,160	27,492
<u>Amounts due to related parties</u>				
Subsidiaries	-	-	15	17
Associates	227	189	227	189
Related companies	91	83	89	80
Total amounts due to related parties	318	272	331	286
Lease liabilities - related parties				
A subsidiary	-	-	115	226
A related company	66	3	66	3
Total Lease liabilities - related parties	66	3	181	229
Current derivative liabilities - a related party				
A related company	-	9	-	9

Loans to related parties and borrowings from related parties

As at 31 December 2022 and 2021, the balances of loans between the Group and those related companies and the movement in loans and borrowings are as follows:

Short-term loans and interest receivable from a related party

(Unit: Million Baht)

Short-term loans and interest receivable	Related by	Separate financial statements			Balance as at 31 December 2022
		Balance as at 31 December 2021	Increase during the year	Decrease during the year	
IRPC Oil Company Limited	Subsidiary	-	135	-	135

As at 31 December 2022, average interest rate of short-term loans to a related party is 1.94 percent per annum (2021: 1.20 percent per annum).

Long-term loans to related parties

(Unit: Million Baht)

Long-term loans	Related by	Separate financial statements			Balance as at 31 December 2022
		Balance as at 31 December 2021	Increase during the year	Decrease during the year	
IRPC Oil Company Limited	Subsidiary	60	-	(60)	-
IRPC Technology Co., Ltd.	Subsidiary	20	20	(10)	30
Innoplymed Co., Ltd.	Subsidiary	47	-	-	47
Total		127	20	(70)	77

As at 31 December 2022, average interest rate of long-term loans to related parties are 3.11 - 3.42 percent per annum (2021: 3.11 - 3.42 percent per annum).

Short-term borrowings and interest payable from a related party

(Unit: Million Baht)

Short-term Borrowings and interest payable	Related by	Separate financial statements			Balance as at 31 December 2022
		Balance as at 31 December 2021	Increase during the year	Decrease during the year	
IRPC Oil Company Limited	Subsidiary	55	642	(698)	-

As at 31 December 2022, average interest rate of short-term borrowings from a related party is 0.25 - 0.33 percent per annum (2021: 0.25 percent per annum).

Long-term borrowings from a related party

(Unit: Million Baht)

Long-term borrowings	Related by	Consolidated financial statements			
		Balance as at 31 December 2021	Increase during the year	Decrease during the year	Balance as at 31 December 2022
PTT Treasury	Related				
Center Co., Ltd.	company	31	1	(1)	31

As at 31 December 2022, average interest rate of long-term borrowings from a related party is 3.42 percent per annum (2021: 3.42 percent per annum).

Directors and management's benefits

During the years ended 31 December 2022 and 2021, the Group had employee benefit expenses payable to their directors and management as below.

(Unit: Million Baht)

	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Short-term employee benefits	134	70	131	67
Long-term benefits	1	1	1	1
Total	135	71	132	68

7. Cash and cash equivalents

(Unit: Million Baht)

	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Cash	-	1	-	-
Bank deposits in current accounts	75	480	75	479
Bank deposits in savings accounts	2,825	10,755	2,643	10,415
Bank deposits in fixed accounts with maturity of not more than 3 months	330	-	200	-
Total	3,230	11,236	2,918	10,894

As at 31 December 2022, bank deposits in current accounts, savings accounts and fixed deposits with maturity of not more than 3 months carried interests between 0.05 and 0.70 percent per annum (2021: 0.05 and 0.50 percent per annum). Cash and cash equivalents are mainly in Thai baht.

8. Trade and other receivables

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2022	2021	2022	2021
Trade receivables - related parties				
Aged on the basis of due dates				
Not yet due	7,884	4,911	8,078	5,172
Past due				
Up to 3 months	239	22	240	11
3 - 6 months	-	9	-	10
6 - 12 months	-	5	-	5
Over 12 months	-	-	-	-
Total trade receivables - related parties (Note 6)	8,123	4,947	8,318	5,198
Trade receivables - unrelated parties				
Aged on the basis of due dates				
Not yet due	6,761	7,533	6,613	7,319
Past due				
Up to 3 months	167	1,303	160	1,297
3 - 6 months	-	3	-	3
6 - 12 months	1	1	1	-
Over 12 months	24	28	23	22
Total	6,953	8,868	6,797	8,641
Less: Allowance for expected credit losses	(25)	(30)	(24)	(24)
Total trade receivables - unrelated parties, net	6,928	8,838	6,773	8,617
Total trade receivable - net	15,051	13,785	15,091	13,815
Other receivables				
Receivables from excise department and oil fund	5,899	1,901	5,899	1,901
Amounts due to related parties (Note 6)	1,283	2,923	1,309	2,950
Others	646	742	638	730
Total	7,828	5,566	7,846	5,581
Less: Allowance for expected credit losses	-	-	(10)	(10)
Total other receivables - net	7,828	5,566	7,836	5,571
Total trade and other receivables - net	22,879	19,351	22,927	19,386

The normal credit term given to customers is 7 to 120 days.

Set out below is the movements in the allowance for expected credit losses of trade and other receivables.

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Balance at beginning of year	30	30	34	32
Provision for expected credit losses	1	2	1	2
Amount written off	(3)	-	-	-
Amounts recovered during the year	(3)	(2)	(1)	-
Balance at end of year	25	30	34	34

The Group measures the loss allowance for trade receivables at an amount equal to lifetime ECLs. The expected credit losses on trade receivables are estimated using a provision matrix by reference to past default experience of the debtor and an analysis of the debtor's current financial position.

The Group has no significant changes in estimation and assumption method in current financial reporting period.

9. Inventories

	(Unit: Million Baht)					
	Consolidated financial statements					
	Cost		Reduce cost to net realisable value		Inventories - net	
	2022	2021	2022	2021	2022	2021
Finished goods	25,620	18,965	(1,918)	(63)	23,702	18,902
Work in process	15	20	-	-	15	20
Raw materials	10,946	8,804	(494)	(3)	10,452	8,801
Chemicals and fuel oil	2,007	1,526	(66)	(68)	1,941	1,457
Spare parts and repair materials	2,736	2,594	(1,033)	(976)	1,703	1,618
Goods in transit	1,563	2,968	-	-	1,563	2,968
Total	42,887	34,877	(3,511)	(1,111)	39,376	33,766

(Unit: Million Baht)

	Separate financial statements					
	Cost		Reduce cost to net realisable value		Inventories - net	
	2022	2021	2022	2021	2022	2021
Finished goods	25,246	18,659	(1,918)	(83)	23,328	18,596
Work in process	15	20	-	-	15	20
Raw materials	10,944	8,804	(494)	(3)	10,450	8,801
Chemicals and fuel oil	1,961	1,506	(88)	(89)	1,895	1,437
Spare parts and repair materials	2,733	2,593	(1,033)	(976)	1,700	1,617
Goods in transit	1,563	2,934	-	-	1,563	2,934
Total	42,462	34,516	(3,511)	(1,111)	38,951	33,405

During the current year, the Group reduced cost of inventories by Baht 2,400 million (2021: Baht 170 million) (the Company only: Baht 2,400 million, 2021: Baht 171 million), to reflect the net realisable value. This was included in cost of sales.

According to the Ministry of Energy's regulations, the Company is required to reserve crude oil at 5 percent of commercial volume and liquid petroleum gas at 2 percent and petroleum products at 1 percent of the total production output in each period (2021: reserve crude oil at 4 percent of commercial volume and liquid petroleum gas and petroleum products at 1 percent of the total production output in each period). As at 31 December 2022, the inventories presented in the consolidated and separate financial statements included minimum mandatory reserve on crude oil, liquid petroleum gas, and petroleum products amounting to Baht 7,058 million and Baht 7,054 million, respectively (2021: Baht 6,085 million and Baht 6,082 million in the consolidated and separate financial statements, respectively), which were net amount of allowance for diminution in value and obsolescence of inventories.

10. Other non-current financial assets

	(Unit: Million Baht)			
	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Equity instruments designated as at fair value through other comprehensive income	1,631	1,637	1,630	1,636
Equity instruments measured at fair value through other comprehensive income	52	52	52	52
Total other non-current financial assets	1,683	1,689	1,682	1,688

Equity instruments designated as at fair value through other comprehensive income include listed and non-listed equity investments which the Group considers these investments to be strategic in nature.

During 2022, the Group sold its equity interest in Bangkok Union Insurance Public Company Limited as this investment no longer coincides with the Group's investment strategy. The fair value on the date of sale was Baht 4 million and the accumulated gain recognised in other comprehensive income of Baht 1 million was transferred to retained earnings.

In addition, in 2022, the Group received dividends from equity instruments designated as at fair value through other comprehensive income, which still existed at the reporting date, amounting to Baht 6 million (2021: Baht 5 million) (the Company only: Baht 6 million, 2021: Baht 5 million).

11. Investments in subsidiaries

11.1 Details of investments in subsidiaries as presented in separate financial statements

Company's name	Paid-up capital		Shareholding percentage		Cost		Impairment of investment		Net		Dividend received during the year	
	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021
			(%)	(%)								
IRPC Oil Company Limited	2,000	2,000	99.99	99.99	2,000	2,000	-	-	2,000	2,000	-	-
IRPC Technology Co., Ltd.	750	750	99.99	99.99	750	750	(476)	(476)	274	274	-	-
Innoplymed Co., Ltd.	282	182	60.00	60.00	189	109	-	-	169	109	-	-
IRPC A&L Company Limited	10	10	57.48	57.48	14	14	-	-	14	14	47	32
IPolymer Company Limited	120	120	55.00	55.00	66	66	-	-	66	66	-	-
Total					2,999	2,939	(476)	(476)	2,523	2,483	47	32

(Unit: Million Baht)

During 2021, the Company has invested in Innopolymed Co., Ltd. which was registered as a limited company in Thailand. Innopolymed Co., Ltd. is a joint shareholding with Innobic (Asia) Co., Ltd. which is a subsidiary of PTT Public Company Limited, of which 60% owned by the Company. The main objective is to operate the business of producing, distributing non-woven fabric products, and medical consumables. Innopolymed Co., Ltd. has registered and paid-up share capital 1.82 million ordinary shares at par value of Baht 100 each, totaling Baht 182 million. The Company already paid the share capital for the investment of Baht 109 million on 20 May 2021.

On 7 January 2022, the Extraordinary General Meeting of shareholders of Innopolymed Co., Ltd. passed a resolution to increase the registered share capital from Baht 182 million to Baht 282 million by issuing new 1 million ordinary shares at par value of Baht 100 each, totaling Baht 100 million. The Company already paid share capital of Baht 60 million, in proportion to its interest, on 14 January 2022.

11.2 Non-controlling interests

Movement of non-controlling interests for the years ended 31 December 2022 and 2021 are summarised below.

	(Unit: Million Baht)	
	Consolidated financial statements	
	2022	2021
Balance at beginning of year	217	140
Dividends paid	(35)	(24)
Share of gain for the year	3	28
Increase in portion of investment of non-controller of a subsidiary	40	73
Balance at end of year	225	217

12. Investments in joint ventures

12.1 Details of investments in joint ventures

Investments in joint ventures represent investments in entities which are jointly controlled by the Company and other companies. Details of these investments are as follows:

		(Unit: Million Baht)						
		Consolidated financial statements						
Joint ventures	Nature of business	Country of incorporation	Shareholding percentage		Cost		Carrying amounts based on equity method	
			2022 (%)	2021 (%)	2022	2021	2022	2021
WIA Industrial Estate Rayong Company Limited	Industrial estate development	Thailand	40.00	40.00	284	272	274	264
IRPC Polyol Company Limited	Manufacturing and sales of chemical products for polyurethanes	Thailand	50.00	50.00	185	185	83	64
Mytex Polymers (Thailand) Company Limited	Manufacturing and sales of chemical products	Thailand	50.00	50.00	350	350	357	352
Vajira Lab for Society Co., Ltd.	Provide analysis and certification services for medical devices	Thailand	50.00	50.00	14	11	12	11
Total					833	818	726	691

(Unit: Million Baht)

Joint ventures	Nature of business	Country of incorporation	Separate financial statements							
			Shareholding percentage		Cost		Allowance for impairment of investments		Carrying amounts based on cost method - net	
			2022 (%)	2021 (%)	2022	2021	2022	2021	2022	2021
WHA Industrial Estate Rayong Company Limited	Industrial estate development	Thailand	40.00	40.00	284	272	-	-	284	272
IRPC Polycl Company Limited	Manufacturing and sales of chemical products for polyurethanes	Thailand	50.00	50.00	185	185	(150)	(150)	35	35
Mytex Polymers (Thailand) Company Limited	Manufacturing and sales of chemical products	Thailand	50.00	50.00	350	350	-	-	350	350
Vajira Lab for Society Co., Ltd.	Provide analysis and certification services for medical devices	Thailand	50.00	50.00	14	11	-	-	14	11
Total					833	818	(150)	(150)	683	668

- a. On 20 July 2020, the Extraordinary General Meeting of shareholders of WHA Industrial Estate Rayong Co., Ltd. ("WHAIER") passed a resolution to increase the registered share capital from Baht 650 million to be Baht 710 million by issuing new 6 million ordinary shares at par value of Baht 10 each totaling Baht 60 million to its existing shareholders in proportion to their holdings, in which the Company interest is 40 percent. WHAIER called up the first tranche of the share capital, which was 25 percent of the increased registered capital, or Baht 15 million. The Company paid in share capital for the investment in joint venture of Baht 6 million on 30 July 2020.

On 26 August 2021, the Board of Directors' meeting of WHAIER passed a resolution to call up the second tranche of the share capital, which was 25 percent of the increased registered capital, or Baht 15 million. The Company paid in share capital for the investment in joint venture of Baht 6 million on 29 October 2021.

During 2022, on 18 March 2022, the Board of Directors' meeting of WHAIER passed a resolution to call up the third tranche of the share capital, which was 25 percent of the increased registered capital, or Baht 15 million. The Company paid in share capital for the investment in joint venture of Baht 6 million on 29 April 2022.

On 19 September 2022, the Board of Directors' meeting of WHAIER passed a resolution to call up the last tranche of the share capital, which was 25 percent of the increased registered capital, or Baht 15 million. The Company paid in share capital for the investment in joint venture of Baht 6 million on 4 November 2022.

- b. On 11 March 2022, the Annual General Meeting of shareholders of Vajira Lab for Society Co., Ltd. No. 1/2022 passed a resolution to increase the registered share capital from Baht 22 million to be Baht 28 million by issuing 60,000 new ordinary shares at par value of Baht 100 each, totalling Baht 6 million to its existing shareholders in proportion to their holding, in which the Company interest is 50 percent. The Company paid in share capital of Baht 3 million on 18 March 2022.

12.2 Share of comprehensive income and dividend received

During the years, the Company recognised its share of comprehensive income from investments in the joint ventures in the consolidated financial statements and dividend received in the separate financial statements as follows:

(Unit: Million Baht)

Joint ventures	Consolidated financial statements		Separate financial statements	
	Share of profit (loss) from investments in joint ventures during the year		Dividend received during the year	
	2022	2021	2022	2021
WHA Industrial Estate Rayong Company Limited	(2)	(3)	-	-
IRPC Polylol Company Limited	19	39	-	-
Mytex Polymers (Thailand) Company Limited	24	30	19	5
Vajira Lab for Society Co., Ltd.	(2)	-	-	-
Total	39	66	19	5

13. Investments in associates

13.1 Details of investments in associates

(Unit: Million Baht)

Company's name	Nature of business	Country of incorporation	Consolidated financial statements					
			Shareholding percentage		Cost		Carrying amounts based on equity method	
			2022	2021	2022	2021	2022	2021
			(%)	(%)				
PTT Energy Solutions Co., Ltd.	Engineering consulting	Thailand	20.00	20.00	30	30	11	32
UBE Chemicals (Asia) Public Company Limited	Manufacturing and sales of petrochemical products	Thailand	25.00	25.00	5,300	5,300	4,594	4,870
IRPC Clean Power Company Limited	Manufacturing and sales of electricity and steam	Thailand	48.99	48.99	1,647	1,647	4,141	3,701
Total					6,977	6,977	8,746	8,603

(Unit: Million Baht)

Company's name	Nature of business	Country of incorporation	Shareholding percentage		Separate financial statements				Carrying amounts based on cost method - net	
			2022	2021	Cost		Allowance for impairment of investments		2022	2021
			(%)	(%)	2022	2021	2022	2021	2022	2021
PTT Energy Solutions Co., Ltd.	Engineering consulting	Thailand	20.00	20.00	30	30	(10)	-	20	30
UBE Chemicals (Asia) Public Company Limited	Manufacturing and sales of petrochemical products	Thailand	25.00	25.00	5,300	5,300	-	-	5,300	5,300
IRPC Clean Power Company Limited	Manufacturing and sales of electricity and steam	Thailand	48.99	48.99	1,647	1,647	-	-	1,647	1,647
Total					6,977	6,977	(10)	-	6,967	6,977

On 25 July 2022, a meeting of the Company's Board of Directors passed a resolution approving the dissolution of an associate, namely PTT Energy Solutions Co., Ltd. ("PTTES") with a registered capital of Baht 150 million. The Company held 20 percent of this company's shares, amounting to Baht 30 million. The dissolution was in accordance with PTT Group's business restructuring policy. On 29 August 2022, an Extraordinary General Meeting of Shareholders of PTTES approved the dissolution, of which registration with the Ministry of Commerce is completed on 29 December 2022. The dissolution of the associate has no effect on the Company's operations. As at 31 December 2022, the Company recorded impairment of investment in associate of Baht 10.2 million in the separate financial statements, taking into account the recoverable amount of the investment.

13.2 Share of comprehensive income and dividend received

During the years, the Company has recognised its share of comprehensive income from investments in associates in the consolidated financial statements and dividend received in the separate financial statements as follows:

(Unit: Million Baht)

Associates	Consolidated financial statements				Separate financial statements	
	Share of profit (loss) from investments in associates during the year		Share of other comprehensive income from investments in associates during the year		Dividend received during the year	
	2022	2021	2022	2021	2022	2021
PTT Energy Solutions Co., Ltd.	(13)	(10)	(4)	-	4	-
UBE Chemicals (Asia) Public Company Limited	(182)	163	-	2	94	-
IRPC Clean Power Company Limited	440	494	-	(4)	-	113
Total	245	647	(4)	(2)	98	113

13.3 Summarised financial information about material associates

Summarised financial position

	(Unit: Million Baht)			
	UBE Chemicals (Asia) Public Company Limited		IRPC Clean Power Company Limited	
	2022	2021	2022	2021
Current assets	6,940	8,397	3,302	2,019
Non-current assets	7,072	6,893	10,615	10,373
Current liabilities	1,350	1,670	1,648	1,506
Non-current liabilities	218	230	4,214	4,561
Net assets	12,444	13,390	8,145	7,225
Shareholding percentage (%)	25.00	25.00	48.99	48.99
Carrying amounts of associates based on equity method	3,111	3,348	3,990	3,540

Summarised comprehensive income

	(Unit: Million Baht)			
	For the year ended 31 December			
	UBE Chemicals (Asia) Public Company Limited		IRPC Clean Power Company Limited	
	2022	2021	2022	2021
Revenue	14,445	13,837	9,361	6,290
Net profit (loss) during the year	(570)	808	914	1,019
Other comprehensive income	-	7	-	-
Total comprehensive income	(570)	815	914	1,019

14. Investment properties

Movement of investment properties for the year ended 31 December 2022 and 2021 are presented below.

	(Unit: Million Baht)				
	Consolidated financial statements			Separate financial statements	
	Land	Buildings	Total	Land	Total
Cost					
1 January 2021	986	18	1,004	938	938
31 December 2021	986	18	1,004	938	938
31 December 2022	986	18	1,004	938	938
Accumulated depreciation					
1 January 2021	-	18	18	-	-
31 December 2021	-	18	18	-	-
31 December 2022	-	18	18	-	-
Allowance for impairment					
1 January 2021	64	-	64	52	52
31 December 2021	64	-	64	52	52
Decrease during the year	(17)	-	(17)	(17)	(17)
31 December 2022	47	-	47	35	35
Net book value					
31 December 2021	922	-	922	886	886
31 December 2022	939	-	939	903	903

The additional information of the investment properties as at 31 December 2022 and 2021 stated below.

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2022	2021	2022	2021
The fair value of land	1,140	1,140	1,104	1,104
The fair value of buildings	9	9	-	-
Total	1,149	1,149	1,104	1,104

The fair value of the above investment properties has been determined based on valuation performed by an accredited independent valuer. The fair value of land and buildings has been determined based on market prices. Key assumptions used in the valuation include market price per square wah, trading price, investment value and value in use.

15. Property, plant and equipment

Movements of property, plant and equipment for the years ended 31 December 2022 and 2021 are summarised below.

	Consolidated financial statements							(Unit: Million Baht)
	Land and land improvements	Buildings and building improvements	Machinery and pipes	Tools and factory equipment	Furniture, fixtures and office equipment	Vehicles	Assets under installation and construction	
Cost								
1 January 2021	11,795	41,238	150,848	3,448	1,291	681	3,157	212,549
Additions	-	11	327	52	11	-	2,548	2,949
Disposals/Write off	-	(72)	(397)	(2)	(93)	(10)	-	(574)
Transfers in (out)	-	291	1,306	11	34	-	(1,642)	-
31 December 2021	11,795	41,458	152,185	3,509	1,343	671	4,063	214,924
Additions	-	10	630	42	22	1	9,481	10,186
Disposals/Write off	-	-	(3,015)	(18)	(22)	(1)	(131)	(3,187)
Transfer in (out)	-	242	3,555	4	81	-	(3,862)	-
Capitalised interest	-	-	-	-	-	-	115	115
31 December 2022	11,795	41,710	153,355	3,537	1,324	671	9,648	222,038
Accumulated depreciation								
1 January 2021	-	19,681	73,754	2,384	953	616	-	97,368
Depreciation for the year	-	1,367	6,639	196	107	19	-	8,328
Depreciation on disposals/write off	-	(94)	(302)	(2)	(92)	(10)	-	(470)
31 December 2021	-	20,954	80,091	2,578	968	625	-	105,246
Depreciation for the year	-	1,374	6,127	181	103	17	-	7,802
Depreciation on disposals/write off	-	-	(3,013)	(18)	(21)	(1)	-	(3,053)
31 December 2022	-	22,358	83,205	2,741	1,550	641	-	109,995

	Separate financial statements						(Unit: Million Baht)	
	Land and land improvements	Buildings and building improvements	Machinery and pipes	Tools and factory equipment	Furniture, fixtures and office equipment	Vehicles		Assets under installation and construction
Cost								
1 January 2021	11,159	39,421	150,609	2,605	1,141	501	2,885	208,431
Additions	-	-	287	52	9	-	2,463	2,781
Disposals/Write off	-	(72)	(397)	(1)	(92)	(9)	-	(571)
Transfers in (out)	-	287	1,304	8	32	-	(1,631)	-
31 December 2021	11,159	39,636	151,783	2,664	1,090	492	3,827	210,651
Additions	-	10	630	41	21	-	9,288	9,990
Disposals/Write off	-	-	(3,015)	(16)	(22)	(1)	(130)	(3,184)
Transfer in (out)	-	101	3,554	1	74	-	(3,730)	-
Capitalised interest	-	-	-	-	-	-	114	114
31 December 2022	11,159	39,747	152,852	2,690	1,163	491	9,369	217,571
Accumulated depreciation								
1 January 2021	-	18,240	73,757	1,627	869	437	-	96,130
Depreciation for the year	-	1,357	6,625	145	96	19	-	8,242
Depreciation on disposals/write off	-	(64)	(302)	(1)	(82)	(9)	-	(468)
31 December 2021	-	19,533	80,080	1,971	873	447	-	102,904
Depreciation for the year	-	1,361	6,107	131	83	16	-	7,708
Depreciation on disposals/write off	-	-	(3,013)	(16)	(20)	(1)	-	(3,050)
31 December 2022	-	20,894	83,174	2,088	946	462	-	107,562

For the year ended 31 December 2022, the Group capitalised borrowing costs into the construction project of Baht 115 million (2021: Baht 42 million) (the Company only: Baht 114 million, 2021: Baht 42 million) arising from financing specifically for the construction of new factories. The Group used the capitalisation rates between 3.01 percent and 5.35 percent (2021: between 3.00 percent and 3.44 percent) to calculate the capitalised borrowing costs.

As at 31 December 2022, certain items of plant and equipment were fully depreciated but are still in use. The gross carrying amount before deducting accumulated depreciation and allowance for impairment loss of those assets amounted to approximately Baht 19,215 million (2021: Baht 15,675 million) (the Company only: Baht 18,662 million, 2021: Baht 15,159 million).

16. Intangible assets

Movements of intangible assets for the years ended 31 December 2022 and 2021 are summarised below.

	(Unit: Million Baht)			
	Consolidated financial statements			
	Dredging expenses	Computer software	Computer software under installation	Total
Cost				
1 January 2021	454	1,423	226	2,103
Additions	-	1	128	129
Transfers in (out)	-	108	(108)	-
31 December 2021	454	1,532	246	2,232
Additions	-	6	73	79
Transfers in (out)	-	78	(78)	-
31 December 2022	454	1,616	241	2,311
Accumulated amortisation				
1 January 2021	279	1,050	-	1,329
Amortisation for the year	24	118	-	142
31 December 2021	303	1,168	-	1,471
Amortisation for the year	23	122	-	145
31 December 2022	326	1,290	-	1,616
Net book value				
31 December 2021	151	364	246	761
31 December 2022	128	326	241	695
Amortisations for the year				
2021 (Baht 56 million included in cost of sales and services, and the balance in administrative expenses)				142
2022 (Baht 55 million included in cost of sales and services, and the balance in administrative expenses)				145

	(Unit: Million Baht)			
	Separate financial statements			
	Dredging expenses	Computer software	Computer software under installation	Total
Cost				
1 January 2021	454	1,415	198	2,067
Additions	-	1	122	123
Transfers in (out)	-	75	(75)	-
31 December 2021	454	1,491	245	2,190
Additions	-	5	73	78
Transfers in (out)	-	79	(79)	-
31 December 2022	454	1,575	239	2,268
Accumulated amortisation				
1 January 2021	279	1,045	-	1,324
Amortisation for the year	24	118	-	140
31 December 2021	303	1,161	-	1,464
Amortisation for the year	23	118	-	141
31 December 2022	326	1,279	-	1,605
Net book value				
31 December 2021	151	330	245	726
31 December 2022	128	296	239	663
Amortisation for the year				
2021 (Baht 56 million included in cost of sales and services, and the balance in administrative expenses)				140
2022 (Baht 55 million included in cost of sales and services, and the balance in administrative expenses)				141

As at 31 December 2022, certain items of computer software were fully amortised but are still in use. The gross carrying amount before deducting accumulated amortisation of those assets amounted to approximately Baht 1,217 million (2021: Baht 1,019 million) in the consolidated and separate financial statements.

17. Other non-current assets

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2022	2021	2022	2021
Prepaid expense	-	152	-	152
Advance payment for assets	287	99	287	99
Others	30	30	28	27
Total	317	281	315	278

18. Short-term borrowings from financial institutions

As at 31 December 2022, the short-term borrowings from financial institutions are unsecured promissory notes which carried interest at the rate between 1.95 and 2.05 percent per annum (2021: Nil) and due for repayments within January to February 2023.

19. Trade and other payables

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2022	2021	2022	2021
Trade payables - related parties (Note 6)	33,159	27,491	33,160	27,492
Trade payables - unrelated parties	1,307	1,180	1,286	1,138
Amounts due to related parties	318	272	331	286
Accounts payable - Acquisition of fixed assets	1,565	328	1,564	328
Accounts payable - Excise department and oil fund	675	697	675	697
Accounts payable - Revenue department	151	162	147	154
Accounts payable - Commodity derivative contracts	165	577	165	577
Employment restructuring obligations (Note 23)	225	343	225	343
Others	1,462	1,132	1,402	1,070
Total trade and other payables	39,027	32,182	38,955	32,085

20. Borrowings

20.1 Long-term borrowings from financial institutions

As at 31 December 2022 and 2021, the long-term borrowings from financial institutions are summarised as follows:

Loan	Interest rate (percent per annum)	Repayment schedule	(Unit: Million Baht)			
			Consolidated		Separate	
			2022	2021	2022	2021
1	6-month fixed deposit rate plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in October 2023.	4,495	4,493	4,495	4,493
2	6-month fixed deposit rate (4 banks averaged) plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in November 2020.	7,488	10,494	7,498	10,494
3	6-month fixed deposit rate plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 2023.	2,995	2,995	2,995	2,995
4	6-month fixed deposit rate plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in March 2022.	1,999	2,498	1,999	2,498
5	6-month fixed deposit rate (4 banks averaged) plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in June 2016.	-	1,250	-	1,250
6	6-month fixed deposit rate plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in September 2017.	-	300	-	300
7	6-month fixed deposit rate plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in October 2023.	1,548	1,547	1,548	1,547
8	6-month fixed deposit rate plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in December 2022.	2,697	2,995	2,697	2,995
9	6-month fixed deposit rate plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in May 2020.	2,000	2,999	2,000	2,999
10	6-month fixed deposit rate plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in December 2018.	1,500	2,399	1,500	2,399
11	6-month THBFIX plus margin	Principal is repayable every 3 months, totalling 14 instalments, commencing in April 2023.	449	449	449	449
12	1-month USD LIBOR plus margin	Principal is repayable every 6 months, totalling 9 instalments, commencing in June 2020.	3,467	4,688	3,467	4,688
Total			28,649	37,107	28,649	37,107
Less: Current portion			(8,763)	(8,586)	(8,763)	(8,586)
Long-term borrowings - net of current portion			19,886	28,521	19,886	28,521

Details of long-term borrowings from financial institutions

As at 31 December 2022 and 2021, the Company has entered into the following long-term borrowing agreements with financial institutions are summarised as follows:

1. On 1 July 2019, the Company entered into the unsecured Facility Agreement of Baht 3,500 million with a local financial institution. The agreement is for a period of 8 years with an interest rate at 6-month fixed deposit rate plus a certain margin per annum. The interest is payable monthly whereas the principal repayment is separated into 10 semi-annually installments, starting from October 2023 (the 42nd months from the first draw down). The facility was fully drawn down.

On 5 July 2019, the Company entered into the unsecured Facility Agreement of Baht 1,000 million with a local financial institution. The agreement is for a period of 8 years with an interest rate at 6-month fixed deposit rate plus a certain margin per annum. The interest is payable monthly whereas the principal repayment is separated into 10 semi-annually installments, starting from October 2023 (the 42nd month from the first draw down). The facility was fully drawn down.

2. Unsecured loans with facilities of Baht 15,000 million with 4 local financial institutions are for a period of 8 years from the first draw down with the interest rate of the average maximum 6-month fixed deposit rate of 4 commercial banks plus a certain margin per annum. The interest is payable monthly whereas the principal repayment is separated into 10 semi-annually installments, starting from 30 November 2020 (the 42nd month from the first draw down). The facilities were fully drawn down.
3. On 1 July 2019, the Company entered into the unsecured Facility Agreement of Baht 3,000 million with a local financial institution. The agreement is for a period of 8 years with an interest rate at 6-month fixed deposit rate plus a certain margin per annum. The interest is payable monthly whereas the principal repayment is separated into 10 semi-annually installments, starting from June 2023. The facility was fully drawn down.
4. On 1 July 2019, the Company entered into the unsecured Facility Agreement of Baht 2,500 million with a local financial institution. The agreement is for a period of 7 years with an interest rate at 6-month fixed deposit rate plus a certain margin per annum. The interest is payable semi-annually whereas the principal repayment is separated into 10 semi-annually installments, starting from March 2022. The facility was fully drawn down.

5. Unsecured loans with facilities of Baht 10,000 million with 3 local financial institutions are for a period of 8 years with the interest rate of the average maximum 6-month fixed deposit rate of 4 commercial banks plus a certain margin per annum. The interest is payable monthly whereas the principal repayment is separated into 12 semi-annually installments, starting from June 2016. The facilities were fully drawn down.
6. Unsecured loans with facilities of Baht 3,000 million with a local financial institution are for a period of 8 years with the interest rate of the maximum 6-month fixed deposit rate of an individual plus a certain margin per annum. The interest is payable semi-annually whereas the principal repayment is separated into 10 semi-annually installments, starting from 30 September 2017 (the 42nd month from the loan agreement date). The facilities were fully drawn down.
7. On 1 July 2019, the Company entered into the unsecured Facility Agreement of Baht 1,550 million with a local financial institution. The agreement is for a period of 8 years with an interest rate at 6-month fixed deposit rate plus a certain margin per annum. The interest is payable monthly whereas the principal repayment is separated into 10 semi-annually installments, starting from October 2023 (the 42nd month from the first draw down). The facility was fully drawn down.
8. On 1 July 2019, the Company entered into the unsecured Facility Agreement of Baht 3,000 million with a local financial institution. The agreement is for a period of 8 years with an interest rate at 6-month fixed deposit rate plus a certain margin per annum. The interest is payable monthly whereas the principal repayment is separated into 10 semi-annually installments, starting from December 2022. The facility was fully drawn down.
9. Unsecured loans with facilities of Baht 5,000 million with a local financial institution are for a period of 8 years from the first draw down with the interest rate of the maximum 6-month fixed deposit rate of an individual plus a certain margin per annum. The interest is payable monthly whereas the principal repayment is separated into 10 semi-annually installments, starting from 31 May 2020 (the 42nd month from the first draw down). The facilities were fully drawn down.
10. Unsecured loans with facilities of Baht 4,000 million with a local financial institution are for a period of 8 years from the first draw down with the interest rate of the maximum 6-month fixed deposit rate plus a certain margin per annum. The interest is payable monthly whereas the principal repayment is separated into 12 semi-annually installments, starting from 28 December 2018 (the 30th month from the first draw down). The facilities were fully drawn down.

11. On 1 July 2019, the Company entered into the unsecured Facility Agreement of Baht 450 million with a local financial institution. The agreement is for a period of 7 years with an interest rate at 6-month THBFIX plus a certain margin per annum. The interest is payable on 3 months basis whereas the principal repayment is separated into 14 quarterly installments, starting from April 2023. The facility was fully drawn down.
12. On 29 June 2018, the Company entered into the Facility Agreement of US Dollar 200 million with two financial institutions. The agreement is for a period of 7 years with an interest rate at LIBOR plus a certain margin per annum. The interest is payable monthly whereas the principal repayment is separated into 9 semi-annually installments, starting from June 2020. The facility was fully drawn down.

Movements of the long-term borrowings account for the years ended 31 December 2022 and 2021 are summarised below.

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Balance at beginning of year	37,107	43,058	37,107	43,058
Repayment of borrowings	(8,650)	(6,450)	(8,650)	(6,450)
Realised loss on exchange	56	-	56	-
Unrealised loss on exchange	114	474	114	474
Amortisation of deferred				
financing fees	22	25	22	25
Balance at end of year	<u>28,649</u>	<u>37,107</u>	<u>28,649</u>	<u>37,107</u>

Under the Facility Agreements, the Group has to comply with the covenants and conditions including the maintenance of certain financial conditions as specified in the agreements such as the maintenance of Debt-to-Equity Ratio and the maintenance of Debt Service Coverage Ratio. As at 31 December 2022 and 2021, the Company has fully complied with such conditions.

20.2 Debentures

As at 31 December 2022 and 2021, the debentures of the Group are summarised as follows:

Debentures	Interest rate (Percent per annum)	Repayment schedule	Consolidated		Separate	
			financial statements	2021	financial statements	2021
			2022	2021	2022	2021
1	Fixed	5 years, maturity on 11 September 2025	3,997	3,996	3,997	3,996
2	Fixed	2 years, maturity on 11 September 2022	-	1,999	-	1,999
3	Fixed	3 years, maturity on 11 September 2023	1,999	1,998	1,999	1,998
4	Fixed	10 years, maturity on 11 September 2030	1,298	1,298	1,298	1,298
5	Fixed	15 years, maturity on 11 September 2035	2,697	2,697	2,697	2,697
6	Fixed	5 years, maturity on 20 May 2026	3,996	3,995	3,996	3,995
7	Fixed	3 years, maturity on 20 May 2024	1,999	1,998	1,999	1,998
8	Fixed	7 years, maturity on 20 May 2028	1,998	1,997	1,998	1,997
9	Fixed	10 years, maturity on 20 May 2031	1,998	1,997	1,998	1,997
10	Fixed	15 years, maturity on 20 May 2036	1,997	1,997	1,997	1,997
11	Fixed	5 years, maturity on 20 May 2027	6,991	-	6,991	-
12	Fixed	4 years, maturity on 20 May 2026	499	-	499	-
13	Fixed	7 years, maturity on 20 May 2029	749	-	749	-
14	Fixed	10 years, maturity on 20 May 2032	1,498	-	1,498	-
15	Fixed	12 years, maturity on 20 May 2034	2,247	-	2,247	-
Total			33,963	23,972	33,963	23,972
Less: Current portion			(1,999)	(1,999)	(1,999)	(1,999)
Debentures - net of current portion			31,964	21,973	31,964	21,973

(Unit: Million Baht)

Details of debentures

As at 31 December 2022 and 2021, the Company issued debentures are as follows.

On 11 September 2020, the Company issued debentures which are non-subordinated, unsecured with a debenture holders' representative in the name-registered certificate for 5 tranches totaling Baht 12,000 million where Tranche 1 and Tranche 2 were offered to general investors totaling Baht 6,000 million and Tranche 3 to Tranche 5 were offered to the limited institutional investors and/or high net worth totaling Baht 6,000 million, respectively.

The details are as follows:

Tranche 1 amounting to Baht 2,000 million for 3 years with a fixed interest rate at 3.00 percent per annum, it will be matured on 11 September 2023.

Tranche 2 amounting to Baht 4,000 million for 5 years with a fixed interest rate at 3.50 percent per annum, it will be matured on 11 September 2025.

Tranche 3 amounting to Baht 2,000 million for 2 years with a fixed interest rate at 2.76 percent per annum, it will be matured on 11 September 2022.

Tranche 4 amounting to Baht 1,300 million for 10 years with a fixed interest rate at 3.93 percent per annum, it will be matured on 11 September 2030.

Tranche 5 amounting to Baht 2,700 million for 15 years with a fixed interest rate at 4.40 percent per annum, it will be matured on 11 September 2035.

Interest is payable on every 11 March and 11 September throughout the debentures' period for all tranches.

On 20 May 2021, the Company issued debentures which are non-subordinated, unsecured with a debenture holders' representative in the name-registered certificate for 5 tranches totaling Baht 12,000 million where Tranche 1 offered to general investors of Baht 4,000 million and Tranche 2 to Tranche 5 were offered to limited institutional investors and/or high net worth totaling Baht 8,000 million, respectively.

The details are as follows:

Tranche 1 amounting to Baht 4,000 million for 5 years with a fixed interest rate at 3.00 percent per annum, it will be matured on 20 May 2026.

Tranche 2 amounting to Baht 2,000 million for 3 years with a fixed interest rate at 1.77 percent per annum, it will be matured on 20 May 2024.

Tranche 3 amounting to Baht 2,000 million for 7 years with a fixed interest rate at 2.91 percent per annum, it will be matured on 20 May 2028.

Tranche 4 amounting to Baht 2,000 million for 10 years with a fixed interest rate at 3.38 percent per annum, it will be matured on 20 May 2031.

Tranche 5 amounting to Baht 2,000 million for 15 years with a fixed interest rate at 4.10 percent per annum, it will be matured on 20 May 2036.

Interest is payable on every 20 May and 20 November throughout the debentures' period for all tranches.

On 20 May 2022, the Company issued debentures which are non-subordinated, unsecured with a debenture holders' representative in the name-registered certificate for 6 tranches totaling Baht 12,000 million whereby Digital debenture and Tranche 1 totaling Baht 7,000 million were offered to general investors and Green debenture and Tranche 2 to Tranche 4 were offered to institutional investors and/or high net worth investors totaling Baht 5,000 million, respectively.

The details of debentures are as follows:

- Digital debenture of Baht 1,000 million with a tenor of 5 years, a fixed interest rate of 3.10 percent per annum and a maturity date on 20 May 2027
- Tranche 1 of Baht 6,000 million, with a tenor of 5 years, a fixed interest rate of 3.10 percent per annum and a maturity date on 20 May 2027
- Tranche 2 of Baht 500 million, with a tenor of 4 years, a fixed interest rate of 3.03 percent per annum and a maturity date on 20 May 2026
- Green debenture of Baht 750 million, with a tenor of 7 years, a fixed interest rate of 4.17 percent per annum and a maturity date on 20 May 2029
- Tranche 3 of Baht 1,500 million, with a tenor of 10 years, a fixed interest rate of 4.52 percent per annum and a maturity date on 20 May 2032
- Tranche 4 of Baht 2,250 million, with a tenor of 12 years, a fixed interest rate of 4.86 percent per annum and a maturity date on 20 May 2034

Interests for all tranches are payable on every 20 May and 20 November throughout the debenture period.

Movements of the debentures account for the years ended 31 December 2022 and 2021 are as follows:

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Balance at beginning of year	23,972	18,873	23,972	18,873
Issuance of debentures	12,000	12,000	12,000	12,000
Repayment of debentures	(2,000)	(6,890)	(2,000)	(6,890)
Financing fee from issuing debentures	(17)	(17)	(17)	(17)
Amortisation of financing fee from issuing debentures	8	6	8	6
Balance at end of year	<u>33,963</u>	<u>23,972</u>	<u>33,963</u>	<u>23,972</u>

Under the terms of the debentures, the Company had to comply with certain conditions as stipulated, such as not creating any future lien on assets of the Group, maintaining direct and indirect ownership interest of PTT Public Company Limited in the Company, maintaining debt-to-equity ratio, etc. As at 31 December 2022 and 2021, the Group has fully fulfilled such conditions.

20.3 Interest rates on borrowings and debentures

The interest rates on borrowings and debentures of the Group as at 31 December 2022 and 2021, are as follows:

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Effective interest rate (%)				
Debentures	1.77 - 4.86	1.77 - 4.40	1.77 - 4.86	1.77 - 4.40
Long-term borrowings from financial institutions	1.36 - 5.64	1.35 - 2.97	1.36 - 5.64	1.35 - 2.97

20.4 Credit facilities

The Group has credit facilities with the commercial banks and a major shareholder (excluding long-term borrowings) totaling Baht 23,000 million and Baht 10,000 million, respectively, with market interest rates. As at 31 December 2022, the Group has unused credit facilities with the commercial banks and a major shareholder of Baht 2,464 million and Baht 10,000 million, respectively (2021: Baht 8,353 million and Baht 10,000 million, respectively).

21. Leases

21.1 The Group as a lessee

The Group has lease contracts for various items of property, plant, and equipment used in its operations. Leases generally have lease terms between 2 and 20 years.

a) Right-of-use assets

Movements of right-of-use assets for the years ended 31 December 2022 and 2021 are summarised below.

(Unit: Million Baht)

	Consolidated financial statements				
	Land	Buildings	Computer and accessories		Total
			Vehicles		
1 January 2021	38	40	-	120	198
Additions	-	-	5	138	143
Depreciation for the year	(5)	(35)	-	(76)	(116)
31 December 2021	33	5	5	182	225
Additions	-	97	8	30	135
Depreciation for the year	(5)	(34)	(1)	(72)	(112)
31 December 2022	28	68	12	140	248

(Unit: Million Baht)

	Separate financial statements				
	Land	Buildings	Computer and Tank and storage		Total
			accessories	Vehicles	
1 January 2021	39	37	-	113	189
Increase	-	90	246	5	472
Decrease	-	-	-	(1)	(1)
Depreciation for the year	(5)	(63)	(82)	(72)	(223)
31 December 2021	33	64	164	5	437
Increase	-	95	-	8	128
Depreciation for the year	(5)	(63)	(82)	(1)	(218)
31 December 2022	28	96	82	12	347

b) Lease liabilities

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Lease payments	256	234	359	456
Less: Deferred interest expenses	(10)	(12)	(11)	(18)
Total	246	222	348	438
Less: Portion due within one year	(102)	(81)	(212)	(188)
Lease liabilities - net of current portion	144	141	136	250

Movements of the lease liability account during the years ended 31 December 2022 and 2021 are summarised below.

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Balance at beginning of year	222	189	438	179
Additions	142	152	133	493
Accretion of interest	(5)	(9)	(5)	(22)
Repayments	(113)	(110)	(218)	(212)
Balance at end of year	246	222	348	438

The Group does not face a significant liquidity risk with regard to its lease liabilities. A maturity analysis of lease payments is disclosed in Note 39.2 to consolidated financial statements under the liquidity risk.

c) Expenses relating to leases that are recognised in profit or loss

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Depreciation expense of right-of-use assets	112	116	218	223
Interest expense on lease liabilities	7	6	12	14
Expense relating to short-term leases	15	14	16	15
Expense relating to leases of low-value assets	48	50	47	49
Expense relating to variable lease payments that do not depend on an index or a rate	38	35	38	35

The Group has lease contracts for office equipment and vehicle that contains variable payments based on usage and distance. The lease term is 5 - 10 years.

d) Others

The Group had total cash outflows for leases for the year ended 31 December 2022 of Baht 113 million (2021: Baht 110 million) (the Company only: Baht 218 million, 2021: Baht 212 million), including the cash outflow related to short-term lease, leases of low-value assets and variable lease payments that do not depend on an index or a rate.

21.2 Group as a lessor

The Group has entered into operating leases for its investment property portfolio consisting of land and building (see Note 14 to consolidated financial statements) of the lease terms are between 1 and 22 years.

The Group has future minimum rentals receivable under non-cancellable operating leases as at 31 December 2022 and 2021 as follows:

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Within 1 year	24	31	32	33
Over 1 and up to 5 years	44	67	47	70
Over 5 years	98	106	98	106
Total	166	204	177	209

During 2022, the Group has sub-lease income amounting to Baht 8 million (2021: Baht 8 million) (the Company only: Baht 8 million, 2021: Baht 8 million).

22. Provision for long-term employee benefits

Provision for long-term employee benefits, which represents compensation payable to employees after they retire, was as follows:

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Provision for long-term employee				
benefits at beginning of year	4,005	4,239	3,958	4,188
Included in profit or loss:				
Current service cost	192	202	189	198
Interest cost	91	62	90	61
Gain on remeasurement of other				
long-term benefit obligations	-	(4)	-	(3)
Included in other comprehensive				
income:				
Actuarial gain arising from measurement				
of retirement benefit obligations	-	(407)	-	(402)
Benefits paid during the year	(42)	(87)	(40)	(84)
Provision for long-term employee				
benefits at end of year	<u>4,246</u>	<u>4,005</u>	<u>4,197</u>	<u>3,958</u>

The Group expects to pay Baht 51 million of long-term employee benefits during the next year (2021: Baht 57 million) (the Company only: Baht 51 million, 2021: Baht 56 million).

As at 31 December 2022, the weighted average duration of the liabilities for long-term employee benefit is 11 years (2021: 11 years) (the Company only: 11 years, 2021: 11 years).

Significant actuarial assumptions are summarised below.

	(Unit: percent per annum)			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Discount rate	2.3	2.3	2.3	2.3
Salary increase rate	4.0 - 8.0	4.0 - 8.0	5.0 - 8.0	5.0 - 8.0
Turnover rate	0 - 7.0	0 - 7.0	0 - 2.0	0 - 2.0

The result of sensitivity analysis for significant assumptions that affect the present value of the long-term employee benefit obligation as at 31 December 2022 and 2021 are summarised below.

(Unit: Million Baht)

	2022			
	Consolidated financial statements		Separate financial statements	
	Increase 1%	Decrease 1%	Increase 1%	Decrease 1%
Discount rate	(413)	477	(394)	456
Salary increase rate	375	(331)	369	(326)

(Unit: Million Baht)

	2021			
	Consolidated financial statements		Separate financial statements	
	Increase 1%	Decrease 1%	Increase 1%	Decrease 1%
Discount rate	(390)	451	(386)	446
Salary increase rate	354	(312)	349	(308)

23. Other non-current liabilities

(Unit: Million Baht)

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Employment restructuring obligations	89	313	89
Others	7	29	-	-
Total	96	342	89	313

On 1 June 2020, the Company has officially announced the Increase in Organization Capability project resulting in the employment restructuring by terminating the employment and voluntary resignation for employees who are 40 years and above. The Company then set up the provisions for terminating the employee's contract in amount of Baht 1,410 million which was recorded in other payables in amount of Baht 750 million and other non-current liabilities in amount of Baht 660 million in the consolidated and separate financial statements.

As at 31 December 2022, the Company has the outstanding of other payables in amount of Baht 225 million (2021: Baht 343 million) (as disclosed in Note 19 to consolidated financial statements) and other non-current liabilities in amount of Baht 89 million (2021: Baht 313 million) in the consolidated and separate financial statements.

24. Treasury stock

As at 31 December 2022 and 2021, the Company's ordinary shares of 23,828,400 shares, totaling amount of Baht 124 million have been held by IRPC Oil Company Limited, a subsidiary of the Company. These shares are stated at costs and presented in the consolidated statements of financial position as a deduction of total shareholders' equity.

The subsidiary plans to dispose of the Company's shares when returns are higher than its costs.

25. Statutory reserve

Pursuant to Section 116 of the Public Limited Companies Act B.E. 2535, the Company is required to set aside a statutory reserve at least 5 percent of its net profit after deducting accumulated deficit brought forward (if any), until the reserve reaches 10 percent of the registered capital. The statutory reserve is not available for dividend distribution. At present, the statutory reserve has fully been set aside.

26. Other income

	(Unit: Million Baht)			
	For the year ended 31 December			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2022	2021	2022	2021
Interest income	38	44	41	48
Dividend income	6	5	169	155
Loss on exchange rate from borrowings and interest payable	(170)	(474)	(170)	(474)
Gain on exchange rate	1,101	946	1,098	943
Gain (Loss) on disposals of fixed assets	20	(46)	20	(45)
Loss on impairment of investment in an associate	-	-	(10)	-
Income from tax refund from the customs import duty	86	64	86	64
Others	457	969	508	1,045
Total	1,538	1,508	1,742	1,736

27. Administrative expenses

(Unit: Million Baht)

For the year ended 31 December

	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Staff costs	3,183	3,724	3,133	3,679
Consultant fees	167	124	158	120
Depreciation	293	289	182	186
Rental	116	51	116	51
Advertising	38	28	37	29
Bad debts and doubtful accounts (reversal)	(2)	1	1	2
Directors' remuneration	74	27	71	25
Others	1,406	1,429	1,411	1,486
Total administrative expenses	5,275	5,873	5,109	5,578

28. Net derivative loss

(Unit: Million Baht)

For the year ended 31 December

	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Realised (gain) loss on financial derivative contracts	(10)	92	(10)	92
Unrealised (gain) loss on financial derivative contracts	(228)	210	(228)	210
Realised loss on commodity derivative contracts	8,385	1,954	8,385	1,954
Unrealised gain on commodity derivative contracts	(28)	(313)	(28)	(313)
Total net derivative loss	8,119	1,943	8,119	1,943

Loss (gain) on commodity derivative contracts are due to the fluctuation in price of crude oil and petroleum products and the contract price of commodity derivatives which is nature of normal business.

29. Finance costs

(Unit: Million Baht)

	For the year ended 31 December			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Interest expense on borrowings	1,948	1,742	1,947	1,742
Interest expense on lease liabilities	7	6	12	14
Amortisation of deferred financing fees of loans	22	25	22	25
Amortisation of deferred financing fees of debentures	8	6	8	6
Total interest expense	1,985	1,779	1,989	1,787
Less: amounts included in the cost of qualifying assets	(115)	(42)	(114)	(42)
Net	1,870	1,737	1,875	1,745
Others finance cost	3	6	3	6
Total	1,873	1,743	1,878	1,751

30. Expenses by nature

Significant expenses classified by nature are as follows:

(Unit: Million Baht)

	For the year ended 31 December			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Changes of finished goods and work in process	(4,795)	(8,089)	(4,726)	(8,014)
Cost of raw materials used	293,040	317,992	293,018	317,332
Salaries and wages and other employee benefits	8,417	9,285	8,279	9,143
Depreciation and amortisation	8,059	8,587	8,067	8,605
Directors' and managements' remuneration	134	70	131	68

31. Income tax

Income tax revenues (expenses) for the years ended 31 December 2022 and 2021 are made up as follows:

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Current income tax:				
Current income tax charge	(16)	(772)	-	(719)
Adjustment in respect of income tax of previous year	(16)	-	(14)	-
Deferred tax:				
Relating to origination and reversal of temporary differences	1,174	(1,579)	1,185	(1,547)
Income tax revenues (expenses) reported in profit or loss	1,142	(2,351)	1,171	(2,266)

The amounts of income tax relating to each component of other comprehensive income for the years ended 31 December 2022 and 2021 are as follows:

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Deferred tax relating to				
Loss on investments in equity instruments designated at fair value through other comprehensive income	1	1	1	1
Actuarial gains	-	(81)	-	(80)

The reconciliation between accounting loss (profit) and income tax revenues (expense) is shown below.

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2022	2021	2022	2021
Accounting loss (profit) before tax	5,502	(16,884)	5,669	(16,029)
Applicable tax rate	20%	20%	20%	20%
Accounting loss (profit) before tax multiplied by income tax rate	1,100	(3,377)	1,134	(3,206)
Adjustment in respect of income tax of previous year	(16)	-	(14)	-
Profit from operations of associates - net of tax	57	143	-	-
Adjustment on tax losses carried forward	-	38	-	37
Effects of:				
Promotional privileges (Note 32)	-	884	-	884
Non-deductible expenses	(33)	(90)	(14)	(64)
Additional expense deductions allowed	28	95	28	95
Others	6	(42)	37	(12)
Total	1	847	51	903
Income tax revenues (expenses) reported in profit or loss	1,142	(2,351)	1,171	(2,266)

The components of deferred tax assets and deferred tax liabilities are as follows:

	(Unit: Million Baht)			
	Statements of financial position			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2022	2021	2022	2021
Deferred tax assets				
Allowance for diminution in value of inventories	222	211	222	211
Provision for long-term employee benefits	845	796	839	792
Fixed assets	256	284	194	212
Tax losses carried forward	1,189	6	1,182	-
Derivatives	31	50	31	50
Others	42	73	45	71
Total	2,585	1,420	2,513	1,336

(Unit: Million Baht)

	Statements of financial position			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Deferred tax liabilities				
Other non-current financial assets	1	2	1	2
Fixed assets	229	266	229	266
Derivatives	30	-	30	-
Total	260	268	260	268

32. Promotional privileges

The Company has received promotional privileges from the Board of Investment for the manufacture of Compounded Plastic, The cogeneration and steam power plant project ("CHP"), Propylene project ("PRP"), EBSM Upgrading for ABS Specialties project ("EBSM"), Multi Product Pipeline project ("MPPL"), Polypropylene Resin project ("PPE"), Polypropylene Compound project ("PPC"), High Pressure HDPE Compound project, Investment project in Industrial area and Improve Efficiency for Saving Energy of Petroleum project ("UHV"), Floating Solar project and PP Melt Blown Project, pursuant to the investment promotion certificate subject to certain imposed conditions, are summarised below.

- (a) Exemption from payment of import duty and tax on materials and necessary parts including machinery as approved by the Board
- (b) Exemption from payment of corporate income tax on the net profit derived from certain operations for a period of 5 to 8 years from the date on which the income is first derived from such operations
- (c) 50 percent reduction in the normal corporate 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, and
- (d) The double deduction of logistics, electricity and water expenses for a period of 10 years since income is first derived from such operations.

As promoted companies, the Company must comply with certain terms and conditions prescribed in the promotional certificates.

The Company's operating revenues for the years ended 31 December 2022 and 2021, divided between promoted and non-promoted operations, are summarised below.

(Unit: Million Baht)

	Separate financial statements					
	Promoted operations		Non-promoted operations		Total	
	2022	2021	2022	2021	2022	2021
Sales						
Domestic sales	12,597	83,493	198,132	79,132	210,729	162,625
Export sales	7,090	46,224	105,952	45,141	113,042	91,365
Total sales	19,687	129,717	304,084	124,273	323,771	253,990

33. Earnings (Loss) per share

Basic earnings (loss) per share is calculated by dividing profit (loss) for the year attributable to equity holders of the Company (excluding other comprehensive income) by the weighted average number of ordinary shares in issue during the year excluding treasury stock.

The following table sets forth the computation of basic earnings (loss) per share.

	Consolidated financial statements					
	Profit (loss) for the year		Weighted average number of ordinary shares		Earnings (loss) per share	
	2022	2021	2022	2021	2022	2021
	(Million Baht)	(Million Baht)	(Million shares)	(Million shares)	(Baht)	(Baht)
Basic earnings (loss) per share						
Profit (loss) attributable to equity holders of the parent	(4,364)	14,505	20,410	20,410	(0.21)	0.71
	Separate financial statements					
	Profit (loss) for the year		Weighted average number of ordinary shares		Earnings (loss) per share	
	2022	2021	2022	2021	2022	2021

	(Million Baht)	(Million Baht)	(Million shares)	(Million shares)	(Baht)	(Baht)
Basic earnings (loss) per share						
Profit (loss) attributable to equity holders of the parent	(4,499)	13,762	20,434	20,434	(0.22)	0.67

In the consolidated financial statements, the weighted average numbers of ordinary shares outstanding during the years are deducted by 24 million shares of the parent held by a subsidiary (as mentioned in Note 24 to consolidated financial statements).

There are no dilutive potential ordinary shares in issue during the years presented, so no diluted earnings per share is presented.

34. Segment information

Operating segment information is reported in a manner consistent with the internal reports that are regularly reviewed by the chief operating decision maker in order to make decisions about the allocation of resources to the segment and assess its performance.

For management purposes, the Group is organised into business units based on its products and services and have 3 reportable segments as follows:

- Petroleum products segment, which produces and sales refinery, lubricant, asphalt.
- Petrochemical products segment, which produces and sales olefins, aromatics and related products including special products
- Other business segments, division related to Power plant, jetty and other utilities

The chief operating decision maker monitors the operating results of the business units separately for the purpose of making decisions about resource allocation and assessing performance. Segment performance is measured based on operating profit or loss and total assets and on a basis consistent with that used to measure operating profit or loss and total assets in the financial statements.

The basis of accounting for any transactions between reportable segments is consistent with that for third party transactions.

The following tables present revenue and profit (loss) information regarding the Group's operating segments for the years ended 31 December 2022 and 2021.

(Unit: Million Baht)

	Consolidated financial statements			
	For the year ended 31 December 2022			
	Petroleum products	Petrochemical products	Other businesses	Total
Revenues from sales and services	249,550	70,402	4,848	324,800
Profit (Loss) from operating segments	(1,258)	(3,375)	580	(4,073)
Unallocated other income				161
Loss from operations				(3,912)
Share of profit on investments in joint ventures and associates				283
Finance costs				(1,873)
Income tax revenues				1,142
Loss for the year				(4,360)

(Unit: Million Baht)

Consolidated financial statements					
For the year ended 31 December 2022					
	Petroleum products	Petrochemical products	Other businesses	Elimination entries	Total
Segment fixed assets	56,648	26,897	22,837	263	106,645
Unallocated fixed assets					4,787
Segment other assets	46,882	11,121	7,456	(548)	64,911
Unallocated other assets					21,844
Consolidated total assets					198,187

(Unit: Million Baht)

Consolidated financial statements				
For the year ended 31 December 2021				
	Petroleum products	Petrochemical products	Other businesses	Total
Revenues from sales and services	179,627	71,089	4,389	255,115
Profit from operating segments	8,081	7,718	1,676	18,375
Unallocated other expenses				(481)
Profit from operations				17,914
Share of profit on investments in joint ventures and associates				713
Finance costs				(1,743)
Income tax expense				(2,351)
Profit for the year				14,533

(Unit: Million Baht)

Consolidated financial statements					
For the year ended 31 December 2021					
	Petroleum products	Petrochemical products	Other businesses	Elimination entries	Total
Segment fixed assets	52,053	28,070	24,135	229	104,487
Unallocated fixed assets					4,580
Segment other assets	37,545	12,098	5,122	(704)	54,061
Unallocated other assets					27,364
Consolidated total assets					190,492

Geographic information

Revenue from external customers is based on locations of the customers.

	(Unit: Million Baht)	
	2022	2021
Revenue from external customers:		
Thailand	211,737	163,743
Singapore	56,836	33,121
Others	56,227	58,251
Total	324,800	255,115

Major customers

For 2022, the Group has revenue from a major customer which is a related party in amounting of Baht 46,848 million (2021: Baht 32,681 million), arising from sales by petroleum products and other segments.

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2022	2021	2022	2021
Timing of revenue recognition				
Revenue recognised at a point in time	324,458	254,729	323,494	253,671
Revenue recognised over time	342	386	277	319
Total revenues from contracts with customers	324,800	255,115	323,771	253,990

35. Provident fund

The Group and its employees have jointly established a provident fund in accordance with the Provident Fund Act B.E. 2530. The fund, which is managed by a Fund Management Company, will be paid to employees upon termination in accordance with the rules of fund of the Group. During 2022, the Group contributed Baht 408 million (2021: Baht 419 million) (the Company only: Baht 405 million 2021: Baht 416 million) were recognised as expenses.

36. Dividends

Dividends	Approved by	Total dividends (Million Baht)	Dividend per share (Baht)
Final dividends for 2020	Annual General Meeting of shareholders on 31 March 2021	1,226	0.06
Interim dividends for 2021	Board of Directors' meeting of the Company on 24 August 2021	1,635	0.08
Total dividends for 2021		2,861	0.14
Final dividends for 2021	Annual General Meeting of shareholders on 5 April 2022	2,861	0.14
Interim dividends for 2022	Board of Directors' meeting of the Company on 20 September 2022	817	0.04
Total dividends for 2022		3,678	0.18

37. Commitments and contingent liabilities**37.1 Capital commitments**

As at 31 December 2022 and 2021, the Group has capital commitments as follows:

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2022	2021	2022	2021
Capital commitments				
Purchase agreements for machinery and construction	9,866	12,585	9,858	12,570
Consultation agreements	315	458	315	457
Other agreements	1,631	1,002	1,661	1,011
Total	11,812	14,045	11,834	14,038

37.2 Lease commitments

As at 31 December 2022 and 2021, the Group has future lease payments required under these non-cancellable office building space, vehicle, computer and service agreements that have not yet commenced as follows:

	(Unit: Million Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Within 1 year	120	68	119	67
Over 1 and up to 5 years	70	21	67	21
Total	190	89	186	88

37.3 Guarantees

As at 31 December 2022, there were outstanding bank guarantees of Baht 113 million issued by banks on behalf of the Group in respect of guarantee electricity use and among others (2021: letters of guarantee amounting to Bah 146 million to guarantee payments due to creditors and amounting to Baht 150 million to guarantee electricity use and among others) (the Company only: letters of guarantee amounting to Baht 111 million to guarantee payments due to creditors, 2021: letters of guarantee amounting to Bah 115 million to guarantee payments due to creditors and amounting to Baht 148 million to guarantee electricity use and among others).

37.4 The Company's tank farms and land expropriated for road construction

Some of the Company's tank farms are located in a yellow zone (low density residential zone) and a light green zone (recreational & environmental reserved zone) which are under the road project, Kor3 and Gor9, under the Ministerial Regulation on Town and Country Planning of Rayong Province B.E. 2549. Such plots of land were restricted from construction of factories, oil and gas tanks. At the present time, the Town and Country Planning Committee, Department of Public Works and Town and Country Planning has considered modifying the Rayong town plan as requested by the Company that the yellow zone and the light green zone be modified to a purple zone (industrial zone and tank farms) in order to operate oil and gas tank farms and to alter the construction plan of 2 public roads to be away from the Company's tank farm area.

The Town and Country Planning Committee has reviewed the draft of the Ministerial Regulations regarding Rayong Town Plan (4th revised) and removed the road project of Kor3 and Gor9 out from the draft of the Ministerial Regulations. Later, the notification from the Eastern Economic Corridor Policy Committee has been announced in the Royal Gazette indicates that the Company's tank farms are now located in a purple zone and able to operate the oil and gas tank farms.

37.5 Use in public ways and gutters

The Company has filed a petition for the removal of public ways and gutters in accordance with Section 8 of the Land Code by providing the appropriate land for exchange with the public ways and gutters. The Company has also filed a request for permission to use the state land under Section 9 of the Land Code, which is located in the IRPC Industrial Zone Project at Ban Laeng sub-district, Ta Phong sub-district and Choeng Noen sub-district, Muang Rayong district, Rayong province. Currently, the Company has been granted the permission to use the state land under Section 9 of the Land Code and has also filed a request for a renewal of such permission within the period specified by the laws. Regarding the removal of the public ways and gutters under Section 8 of the Land Code, the Company is in the process of execution and considering of the relevant government agencies (as mentioned in Note 37.7 to consolidated financial statements).

37.6 Significant agreements with related parties and other entities

(1) Sales/Purchase of Refined Oil Agreement from a depot, Chumporn province

The Company entered into a Sales/Purchase of Refined Oil Agreement from the depot in Chumporn province with PTT Oil and Retail Business Public Company Limited. The Company agrees to sell refined oil from its depot in Chumporn province at a quantity and pricing rates as stipulated in the agreement. The agreement is effective for a period of 1 year with a maturity date of 31 December 2022. The Company has extended the agreement to 31 December 2023. The new terms and conditions are stipulated in the renewal agreement.

(2) Crude and Feedstock Supply Agreement

The Company has entered into Crude and Feedstock Supply Agreements with PTT Public Company Limited. The agreements shall be effective for a period of 1 year with maturity date on 31 December 2023. The purchase quantity and pricing structure of crude and feedstock supply are as stipulated in the agreements.

(3) Gas Sale and Purchase Agreement

The Company has entered into Gas Sale and Purchase Agreement with PTT Public Company Limited (PTT) two agreements for the quantity and price as specified in the agreement. The agreement is for a period of 1 years and 5 years starting from effective date in specified agreements and will end in June 2023 and April 2026. The agreement can be extended under the conditions stipulated in the agreement.

(4) Petroleum Products Sales and Purchase Agreement

The Company has entered into a sales and purchases agreement of petroleum products with a related party, with agreed quantity and prices as specified in the agreement. The agreement is for a period of 15 years from the effective date specified in the agreement and will end in February 2028, unless both parties agree to terminate the agreement before the expiry date by written notify.

(5) Power and Steam Sale and Purchase Agreements

The Company has entered into the Power Sale and Purchase Agreement and Steam Sale and Purchase Agreement with a related party to purchase electricity and steam according to the agreements. The term of the Power Sale and Purchase Agreement is 25 years, and the term of the Steam Sale and Purchase Agreement is 27 years and shall expire on 14 November 2042.

(6) Compensation Agreement for Emission Reduction

On 29 November 2019, the Company has entered into the Compensation Agreement for Emission Reduction of Nitrogen Oxides with a related party to provide the emission reduction of Nitrogen Oxides service within IRPC Industrial Park. The Company will receive compensation as specified in the agreement which is effective from 29 November 2019 until 31 December 2028.

(7) Various Service Agreement

The Company has entered into the Service Agreement with a related party to provide the accounting, finance, procurement, maintenance of power plant and other management services. The term of the agreement is 2 years from the effective date as stipulated in such agreement and shall expire within December 2024. The service fees are stipulated in the agreements.

37.7 Litigation

The President of the Administrative Organization-Tambon Ban Laeng and 11 government agencies and Minister of Interior and 9 others

Ms. Phayung Meesabai and the other 44 plaintiffs filed a lawsuit to the President of the Administrative Organization - Tambon Ban Laeng and 11 government agencies as the 1st to 11th defendant requesting the Administrative Court of Rayong Province to suspend or dismiss any activities of the Company in expansion IRPC Industrial Zone Project, which it is the public ways and gutters in disputed area (as mentioned in Note 37.5 to consolidated financial statements). In addition, they requested the Administrative Court to suspend or dismiss the opinion of the Environmental Health Impact Assessment ("EHIA") report. Subsequently, the defendants filed the case and additionally submitted all docket to the Administrative Court. On 31 March 2017, the Company submitted the petition to Administrative Court to include the Company as 12th defendant in this lawsuit and the Administrative Court has agreed on this matter. On 6 December 2018, 11 plaintiffs submitted to withdraw from the case with Administrative Court which on 12 December 2018, the Administrative Court approved to withdraw the case. Subsequently, the Administrative Court has ordered that 29 July 2020 was the last day of investigation and has dismissed the case on 27 August 2020. The plaintiffs also submitted a petition of appeal to Supreme Administrative Court on 23 September 2020. The Supreme Administrative Court accepted the appeal of the plaintiffs and has ordered the defendants to revise the appeal. On 21 December 2020, the Company submitted the revision appeal to Supreme Administrative Court. As at 31 December 2022, the case is in the process of considering of the Supreme Administrative Court's appeal.

In 2019, Ms. Phayung Meesabai and the other 4 plaintiffs filed a lawsuit to Minister of Interior and 9 others requesting the Administrative Court to suspend the removal of public ways and gutters process (as mentioned in Note 37.5 to consolidated financial statements). On 15 January 2019, the Company submitted the petition as a defendant and additionally submitted the docket to the Court on 14 June 2019. Subsequently, the Administrative Court has ordered that 5 August 2020 was the last day of investigation and has dismissed the case on 25 September 2020. The plaintiffs also submitted a petition of appeal to Supreme Administrative Court on 22 October 2020. The Company submitted the revision appeal to Supreme Administrative Court on 4 March 2021 and as at 31 December 2022, the case is in the process of considering of the Supreme Administrative Court's appeal.

As at 31 December 2022 and 2021, the Company's management and its legal consultant are of the opinion that the Company has evidence and information according to the contract to defend the issue in this case and considers that the case will probably not result in the Company incurring losses. Therefore, the Company has not recorded the estimated losses of relevant assets or provision in its accounts.

38. Fair value hierarchy

As at 31 December 2022 and 2021, the Group had the assets and liabilities that were measured at fair value or for which fair value was disclosed using different levels of inputs as follows:

(Unit: Million Baht)

	Consolidated financial statements			
	As at 31 December 2022			
	Level 1	Level 2	Level 3	Total
Assets measured at fair value				
Financial assets measured at FVOCI				
Equity investments	52	-	1,631	1,683
Derivatives				
Interest rate swaps contracts	-	155	-	155
Liabilities measured at fair value				
Derivatives				
Cross currency interest rate swap contracts	-	149	-	149
Assets for which fair value are disclosed				
Investment property	-	1,149	-	1,149
Liabilities for which fair value are disclosed				
Debentures	-	34,323	-	34,323

(Unit: Million Baht)

	Consolidated financial statements			
	As at 31 December 2021			
	Level 1	Level 2	Level 3	Total
Assets measured at fair value				
Financial assets measured at FVOCI				
Equity investments	52	-	1,637	1,689
Liabilities measured at fair value				
Derivatives				
Commodity derivative contracts	-	28	-	28
Cross currency interest rate swap contracts	-	171	-	171
Interest rate swaps contracts	-	52	-	52
Assets for which fair value are disclosed				
Investment property	-	1,149	-	1,149
Liabilities for which fair value are disclosed				
Debentures	-	24,596	-	24,596

(Unit: Million Baht)

	Separate financial statements			
	As at 31 December 2022			
	Level 1	Level 2	Level 3	Total
Assets measured at fair value				
Financial assets measured at FVOCI				
Equity investments	52	-	1,630	1,682
Derivatives				
Interest rate swaps contracts	-	155	-	155
Liabilities measured at fair value				
Derivatives				
Cross currency interest rate swap contracts	-	149	-	149
Assets for which fair value are disclosed				
Investment property	-	1,104	-	1,104
Liabilities for which fair value are disclosed				
Debentures	-	34,323	-	34,323

(Unit: Million Baht)

	Separate financial statements			
	As at 31 December 2021			
	Level 1	Level 2	Level 3	Total
Assets measured at fair value				
Financial assets measured at FVOCI				
Equity investments	52	-	1,636	1,688
Liabilities measured at fair value				
Derivatives				
Commodity derivative contracts	-	28	-	28
Cross currency interest rate swap contracts	-	171	-	171
Interest rate swaps contracts	-	52	-	52
Assets for which fair value are disclosed				
Investment property	-	1,104	-	1,104
Liabilities for which fair value are disclosed				
Debentures	-	19,207	-	19,207

In 2022 and 2021, there were no transfers within the fair value hierarchy.

39. Financial instruments

39.1 Derivatives

As at 31 December 2022 and 2021, derivative assets and liabilities held for trading derivatives that are not designated in hedge accounting relationships carried at fair value through profit or loss were as follows:

	(Unit: Million Baht)			
	Statement of financial position			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Derivative assets - non-current				
Interest rate swap contracts	155	-	155	-
Total derivative assets	155	-	155	-
Derivative liabilities - current				
Cross currency interest rate swap contracts	62	-	62	-
Commodity derivative contracts	-	28	-	28
Derivative liabilities - non-current				
Cross currency interest rate swap contracts	87	171	87	171
Interest rate swap contracts	-	52	-	52
Total derivative liabilities	149	251	149	251

The Group has not entered into netting agreements with the counterparties for above derivatives.

Significant contracts related to derivatives are as follows:

Interest rate swap contracts

The Company has entered into interest rate swap contracts of USD long-term borrowings with two financial institutions totaling USD 140 million to swap interests from floating rate to fixed rate as specified in the contracts. The contracts are effective from 15 November 2019 to 30 June 2025.

The above interest rate swap contracts will be swapped the interest every month from the effective date until the maturity date and will recognise the transactions as derivatives in the financial statements over the period of contracts.

Cross currency interest rate swap contracts

The Company has entered into two cross currency interest rate swap contracts of Thai Baht long-term borrowings with two financial institutions totaling Baht 612 million to swap principals from Thai Baht to US Dollar at an exchange rate as specified in the contracts and to swap the fixed interest rate on Thai Baht to a fixed interest rate on US Dollar. The contracts are effective from 5 March 2021 to 11 September 2023.

The above cross currency interest rate swap contracts will be swapped the interest every March and September from the effective date until the maturity date and will recognise the transactions as derivatives in the financial statements over the period of contracts.

The Company has entered into three cross currency interest rate swap contracts of Thai Baht long-term borrowings with a financial institution totaling Baht 2,862 million to swap principals from Thai Baht to US Dollar at an exchange rate as specified in the contracts and to swap the fixed interest rate on Thai Baht principal to a fixed interest rate on US Dollar principal. The contracts are effective from 28 September 2020 to 30 November 2024.

The above cross currency interest rate swap contracts will be swapped the interest every ended of May and November from the effective date until the maturity date and will recognise the transactions as derivatives in the financial statements over the period of contracts.

Commodity derivative contracts

The Company has entered into Crack Spread Swap Contracts with a related party and several financial institutions in order to swap the spread of the average benchmark price of crude oil and petroleum products of the settlement months to the fixed price. As at 31 December 2022, there were no the outstanding balances under such contracts (2021: 5.25 million barrels).

The Company has entered into Crude Oil Swap Contracts with a related party and several financial institutions in order to swap the average benchmark price of crude oil and petroleum products of the settlement months to the range of fixed price. As at 31 December 2022 and 2021, there were no the outstanding balances under such contracts.

39.2 Financial risk management objectives and policies

The Group's financial instruments principally comprise cash and cash equivalents, trade and other receivables, short-term and loan-term loans, investments, short-term and long-term borrowings from financial institutions. The financial risks associated with these financial instruments and how they are managed is described below.

Credit risk

The Group is exposed to credit risk primarily with respect to trade accounts receivable, short-term and loan-term loans, deposits with banks and financial institutions and other financial instruments. Except for derivatives, the maximum exposure to credit risk is limited to the carrying amounts as stated in the statement of financial position. The Group's maximum exposure relating to derivatives is noted in the liquidity risk topic.

Trade and other receivables

In order to minimise credit risk, the Group has determined the policies and procedures to consider the appropriate credit limit for business, comparable to leading companies in the same business. The Group takes into account the risks that will cause bad debts to the Group by having the credit committee who is responsible for supervising the credit management for selling all type of products and services of the Group.

Before approving credit limit to counterparty, the Group has set the terms and analysis for both counterparty with or without collateral to determine the credit rating. The analysis includes financial position, financial performance, ability to pay off debts together with qualitative information such as the Company's profile and major shareholders. The terms and credit limits are determined by the credit ratings as approved by the credit committee. The Group reviews the terms and credit limits with each counterparty on an annually basis.

The Group does not have significant credit risk exposure to any single counterparty or any group of counterparties having similar characteristics. The Group has no significant concentrations of credit risks. 80 percent of the trade receivables has the best credit scoring under the credit rating system used by the Group. Other monitoring procedures are also in place to ensure that follow-up action is taken to recover overdue debts. Furthermore, the calculation reflects the probability-weighted outcome, the time value of money and reasonable and supportable information that is available at the reporting date about past events, current conditions and forecasts of future economic conditions. Generally, trade receivables are written-off if past due for more than one year and not subject to enforcement activity. The Group reviews the recoverable amount of each trade receivable on an individual basis at the end of the reporting period to ensure that adequate loss allowance is made for irrecoverable amounts.

Financial Instruments and cash deposits

The credit risk on cash at banks and derivatives is limited because the counterparties are banks with high credit-ratings assigned by international credit-rating agencies.

Market risk

There are 3 types of market risk comprising foreign currency risk, interest rate risk and commodity price risk. The Group enters into a variety of derivatives to manage its risk exposures, including:

- Foreign exchange forward contracts to hedge the foreign currency risk arising on the export or import of goods and including foreign currency loans
- Interest rate swaps to mitigate the risk of rising interest rates
- Commodity option to mitigate the price risk of purchased inventory

Foreign currency risk

The Group's exposure to the foreign currency risk relates primarily to its trading transactions and loans that are denominated in foreign currencies. The Group seeks to reduce this risk by entering into foreign exchange forward contracts when it considers appropriate. Generally, the forward contracts mature within 5 years.

As at 31 December 2022 and 2021, the material balances of financial assets and liabilities denominated in foreign currencies are summarised below.

Foreign currency	Financial assets		Financial liabilities		Average exchange rate	
	2022	2021	2022	2021	2022	2021
	(Million)	(Million)	(Million)	(Million)	(Baht per 1 foreign currency unit)	
US dollar	162	181	122	173	34.56	33.42
Euro	-	-	-	1	36.83	37.89

Foreign currency sensitivity

The Group is mainly exposed to the currency of assets and liabilities to US dollar.

The following tables demonstrate the sensitivity of the Group's profit (loss) before tax to a reasonably possible change in US dollar and Euro exchange rates, with all other variables held constant. The impact on the Group's profit (loss) before tax is due to changes in the fair value of monetary assets and liabilities including non-designated foreign currency derivatives. 10 percent is the sensitivity rate used when reporting foreign currency risk internally to key management personnel and represents management's assessment of the reasonably possible change in foreign exchange rates. As at 31 December 2022 and 2021, the Group's exposure to foreign currency changes for all other currencies is not material.

Currency	2022		2021	
	Increase/ decrease	Effect on loss before tax	Increase/ decrease	Effect on profit before tax
	(%)	(Million Baht)	(%)	(Million Baht)
US dollar	10	274	10	247
Euro	10	1	10	5

Interest rate risk

The Group's exposure to interest rate risk relates primarily to its deposits with bank, short-term and long-term loans, debentures and short-term and long-term borrowings. Most of the Group's financial assets and liabilities bear floating interest rates or fixed interest rates which are close to the market rate.

The Group manages its interest rate risk by maintaining an appropriate mix between fixed and floating rate borrowings, and enters into interest rate swaps, in which it agrees to exchange, at specified intervals, between fixed and variable rate interest amounts calculated by reference to an agreed-upon notional principal amount. Hedging activities are evaluated regularly to align with interest rate views and defined risk appetite; ensuring the most cost-effective hedging strategies are applied.

As at 31 December 2022 and 2021, the Group had the outstanding balance of significant financial assets and liabilities which are classified by type of interest rate are summarised in the table below, with those financial assets and liabilities that carry fixed interest rates further classified based on the maturity date, or the repricing date if this occurs before the maturity date.

(Unit: Million Baht)							
Consolidated financial statements							
As at 31 December 2022							
	Fixed interest rates			Floating interest rate	Non-interest bearing	Total	Effective interest rate (% per annum)
	Within 1 year	1-5 years	Over 5 years				
Financial assets							
Cash and cash equivalent	3,215	-	-	-	15	3,230	Note 7
Trade receivables	-	-	-	-	15,051	15,051	-
Other receivables	-	-	-	-	37	37	-
Amounts due from related parties	-	-	-	-	1,283	1,283	-
Other non-current financial assets	-	-	-	-	1,683	1,683	-
Derivative financial assets	-	155	-	-	-	155	Note 39.1
Other non-current assets	-	-	-	-	317	317	-
Financial liabilities							
Short-term borrowings from							
financial institutions	9,000	-	-	-	-	9,000	Note 18
Trade payables	-	-	-	-	34,466	34,466	-
Other payables	-	-	-	-	3,331	3,331	-
Amounts due to related parties	-	-	-	-	318	318	-
Interest payables	-	-	-	-	230	230	-
Accrued bonus expense	-	-	-	-	1,343	1,343	-
Other current liabilities	-	-	-	-	311	311	-
Long-term borrowings from							
financial institutions	-	-	-	28,649	-	28,649	Note 20.1
Debentures	1,999	17,500	14,484	-	-	33,983	Note 20.2
Lease liabilities	102	140	4	-	-	246	Note 21.1
Long-term borrowings from a							
related party	-	12	19	-	-	31	Note 6
Derivative financial liabilities	-	-	-	-	149	149	Note 39.1
Other non-current liabilities	-	-	-	-	96	96	-

(Unit: Million Baht)

Consolidated financial statements							
As at 31 December 2021							
	Fixed interest rates			Floating interest rate	Non-interest bearing	Total	Effective interest rate (% per annum)
	Within 1 year	1-5 years	Over 5 years				
Financial assets							
Cash and cash equivalent	11,214	-	-	-	22	11,236	Note 7
Trade receivables	-	-	-	-	13,785	13,785	-
Other receivables	-	-	-	-	119	119	-
Amounts due from related parties	-	-	-	-	2,923	2,923	-
Other non-current financial assets	-	-	-	-	1,689	1,689	-
Other non-current assets	-	-	-	-	281	281	-
Financial liabilities							
Trade payables	-	-	-	-	28,671	28,671	-
Other payables	-	-	-	-	2,297	2,297	-
Amounts due to related parties	-	-	-	-	272	272	-
Interest payables	-	-	-	-	195	195	-
Accrued bonus expense	-	-	-	-	1,955	1,955	-
Other current liabilities	-	-	-	-	49	49	-
Long-term borrowings from financial institutions	-	-	-	37,107	-	37,107	Note 20.1
Debentures	1,999	12,000	9,973	-	-	23,972	Note 20.2
Lease liabilities	81	141	-	-	-	222	Note 21.1
Long-term borrowings from a related party	-	6	25	-	-	31	Note 6
Derivative financial liabilities	-	51	-	-	199	250	Note 39.1
Other non-current liabilities	-	-	-	-	342	342	-

(Unit: Million Baht)

Separate financial statements							
As at 31 December 2022							
	Fixed interest rates			Floating interest rate	Non-interest bearing	Total	Effective interest rate (% per annum)
	Within 1 year	1-5 years	Over 5 years				
Financial assets							
Cash and cash equivalent	2,903	-	-	-	15	2,918	Note 7
Trade receivables	-	-	-	-	15,091	15,091	-
Other receivables	-	-	-	-	35	35	-
Amounts due from related parties	-	-	-	-	1,299	1,299	-
Short-term loans and interest receivables from a related party							
	-	-	-	135	-	135	Note 6
Other non-current financial assets	-	-	-	-	1,682	1,682	-
Long-term loans to related parties	-	-	-	77	-	77	Note 6
Derivative financial assets	-	155	-	-	-	155	Note 39.1
Other non-current assets	-	-	-	-	315	315	-
Financial liabilities							
Short-term borrowings from financial institutions							
	9,000	-	-	-	-	9,000	Note 18
Trade payables	-	-	-	-	34,448	34,448	-
Other payables	-	-	-	-	3,283	3,283	-
Amounts due to related parties	-	-	-	-	331	331	-
Interest payables	-	-	-	-	230	230	-
Accrued bonus expense	-	-	-	-	1,326	1,326	-
Other current liabilities	-	-	-	-	306	306	-
Long-term borrowings from financial institutions							
	-	-	-	28,649	-	28,649	Note 20.1
Debentures	1,999	17,500	14,484	-	-	33,983	Note 20.2
Lease liabilities	212	132	4	-	-	348	Note 21.1
Derivative financial liabilities	-	-	-	-	149	149	Note 39.1
Other non-current liabilities	-	-	-	-	69	69	-

(Unit: Million Baht)

Separate financial statements						
As at 31 December 2021						
Fixed interest rates						
Within 1 year	1-5 years	Over 5 years	Floating interest rate	Non-interest bearing	Total	Effective interest rate (% per annum)
Financial assets						
Cash and cash equivalent	10,873	-	-	21	10,894	Note 7
Trade receivables	-	-	-	13,815	13,815	-
Other receivables	-	-	-	117	117	-
Amounts due from related parties	-	-	-	2,940	2,940	-
Other non-current financial assets	-	-	-	1,688	1,688	-
Long-term loans to related parties	-	-	127	-	127	Note 6
Other non-current assets	-	-	-	278	278	-
Financial liabilities						
Trade payables	-	-	-	28,630	28,630	-
Other payables	-	-	-	2,248	2,248	-
Amounts due to related parties	-	-	-	286	286	-
Interest payables	-	-	-	195	195	-
Accrued bonus expense	-	-	-	1,935	1,935	-
Other current liabilities	-	-	-	40	40	-
Long-term borrowings from						
financial institutions	-	-	37,107	-	37,107	Note 20.1
Debentures	1,999	12,000	9,973	-	23,972	Note 20.2
Lease liabilities	188	250	-	-	438	Note 21.1
Derivative financial liabilities	-	51	-	199	250	Note 39.1
Other non-current liabilities	-	-	-	313	313	-

Interest rate sensitivity

The following table demonstrates the sensitivity of the Group's profit (loss) before tax to a reasonably possible change both financial derivatives and non-financial derivatives as follows.

Effect	2022		2021	
	Increase/ decrease	Effect on loss before tax	Increase/ decrease	Effect on profit before tax
	(%)	(Million Baht)	(%)	(Million Baht)
Floating rate	1	221	1	261

The above analysis has been prepared assuming that the amounts of liability outstanding at the reporting date was outstanding for the whole year. The Group's sensitivity to 1 percent increase or decrease is used when reporting interest rate risk internally to key management personnel and represents management's assessment of the reasonably possible change in interest rates. This information is not a forecast or prediction of future market conditions and should be used with care.

Interest rate swap contracts

Under interest rate swap contracts, the Group agrees to exchange the difference between fixed and floating rate interest amounts calculated on agreed notional principal amounts. Such contracts enable the Group to mitigate the risk of changing interest rates on the fair value of issued fixed rate debt held and the cash flow exposures on the issued variable rate debt held.

The detail various information regarding interest rate swap contracts outstanding at the end of the reporting period, interest rate swap contract assets and liabilities are included in Note 39.1 to consolidated financial statements.

Interest rate swap contracts will be settled every month. The floating rate on the interest rate swap contracts is 1-month LIBOR plus 1.25 percent. The Group will settle the difference between fixed and floating rate on a net basis.

Commodity price risk

The Group is affected by the price volatility of certain petroleum products. Its operating activities require the ongoing purchase and manufacture of petroleum therefore require a continuous crude oil and petroleum products. The Group is exposed to changes in the price of crude oil and petroleum products on its forecast purchases. The Group enters into derivative transactions to limit these risks. Hedging activities are evaluated regularly to align with Group expectations about the price changes and defined risk appetite; ensuring the most cost-effective hedging strategies are applied.

Commodity price sensitivity

The following table demonstrates the sensitivity of the Group's profit (loss) before tax to a reasonably possible change in crude oil and petroleum products, with all other variables held constant.

	2022		2021	
	Increase/ decrease	Effect on loss before tax	Increase/ decrease	Effect on profit before tax
	(Dollar per USD)	Million Baht)	(Dollar per USD)	(Million Baht)
Crude oil and petroleum products	1	-	1	125

Commodity derivative contracts

The Group has a policy to enter into commodity derivative contracts to manage the commodity price risk associated with anticipated purchase transactions in next 24 months. The Group policy is to enter into crack spread swap contracts up to 50 percent of production quantity and enter into crude oil swap contracts up to 100 percent. However, the Company has no outstanding of commodity derivative contracts as of 31 December 2022 (2021: the carrying amount of commodity derivative contracts of Baht 28 million).

Liquidity risk

The Group monitors the risk of a shortage of liquidity through maintaining adequate reserves, banking facilities, credit facilities from the parent company and reserve borrowing facilities, by continuously monitoring forecast and actual cash flows, and by matching the maturity profiles of financial assets and liabilities. Approximately 53 percent of the Group's debt will mature in less than one year as at 31 December 2022 (2021: 47 percent) (the Company only: 54 percent, 2021: 47 percent) based on the carrying value of borrowings reflected in the financial statements.

The table below summarises the maturity profile of the Group's non-derivative financial liabilities and derivative financial instruments as at 31 December 2022 and 2021 based on contractual undiscounted cash flows.

(Unit: Million Baht)

	Consolidated financial statements				
	As at 31 December 2022				
	On demand	Less than 1 year	1 to 5 years	> 5 years	Total
Non-derivatives					
Short-term borrowings from financial institutions	2,000	7,000	-	-	9,000
Trade payables	-	34,366	-	-	34,366
Other payables	-	3,331	-	-	3,331
Amounts due to related parties	-	318	-	-	318
Interest payables	-	230	-	-	230
Accrued bonus expense	-	1,343	-	-	1,343
Other current liabilities	-	-	-	311	311
Long-term borrowings from financial institutions	-	8,769	19,299	605	28,673
Debentures	-	2,000	17,500	14,500	34,000
Lease liabilities	-	107	145	4	256
Long-term borrowings from a related party	-	12	19	-	31
Other non-current liabilities	-	-	96	-	96
Derivatives					
Derivative financial assets	-	-	155	-	155
Derivative financial liabilities	-	62	87	-	149

(Unit: Million Baht)

Consolidated financial statements					
As at 31 December 2021					
	On demand	Less than 1 year	1 to 5 years	> 5 years	Total
Non-derivatives					
Trade payables	-	28,671	-	-	28,671
Other payables	-	3,239	-	-	3,239
Amounts due to related parties	-	272	-	-	272
Interest payables	-	195	-	-	195
Accrued bonus expense	-	1,955	-	-	1,955
Other current liabilities	-	49	-	-	49
Long-term borrowings from financial institutions	-	8,594	25,844	2,715	37,153
Debentures	-	2,000	12,000	10,000	24,000
Lease liabilities	-	86	143	5	234
Long-term borrowings from a related party	-	-	6	25	31
Other non-current liabilities	-	-	342	-	342
Derivatives					
Derivative financial liabilities	-	28	223	-	251

(Unit: Million Baht)

Separate financial statements					
As at 31 December 2022					
	On demand	Less than 1 year	1 to 5 years	> 5 years	Total
Non-derivatives					
Short-term borrowings from financial institutions	2,000	7,000	-	-	9,000
Trade payables	-	34,446	-	-	34,446
Other payables	-	3,703	-	-	3,703
Amounts due to related parties	-	331	-	-	331
Interest payables	-	230	-	-	230
Accrued bonus expense	-	1,326	-	-	1,326
Long-term borrowings from financial institutions	-	8,769	16,299	605	28,673
Debentures	-	2,000	17,500	14,500	34,000
Lease liabilities	-	218	137	4	359
Other non-current liabilities	-	-	89	-	89
Derivatives					
Derivative financial assets	-	-	155	-	155
Derivative financial liabilities	-	62	87	-	149

(Unit: Million Baht)

	Separate financial statements				
	As at 31 December 2021				
	On demand	Less than 1 year	1 to 5 years	> 5 years	Total
Non-derivatives					
Trade payables	-	28,630	-	-	28,630
Other payables	-	3,169	-	-	3,169
Amounts due to related parties	-	288	-	-	288
Interest payables	-	195	-	-	195
Accrued bonus expense	-	1,935	-	-	1,935
Long-term borrowings from financial institutions					
Debtentures	-	8,594	25,844	2,715	37,153
Lease liabilities	-	197	254	5	456
Short-term borrowings and interest payable from a related party					
Other current liabilities	-	56	-	-	56
Other non-current liabilities	-	-	313	-	313
Derivatives					
Derivative financial liabilities	-	28	223	-	251

39.3 Fair values of financial instruments

Since the majority of the Group's financial instruments are short-term in nature or carrying interest at rates close to the market interest rates, their fair value is not expected to be materially different from the amounts presented in the statement of financial position.

39.4 Reconciliation of recurring fair value measurements of financial assets, categorised within Level 3 of the fair value hierarchy.

(Unit: Million Baht)

	Consolidated financial statements	Separate financial statements
Non-listed equity investments		
Balance as of 1 January 2021	1,639	1,638
Net loss recognised in other comprehensive income	(2)	(2)
Balance as of 31 December 2021	1,637	1,636
Disposed during the year	(2)	(2)
Net loss recognised in other comprehensive income	(4)	(4)
Balance as of 31 December 2022	1,631	1,630

40. Capital management

The primary objective of the Group's capital management is to ensure that it has appropriate capital structure in order to support its business to continue as going concern and maximise shareholder value and it meets financial covenants attached to the loan agreements. The Group has complied with these covenants throughout the reporting periods.

The capital structure of the Group consists of net debts (borrowings disclosed in Note 18, Note 20 and Note 21 to consolidated finance statements after deducting cash and cash equivalents balances) and equity of the Group.

The Group's risk management committee reviews the capital structure on a semi-annual basis. As part of this review, the committee considers the cost of capital and the risks associated with each class of capital. The Group has a target gearing ratio not over 1 time determined as the proportion of net debt to equity.

As at 31 December 2022, the Group's net debt-to-equity ratio was 0.86: 1 (2021: 0.57: 1) and the Company's was 0.89: 1 (2021: 0.59: 1).

41. Events after the reporting period

- a. On 20 January 2023, the Extra Ordinary General Meeting of shareholders of WHA Industrial Estate Rayong Co., Ltd. ("WHAIER") passed a resolution to increase the registered share capital from Baht 710 million to be Baht 800 million by issuing new 9 million ordinary shares at par value of Baht 10 each totaling Baht 90 million to its existing shareholders in proportion to their holdings, in which the Company interest is 40 percent. The Company paid in share capital for the investment in joint venture of Baht 36 million on 31 January 2023.
- b. On 7 February 2023, the Board of Directors' meeting of the Company passed a resolution to pay annual dividend from its retained earnings with respect to 20,434 million shares at the rate of Baht 0.07 per share, totaling Baht 1,430 million. The Company already paid interim dividend at the rate of Baht 0.04 per share on 20 September 2022 as disclosed in Note 36 to consolidated financial statements, thus the remaining dividend to be paid for 20,434 million shares will be at the rate of Baht 0.03 per share, or a total amount of Baht 613 million. In this regard, the approval for the dividend shall be proposed to the Annual General Meeting of shareholders of the Company for 2023 for further consideration and approval.

42. Reclassifications

Certain amounts in the statement of financial position as at 31 December 2021 have been reclassified to conform to the current year's classification. The reclassifications are as follows.

(Unit: Million Baht)

	As at 31 December 2021			
	Consolidated		Separate	
	financial statements		financial statements	
	As previously		As previously	
	As reclassified	reported	As reclassified	reported
Other receivables	2,643	2,742	2,630	2,730
Other non-current assets	281	182	278	179

The reclassifications had no effect to previously reported profit or shareholders' equity.

43. Approval of financial statements

These financial statements were authorised for issue by the Company's Board of Directors on 7 February 2023.

About This Report

Business-driven sustainability

IRPC has disclosed sustainability performance information to stakeholders through the corporate website and Annual Registration Statement/Annual Report 2022 (Form 56-1 One Report) as shown in Section 3 Business driven sustainability, as well as disclosing such information on the website www.irpc.co.th in the Sustainable Development section, as is the case each year, to communicate material issues relating to sustainability of our business operations to all stakeholders. This report also contains current status and progress on the implementation of the United Nations Global Compact (UNGC) by preparing a report in accordance with the guidelines for the Annual Registration Statement/Annual Report, Form 56-1 One Report, of Office of the Securities and Exchange Commission (SEC) and the Sustainability Reporting Guideline (Standards) of the Global Reporting Initiative (GRI) at the level of Core Option and additional indicators for companies in the Oil and Gas Sector Disclosure. In Form 56-1 One Report 2022, IRPC maintained the scope of reporting on business driven sustainability covering economic, social and environmental operations between January 1 and December 31, 2022, approved by the Board of Directors, the Chief Executive Officer and President as well as high-level executives from relevant departments, and reviewed and audited by KPMG Phoomchai Audit Co., Ltd. to reassure all stakeholders as to its accuracy, reliability and in alignment with the business operation that is also traceable to the sources of information in every respect.

Disclosure of operating results, covering all businesses operated directly or owned by IRPC through shareholding, include IRPC Public Company Limited, as well as subsidiaries under IRPC's management, with over 50 per cent of shares held by IRPC, are: 1) IRPC Oil Company Limited; 2) IRPC A&L Company Limited; 3) IRPC Technology Company Limited; and 4) iPolymer Company Limited; along with Rakpasak Company Limited, whose shares are held indirectly by IRPC through its subsidiaries, amounting to more than 50 per cent. The scope of reporting corresponds to other topics contained in this report and from the website. www.irpc.co.th.



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Assurance Report



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Independent limited assurance report

To the Directors of IRPC Public Company Limited (“IRPC”)

Conclusion

Based on the procedures performed, as described below, nothing has come to our attention that causes us to believe that the selected subject matters (“Subject Matters”) identified below and included in the 56-1 One Report - Sustainability section (“Report”) for the year ended 31 December 2022, are not, in all material respects, prepared in compliance with the reporting criteria (the “Criteria”).

Our Responsibilities

We have been engaged by IRPC and are responsible for providing a limited assurance conclusion in respect of the Subject Matters for the year ended 31 December 2022 to be included in the Report as identified below.

Our assurance engagement is conducted in accordance with the International Standard on Assurance Engagements ISAE 3000 *Assurance Engagements other than Audits or Reviews of Historical Financial Information*, and ISAE 3410 *Assurance on Greenhouse Gas Statements*. These standards require the assurance team to possess the specific knowledge, skills and professional competencies needed to provide assurance on sustainability information, and that we plan and perform the engagement to obtain limited assurance on whether the Subject Matters are prepared, in all material respects, in compliance with the Criteria.

Our Independence and Quality Management

We have complied with the independence and other ethical requirements of the International Ethics Standards Board for Accountants’ *International Code of Ethics for Professional Accountants (including International Independence Standards)* (IESBA Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. The firm applies International Standard on Quality Management 1 which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

We have not been engaged to provide an assurance conclusion on any other information disclosed within the Report.

Subject Matters

Subject Matters comprised of the following data expressed numerically or in descriptive text for the year ended 31 December 2022:

- GRI 302-1 Energy consumption within organization
- GRI 303-3 Water withdrawal (2018)
- GRI 303-4 Water discharge (2018)
- GRI 303-5 Water consumption (2018)
- GRI 305-1 Direct (Scope 1) GHG emissions
- GRI 305-2 Energy indirect (Scope 2) GHG emissions
- GRI 305-3 Other indirect (Scope 3) GHG emissions
- GRI 305-7 Nitrogen oxide (NOx), sulfur oxides (SOx), and other significant air emissions
- GRI 306-3 Significant spill (2016)
- GRI 306-3 Waste generated (2020)
- GRI 306-4 Waste diverted from disposal (2020)
- GRI 306-5 Waste directed to disposal (2020)
- GRI 403-9 Work-related injuries (2018)
- GRI 403-10 Work-related ill health (2018)
- GRI 405-2 Ratio of basic salary and remuneration of women to men
- OGSD - OG6 Volume of flared and vented hydrocarbon
- OGSD - OG13 Number of process safety events, by business activity



Criteria

The Subject Matters were assessed according to the following criteria:

- The Sustainability Reporting Standards of the Global Reporting Initiative (“GRI Standards”)
- The Oil and Gas Sector Disclosures (“OGSD”);

Directors’ and management’s responsibilities

The directors and management of IRPC are responsible for the preparation and presentation of the Subject Matters, specifically ensuring that in all material respects the Subject Matters are prepared and presented in accordance with the Criteria. This responsibility also includes the internal controls relevant to the preparation of the Report that is free from material misstatement whether due to fraud or error.

Procedure performed

In forming our limited assurance conclusion over the Subject Matters, our procedures consisted of making enquiries and applying analytical and other evidence gathering procedures including:

- Interviews with senior management and relevant staff at corporate and operating sites;
- Inquiries about the design and implementation of the systems and methods used to collect and process the information reported, including the aggregation of source data into the Subject Matters;
- Inquiries about managements practices and procedures related to identifying stakeholders and their expectations, determining material sustainability matters and implementing sustainability policies and guidelines;
- Remote site visit to 2 sites; Deep Catalytic Cracking Plant (DCC) and Ethyl Benzene Styrene Monomer Plant (EBSM), selected on the basis of risk analysis including the consideration of both quantitative and qualitative criteria;
- Agreeing the Subject Matters to relevant underlying sources on a sample basis to determine whether all the relevant information has been included in the Subject Matters and prepared in accordance with the Criteria.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement and consequently the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Accordingly, we do not express a reasonable assurance opinion.

Inherent limitations

Due to the inherent limitations of any internal control structure it is possible that errors or irregularities in the information presented in the Report may occur and not be detected. Our engagement is not designed to detect all weaknesses in the internal controls over the preparation and presentation of the Report, as the engagement has not been performed continuously throughout the period and the procedures performed were undertaken on a test basis.

Restriction of use of our report

Our report should not be regarded as suitable to be used or relied on by any party wishing to acquire rights against us other than IRPC, for any purpose or in any other context. Any party other than IRPC who obtains access to our report or a copy thereof and chooses to rely on our report (or any part thereof) will do so at its own risk. To the fullest extent permitted by law, we accept or assume no responsibility and deny any liability to any party other than IRPC for our work, for this independent limited assurance report, or for the conclusions we have reached.

KPMG PHOONCHAI AUDIT LTD.

KPMG Phoomchai Audit Ltd.

Bangkok

3 March 2023





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