



BEAT THE TARGET

CONTENTS

- 2 Vision Mission Values
- 10 Message from the Chairman
- 12 Key Performance
- 13 Financial Highlight
- 14 Milestones and Awards of Success 2018

BOARD RESPONSIBILITY



- 22 Board of Directors
- 38 Organization Structure
- 39 Management Team
- 57 Internal Control
- 60 Report of the Audit Committee
- 62 Message from the Chairman,
Corporate Governance Committee
- 63 Message from the Chairman,
Nomination and Remuneration Committee
- 64 Message from the Chairman,
Risk Management Committee

MANAGEMENT STRUCTURE



- 68 IRPC Information
- 72 Management Structure
- 107 Corporate Governance Report

BUSINESS STRUCTURE



- 134 Business Structure and Shareholding
- 135 Nature of Business
- 138 Integrated Refinery and
Petrochemical Complex Flow Chart
- 140 Products
- 146 Market Overview and Industry Outlook
- 158 Revenue Structure
- 159 Connected Transaction

PERFORMANCE SUMMARY & MANAGEMENT ANALYSIS



- 164 Message from the President
- 166 Business Strategy
- 168 Performance Summary
- 187 Research and Development for Excellence
- 192 Management Discussion and Analysis

CORPORATE RESPONSIBILITY



- 210 Corporate Social Responsibilities
- 228 Qualities, Safety, Occupational Health
and Environmental Management (QSHE)
- 236 Sustainable Management

APPENDIX

- 242 Corporate Governance Report
of Thai Listed Companies (CGR) 2018
- 269 Compliance with Corporate Social
Responsibilities



VISION

LEADING INTEGRATED PETROCHEMICAL COMPLEX
IN ASIA BY 2020



MISSION

OPERATIONAL EXCELLENCE

HIGH PERFORMANCE
ORGANIZATION

CORPORATE SOCIAL
RESPONSIBILITY

VALUE CREATION

INNOVATION & CREATION
OF NEW BUSINESS



VALUES



I
INDIVIDUAL OWNERSHIP

S
SYNERGY

P
PERFORMANCE EXCELLENCE

I
INNOVATION

R
RESPONSIBILITY FOR SOCIETY

I
INTEGRITY & ETHICS

T
TRUST & RESPECT

BEAT THE TARGET

Harnessing the new strategy for driving IRPC toward success, **GDP**- we are now hitting our stride toward challenging goals:
Power of Growth, Power of Digital, Power of People.
The goals are within reach, as is the vision...

“To become the Leading Petrochemical Complex in Asia by 2020”



POWER
OF
GROWTH



EVEREST FOREVER (E4E)



Maximum Aromatics (MARS)



GALAXY



R&D Excellence

POWER
OF
DIGITAL



IRPC 4.0

POWER
OF
PEOPLE



IRPC New DNA

EVEREST FOREVER

2020 TOP QUARTILE EBITDA 29,029 MTHB
HEIGHT 29,029 ft

2019

CAMP 4 (26,300 ft)

2018

CAMP 3 (23,500 ft)

2017

CAMP 2 (21,000 ft)

2016

CAMP 1 (19,500 ft)

BASECAMP

(17,500 ft)



POWER OF GROWTH

In pursuit of sustainable success, robust growth marks the EVEREST+ EVEREST FOREVER Project (E4E), whose EBIT goal exceeds THB 10 billion. Our MARS Project will add 1,300 KTA to our aromatic capacity for a capacity share of 27%—No. 1 among integrated petrochemical groups. And to become Asia's petrochemical leader, our GALAXY Project will see USD 800-million M&A investment. We will tackle the future with innovative products equipped with Idea & Solution, courtesy of the R&D Excellence Plan, including patenting of 10 new products at a 1 million US dollars' investment in a world-class R&D Center.



EVEREST+EVEREST FOREVER (E4E):

Gain More than THB

9.367 billion
in EBIT goal



MARS:

Add up Aromatic Capacity of

27% **the No. 1** integrated
petrochemical group



GALAXY:

Invest USD

800 million M&As for
Asia's petrochemical
leader



R&D EXCELLENCE:

Patenting

10 **New Products**
with USD 1 million
investment



POWER OF DIGITAL

IRPC 4.0 Project: Technological excellence drives our digital petrochemical leadership with 28 work plans under two paths, adding no less than THB 3.3 billion a year in value by integrating digital systems and innovations for each business process. Notable are **€KONS** (displaying key KPIs for plant oversight) and Spend Cube Analytics (a data analytical and management system that aids procurement decisions).





IRPC 4.0 Project:

At least THB

3.3 billion a year
of value added



Operations (OPS 4.0)



Corporate Commercial & Marketing (CCM 4.0)



Integrated Supply Chain (ISC 4.0)



Procurement (PRO 4.0)



Enterprise Resource Planning (ERP 4.0)





INDIVIDUAL OWNERSHIP

I INDIVIDUAL OWNERSHIP



RESULT-ORIENTED

R RESULT-ORIENTED



PROMISE AND DELIVER

P PROMISE AND DELIVER



CONTINUOUS IMPROVEMENT

C CONTINUOUS IMPROVEMENT



DO THINGS TOGETHER

D DO THINGS TOGETHER



NO BIAS

N NO BIAS



ACTIVELY SOLVE THE PROBLEM

A ACTIVELY SOLVE THE PROBLEM



POWER OF PEOPLE

Growth derives from personnel capacity building. The Influencing Model, through four E-learning steps of the IRPC DNA Project, revolutionizes it all. It cultivates the IRPC DNA to galvanize human excellence, transferring knowledge and understanding to staff to accomplish development, improvement, and change—and leading to sustainable success. Ultimately, IRPC 4.0 is to be driven by new-generation personnel.



INFLUENCING MODEL:

- Foster Understanding and Conviction
- Reinforce with Formal Mechanisms
- Develop Talent and Skills
- Role Modeling





MESSAGE FROM THE CHAIRMAN



“

2018 marked another year of IRPC's strength to firmly put its feet on the energy and petrochemical path amid economic volatility and decreasing oil prices, with **EBITDA of THB 18.344 billion and a net profit of THB 7.735 billion**. The achievement resulted partly from the implementation of projects under the development strategy.

”

Mr. Chansin Treenuchagron
Chairman

Dear Shareholders,

The Board of Directors has defined the vision for IRPC to be the “Leading Integrated Petrochemical Complex in Asia by 2020” and formulated corporate strategic plans for the short term and the long term to ensure its growth in line with the devised direction and plans to achieve the ultimate goal within the specified timeframe.

2018 marked another year of IRPC’s strength to firmly put its feet on the energy and petrochemical path amid economic volatility and decreasing oil prices, with EBITDA of THB 18.344 billion and a net profit of THB 7.735 billion. The achievement resulted partly from the implementation of projects under the development strategy to improve performance efficiency, process improvement, including organizational management to incessantly move forward in all aspects—HR development, production, innovation, new investment projects, financial management, and becoming a leading digital company that conducts business in a social, community and environmentally responsible manner in line with the 3Ps principles (People, Planet and Prosperity). The success was a result of accurate forecast, continual preparedness, and the competency, commitment and dedication of the management and employees in efficiently managing and conducting the business under the supervision of the Board and its four committees.

The Board is pleased and honor to inform our shareholders that, in addition to our business achievements, IRPC has been recognized by domestic as well as international accredited organizations and institutions with numerous awards of honor in various fields. In particular this year, IRPC was ranked World Leader of the Oil & Gas Refining & Marketing Industry by DJSI (Dow Jones Sustainability Indices) and retained its membership for the fifth consecutive year. In addition, IRPC was ranked in a “Gold Class” in The Sustainability Yearbook 2019 and The Industry Mover with the highest score, and highest score improvement from the previous year. The ranking should ensure shareholders that IRPC is committed to conducting business with continuous development, transparent

information disclosure, and a focus on internal control and anti-corruption, while exerting its potential and readiness to become a world-leading sustainable organization.

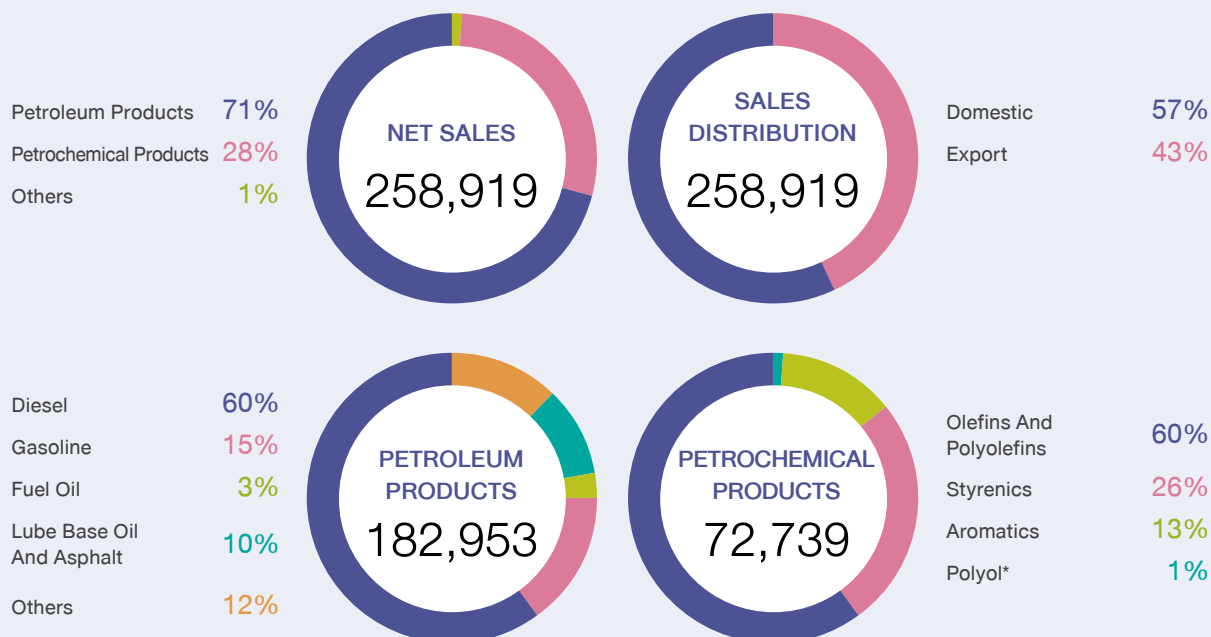
Moreover, in 2018, the Board put its full efforts in performing its roles for the utmost benefit of the company. The Board, jointly with the management, assisted in the development and problem-solving, ensured sufficiency of risk management with proper auditing, and conducted business under good corporate governance, social responsibility, fairness to all stakeholders, and respect for human rights. It also supported IRPC to become a learning organization, promoted innovation, and created a new business model with emphasis on R&D with a conviction that they are the foundation for IRPC to leap forward and contribute to essential business value creation. Directions for corporate growth was regularly defined through prudent strategic analysis covering all related factors and impacts so as to achieve concrete success for IRPC.

On behalf of the Board of Directors, I would like to express my heartfelt appreciation to everyone for their confidence in, support to, and cooperation with IRPC through the years—the shareholders, customers, business partners, government agencies, academicians, financial institutions, communities, the media, independent organizations, and to the President, executives and employees of IRPC and its affiliates for their remarkable performance, which have contributed to our great success this year. On January 30, 2019 Mr. Sukrit Surabotsopon will complete his term as President, and the Board has appointed Mr. Noppadol Pinsupa as the new President with effect from February 1, 2019. Thanks to the potential of our executives and employees, equipped with cutting-edge operating systems, I believe that IRPC will grow from strength to strength in the right directions with its business and organization health and will become a corporate governance organization with social responsibility and corporate citizenship. The success will doubtlessly multiply value addition for the shareholders and returns for stakeholders and Thailand.



KEY PERFORMANCE

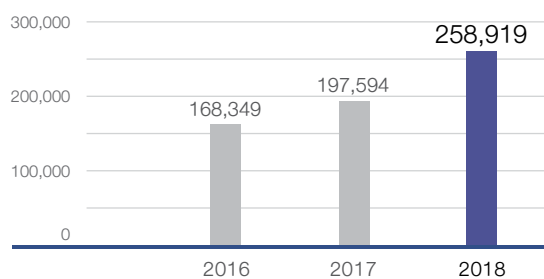
(Unit: Million Baht)



* Polyol product was sold during January – April 2018 because the Company sold additional shares of IRPC Polyol on April 30, 2018. Hence, as at December 31, 2018, the Company and PCC each hold 50% of IRPC Polyol's shares and the status of investment in IRPC Polyol was changed from a subsidiary to a joint venture.

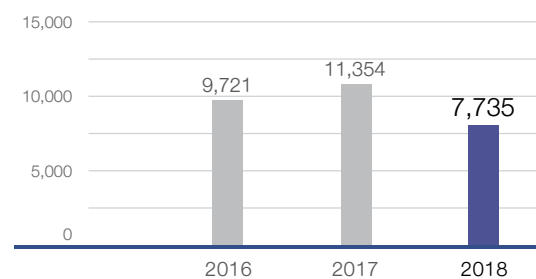
NET SALES

(Unit: Million Baht)



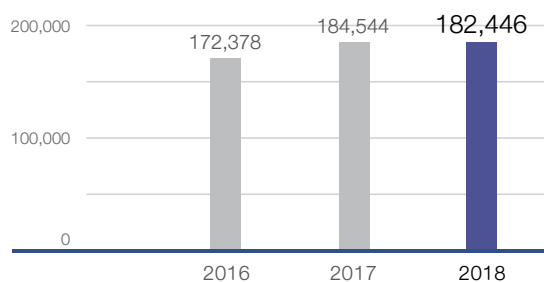
NET PROFIT

(Unit: Million Baht)



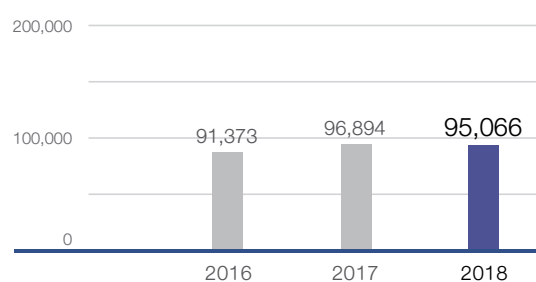
TOTAL ASSETS

(Unit: Million Baht)



TOTAL LIABILITIES

(Unit: Million Baht)



FINANCIAL HIGHLIGHTS



(Unit: Million Baht)

	2016 ⁽⁶⁾	2017 ⁽⁶⁾	2018
Financial Position			
Current Assets	39,848	47,583	46,629
Total Assts	172,378	184,544	182,446
Current Liabilities	52,429	49,353	48,896
Total Liabilities	91,373	96,894	95,066
Shareholder's Equity	81,005	87,650	87,380
Registered Capital	20,475	20,475	20,475
Paid-up Capital	20,434	20,434	20,434
Operating Performance			
Sales ⁽¹⁾	185,041	214,101	280,551
Net Sales ⁽²⁾	168,349	197,594	258,919
Cost of Goods Sold	164,900	192,946	264,637
Gross Profit (Loss)	20,140	21,155	15,914
EBITDA ⁽³⁾	17,430	20,420	18,344
Net Profit (Loss)	9,721	11,354	7,735
Financial Ratio			
EBITDA Margin	9.42%	9.54%	6.54%
Net Profit Margin	5.25%	5.30%	2.76%
Return on Assets	5.79%	6.36%	4.22%
Return on Equity	12.41%	13.48%	8.85%
Current Ratio (time)	0.76	0.96	0.95
Net Debt to Equity (time) ⁽⁴⁾	0.75	0.65	0.63
Dividend Payout	48%	52%	50%
Dividend per Share (baht/ share)	0.23	0.29	⁽⁵⁾ 0.19
Book Value per Share (baht/ share)	3.96	4.28	4.27
Earning per Share (baht/ share)	0.48	0.56	0.38

Notes:

(1) Sales includes Petroleum Sales, Petrochemical Sales, Power and Utilities Sales, Sales of storage tank and port service, etc

(2) Net Sales includes Petroleum Sales (excluding excise tax), Petrochemical Sales, Power and Utilities Sales

(3) EBITDA means Earnings before interest, taxes, depreciation and amortization

(4) Net Debt means interest bearing debt less cash and short-term investments

(5) The Board of Directors of the Company's meeting on 12 February 2019, approved to propose a dividend payment for the operating results of 2018 at THB 0.19 per share which the Company already paid as an interim dividend at THB 0.10 per share on 21 August 2018. As a result, the remaining dividend shall be paid at THB 0.09 per share. In this regard, the approval for the dividend shall be proposed to the Annual General Meeting of shareholders of the Company for the year 2019 for the further consideration and approval.

(6) The Account Reclassification



MILESTONES AND AWARDS OF SUCCESS 2018

01



02



03



JANUARY

- IRPC signed an MOU with FTI (The Federation of Thai Industries) on the [Carbon Footprint for Organization Development Project for Industry Phase 7](#).
- 01 IRPC and The Boston Consulting Group (Thailand) signed a contract whereby the consulting company will serve as consultant for digital strategy planning, [transforming IRPC into IRPC 4.0 and Thailand's leading digital company of the energy sector](#). This collaborative effort strives to find innovative ways to apply modern technology to add value to IRPC processes, including Operation System (OPS 4.0), Integrated Supply Chain (ISC 4.0), Corporate Commerce & Marketing (CCM 4.0), and Enterprise Resource Planning (ERP 4.0).
- 02 IRPC signed an MOU on [CAT-REAC industrial project \(concerning catalysts and chemical reaction engineering\)](#) with the Thailand Research Fund, Chulalongkorn University, and the private industrial sector to enhance domestic R&D capabilities by applying innovative science and technology as a prototype "OPEN INNOVATION" to sharpen the R&D capability with which private companies cooperate in the research of catalysts in Thailand. The private and public sector will integrate their expertise to develop catalyst technologies for the petroleum and petrochemical industries.

FEBRUARY

- The signing of an [MOU on PTT Rayong Academy](#) between PTT Rayong Football Club and IRPC Technology College (IRPCT). In addition, youth footballers can choose to pursue vocational education with IRPCT, which is ready to support them and provide opportunities to pursue professional education.
- IRPC joined in the announcement of the ["Human Rights as a Driving Force of Thailand 4.0 toward Sustainable Development"](#) National Agenda.
- 03 IRPC accepted a [Golden Peacock Global Award for CSR 2017](#) from the Institute of Directors (IOD), India, in recognition of its social responsibility by effectively deploying existing resources inside and outside the corporation alike.



Top **100** Global Energy
Leader accolade in 2017



Earned **Excellent CG Scoring**
for a **10th** consecutive year

04



05



06



- 04 IRPC accepted a **2017 Top 100 Global Energy Leader accolade from Thomson Reuters**, a world leader in information resources that provides information, technology, and expertise in various fields. This is also a most trusted news organization worldwide.

- IRPC and PCC Rokita SA of Poland signed a **share sales agreement for IRPC Polyol Co., Ltd., for an of additional 25%** to the latter company to strengthen its Southeast Asian market position and develop products with new properties to support product development.

MARCH

- 05 IRPC joined the launching of "**Thailand Blockchain Community Initiative**", organized by the Bank of Thailand in collaboration with 14 banks and seven state-owned enterprises and corporations in bringing the Blockchain technology to enhance efficiency and competitiveness of businesses in Thailand.

- IRPC accepted awards from **Total Productive Maintenance & Management (TPM)** of Japan Institute of Plant Maintenance (JIPM):

- Refinery, Lube Base Oil Plant, and Tank Farm: TPM Part 2: Award for Excellence in Consistent TPM Commitment. The TPM Part 1: Award for TPM Excellence was achieved in 2016.
- Olefins Plant, Aromatic Plant, and Tank Farm: TPM Part 1: Award for TPM Excellence.

- 06 IRPC and UOP LLC entered into a License Agreement and Engineering Agreement for **Maximum Aromatics (MARS) Project**. UOP LLC was selected as Technology Licensor of the project and will complete preliminary engineering design by 2018.

07



08



09



APRIL

- 07 IRPC Ayutthaya Depot won an [ASEAN-OSHNET Award](#) (Best Practice, Safety and Occupational Health) from the Ministry of Labour and Vocational Training, Cambodia.

MAY

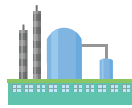
- IRPC accepted an award of certificate and a plaque for its [Eco Industrial Zone \(EIZ\), Level 5 \(Happiness\)](#), from the Department of Industrial Works, Ministry of Industry.

JUNE

- 08 IRPC won an [Asia-Pacific Stevie Award 2018, Bronze Award](#) for Innovation in Human Resources Management, Planning & Practice. Chosen from over 200 executives, entrepreneurs, innovators, and business educators that are globally recognized, IRPC was honored so as to create public awareness of its success and positive contribution.

- 09 IRPC accepted an [Asia Responsible Entrepreneurship Award 2018](#) for Social Empowerment from the Smile Farm of the Chance Project, presented by Enterprise Asia.

- IRPC joined The Plastic Industry Club of FTI, Thailand Business Council for Sustainable Development (TBCSD) members, the private sector, and Thailand Environment Institute in the signing of an [MOU declaring the support to drive public, business, and civil sector cooperative project to sustainably manage plastics and waste](#). The pact demonstrated a common intention to address waste problems and promote sustainable use of plastics amid the Circular Economy with a view to halve cut plastic waste in Thai seas by 2027.



Eco Industrial Zone (EIZ),
Level **5** (Happiness)



Thailand Energy Award 2018
for Outstanding Plant Management



Asia-Pacific Stevie Awards 2018
Bronze Award

10



11



12



- 10 IRPC together with 36 private organizations declared the intention to conduct business under Thailand's sustainable development policy and joined in the "Private Sector in Propelling Sustainable Development" intention announcement ceremony.

- 11 IRPC was honored with three Asian Excellence Awards 2018:

- Asia's Best CEO (Investor Relations) - Mr. Sukrit Surabotsopon, President
- Asia's Best CFO (Investor Relations) - Mrs. Rachadaporn Rajchataewindra, Senior Executive Vice President, Corporate Accounting & Finance
- Best Investor Relations Company for a fifth consecutive year.

AUGUST

- 12 Mr. Sukrit Surabotsopon, President, accepted a Thailand Energy Award 2018 for Outstanding Plant Management from the Ministry of Energy.
- The opening ceremony of the "Kaem Ling Canal Lam Sai Yong Model Project" at Tambon Nong Kaeo, Amphor Muang, Sisaket Province. IRPC commanded a policy to place 3% of the previous three years' average net income into its CSR budget, since continued CSR implementation is essential in boosting the confidence of society and communities.
 - IRPC was honored with Green Industry 4 (GI4) awards by the Department of Industrial Works for its nine plants:

13



14



15



SEPTEMBER

- IRPC hosted a press conference regarding the [IRPC 4.0 project](#), a key strategy driving the corporation toward digital leadership in the petrochemical sector by 2020. The project is [under the "Power of Digital" GDP strategic plan](#), integrating digital and cutting-edge innovations into business processes to enhance operation optimization. It is expected that the added value will exceed THB 3.3 billion a year.
- IRPC provided 2 scholarships worth 600,000 Baht each, to students of The Petroleum and Petrochemical College, Chulalongkorn University.
- IRPC accepted an [Eco Factory Award](#) from the Ministry of Industry for its five plants: Refinery, Ethylene, Lube Base Oil, Nano Chemical, and Combined Heat and Power.
- IRPC retained its Dow Jones Sustainability Indices (DJSI) membership for a fifth consecutive year, [topping the global leaders of the oil and gas refining and marketing industry](#).

OCTOBER

- 13 IRPC was honored with the [Best SET Sustainability Award 2018](#) for being a listed company with outstanding sustainable business operation, and with the Thailand Sustainability Investment Award (THSI) from SET.
- For a 10th consecutive year, IRPC earned [Excellent CG Scoring](#) or scoring of five emblems. It is also one of the Top Quartile of listed companies with market value of at least "100,000 MB" under the Corporate Governance Report (CGR) program, organized by Thai Institute of Directors (IOD) and SET.
- 14 IRPC accepted a [Top Community Care Companies in Asia 2018 Awards](#) as an outstanding organization in CSR from Asia Corporate Excellence & Sustainability Awards (ACES).
- 15 IRPC accepted from [the International Business Awards \(Stevie Awards\), USA, BRONZE STEVIE® WINNERS 2018, Communications \(PR Campaign/ Program of the Year - Internal Communications\)](#) for implementing and designing internal communication campaigns, including Teammate Blog, IRPC Ambassadors, Do Things Together, and One Coin One Chance.



MEMBER OF
**Dow Jones
Sustainability Indices**
In Collaboration with RobecoSAM



Best SET **Sustainability
Award 2018**

Topping the global leaders
of the oil and gas refining industry

SET Awards 2018
Best Innovative Company
Award

16



17



18



NOVEMBER

- 16 IRPC accepted an **SET Award 2018** - Best Innovative Company Award, in recognition of its conversion of HDPE to specialty pipe-grade HDPE from SET in conjunction with Money and Banking Magazine.
- IRPC joined PTT Oil and Retail Business Public Company Limited or PTTOR in **creating a new concept for Cafe` Amazon**, PTT Head Office, customers by designing and decorating the shop with furniture and appliances produced from environmentally friendly plastic polymers under the **"Green Concept"**.
- IRPC was honored with the second **ASEAN Corporate Governance Award** this year as a Thai listed company among the Top 50 ASEAN public companies with excellent CG scores at the ASEAN CG Scorecard 2017 event, held in Kuala Lumpur, Malaysia. The participating countries consisted of Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam.
- IRPC together with leading universities and corporations launched **"B.VER - Blockchain Solution for Academic Document Verification"**, a digital platform for monitoring educational materials with Blockchain technology. For the first time in Thailand through an online, real-time platform, the technology enables educational institutions or other organizations to verify educational qualifications or transcripts.

DECEMBER

- 17 Mr. Sukrit Surabotsopon, President, as a founding member (among 15 co-founding companies) co-launched **"Global Compact Network Thailand" (GCNT)**, aimed to accelerate a balanced, sustainable economic, social and environmental development under the United Nations Global Compact, a private sector network for sustainable development.
- IRPC accepted an **"Excellent" Sustainability Report Award 2018** from SET for a sixth consecutive year.
- 18 IRPC accepted **The Prime Minister's Industry Awards 2018** from the Ministry of Industry:
 - Quality Management - Olefins Plant
 - Energy Management - Ethylene Plant
 - Productivity Improvement - BTX Plant
 - Safety Management - Condensate Residue Plant
 - Energy Management and Social Responsibility - Polystyrene Plant

2018 Awards which are announced in 2019

- NACC integrity Awards
- Thailand Quality Class: TQC





BOARD RESPONSIBILITY

Board of Directors

Organization Structure

Management Team

Internal Control

Report of the Audit Committee

Message from the Chairman,
Corporate Governance Committee

Message from the Chairman,
Nomination and Remuneration Committee

Message from the Chairman,
Risk Management Committee



BOARD OF DIRECTORS



STANDING:	Mr. Kris Imsang	Mr. Jessada Promjart	Mr. Ekniti Nitithanprapas	General Sasin Thongpakdee	Mr. Worawat Pitayasiri
	Director/ Member of Corporate Governance Committee	*Independent Director/ *Member of Audit Committee	Director/ Member of Risk Management Committee	Independent Director/ Member of Corporate Governance Committee	Director/ Member of Risk Management Committee
	(Appointed: 2 Dec 2017 - Present)	*(Appointed: 1 Sep 2016 - Present)	(Appointed: 17 Nov 2015 - Present)	(Appointed: 1 Sep 2014 - Present)	(Appointed: 19 Sep 2018 - Present)
SITTING:	Mr. Anusorn Sangnimnuan	Mr. Chansin Treenuchagron			
	Independent Director/ Chairman of Corporate Governance Committee	*Chairman			
	(Appointed: 27 Aug 2016 - Present)	*(Appointed: 31 Aug 2018 - Present)			

REMARK: *Appointed Date


Miss Ruenvadee Suwanmongkol

Independent Director/
Member of Audit Committee

(Appointed: 1 Apr 2016 - Present)

General Theppong Tippayachan

Independent Director/
Member of Corporate Governance
Committee

(Appointed: 1 Sep 2016 - Present)

Mr. Somnuk Bomrungsalee

*Independent Director/
Chairman of Audit Committee

**(Appointed: 1 Oct 2017 - Present)*

Mr. Preecha Pocatanaawat

Director/
Member of Nomination and
Remuneration Committee

(Appointed: 19 Sep 2018 - Present)

Mr. Woothisarn Tanchai

Independent Director/
Chairman of Nomination and
Remuneration Committee

(Appointed: 19 Jun 2015 - Present)

Mr. Sukrit Surabotsopon

Director/
Member of Risk Management Committee/
President/
Secretary of the Board of Directors

(Appointed: 1 Oct 2013 - 30 Jan 2019)

Mr. Nuttachat Charuchinda

Director/
Chairman of Risk Management
Committee

(Appointed: 29 Apr 2016 - Present)



Boards of Directors, IRPC Public Company Limited

Mr. Chansin Treenuchagron

Chairman

A Director who is authorized to sign on behalf of the Company

Age: 58 Years

Directorship Starting Date: 20 October 2015

Education/ Training

- Bachelor of Economics Program, Thammasat University
- Master of Economic, Chulalongkorn University
- Executive Development Relation, Class 1, Directorate of Civil Affairs
- The Executive Program in Energy Literacy for a Sustainable Future, Class 7/ 2015, Thailand Energy Academy (TEA7)
- Diploma, National Defence College, The National Defence Course, Class 57/ 2014, Thailand National Defence College
- Leadership Development Program III (LDP III), Class 1/ 2014, PTT Public Company Limited
- Advance Senior Executive Program (ASEP-5), Class 5/ 2010, KELLOGG & SASIN, Chicago, USA
- Air War College, Class 35/ 2006
- Senior Executive Program (SEP), Class 20, Sasin Graduate Institute of Business Administration of Chulalongkorn University
- PTT Executive Leadership, General Electric, GE, New York, USA
- Advanced Certificate Course in Public Economics Management for Executives, Class 10, King Prajadhipok's Institute
- Leadership Excellence through Awareness and Practice (LEAP), INSEAD, Singapore & France
- Chartered Director Class (CDC), Class 11/ 2015, Thai Institute of Directors Association (IOD)
- Director Accreditation Program (DAP), Class 93/ 2011, Thai Institute of Directors Association (IOD)
- Financial Statements for Directors (FSD), Class 12/ 2011, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 85/ 2007, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

Jan 2018 – Aug 2018	Chief Technology and Engineering Officer, PTT Public Company Limited
Dec 2017 – Aug 2018	Chairman, PTT Digital Solutions Company Limited
Oct 2017 – Aug 2018	Director/ Member of Risk Management Committee/ Member of Nomination and Remuneration Committee, Global Power Synergy Public Company Limited
Apr 2016 – Aug 2018	Member of Risk Management Committee, IRPC Public Company Limited
Oct 2015 – Aug 2018	Director, IRPC Public Company Limited
Oct 2017 – Dec 2017	Chief Operating Officer, Infrastructure and Sustainability Management Business Group, PTT Public Company Limited

Apr 2017 – Dec 2017

Jan 2016 – Sep 2017

Nov 2015 – Dec 2017

Nov 2015 – Mar 2017

Oct 2015 – Dec 2015

Oct 2014 – Dec 2015

Apr 2015 – Oct 2015

Oct 2014 – Sep 2015

Apr 2012 – Jul 2015

Mar 2013 – Sep 2014

Nov 2012 – Sep 2014

Jun 2012 – Sep 2014

Feb 2012 – Sep 2014

Nov 2011 – Sep 2014

Nov 2011 – Aug 2014

Dec 2011 – Jun 2014

Oct 2011 – Feb 2013

Chairman,

PTT Asahi Chemical Company Limited
Senior Executive Vice President,
Downstream Business Group Alignment,
PTT Public Company Limited
Chairman,
PTT Polymer Marketing Company Limited
Chairman,
PTT Polymer Logistics Company Limited
Senior Executive Vice President,
Petrochemicals & Refining Business Unit,
PTT Public Company Limited
Chairman, PTT Green Energy (Thailand)
Company Limited
Director, Thai Oil Public Company Limited
Senior Executive Vice President,
Corporate Strategy,
PTT Public Company Limited
Director,
PTT Polymer Logistics Company Limited
Senior Executive Vice President,
Corporate Commercial and Marketing,
IRPC Public Company Limited
Director,
PTT Polymer Marketing Company Limited
Director, UBE Chemical (Asia)
Public Company Limited
Director,
Rayong Acetylene Company Limited
Director, IRPC Polyol Company Limited
Chairman, Rak Pa Sak Company Limited
Director,
Technology IRPC Company Limited
Senior Executive Vice President,
Corporate Port and Asset Management
Business Unit,
IRPC Public Company Limited

Current Position

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

Aug 2018 – Present	President/ Chief Executive Officer/ Director/ Secretary to the Board, PTT Public Company Limited
Aug 2018 – Present	Chairman, IRPC Public Company Limited
Sep 2018 – Present	Director, PTT Exploration and Production Public Company Limited

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

None

Mr. Woothisarn Tanchai

Independent Director/ Chairman of Nomination and Remuneration Committee

Age 60 Years

Directorship Starting Date: 19 June 2015

Education/ Training

- Bachelor of Science, Khon Kaen University
- Master of Public Administration, National Institute of Development Administration (NIDA)
- Master of Policy Science (M.P.S.), International Program, Saitama University, Japan
- Public Law Certificate, Faculty of Law, Thammasat University
- Public Director Certification Program (PDI), Class 1, King Prajadhipok's Institute

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

2011 – Aug 2018	Member, the National Culture Commission
Oct 2014 – Apr 2015	Member of Risk Management Committee, IRPC Public Company Limited
Apr 2013 – Apr 2015	Chairman of Nomination and Remuneration Committee, IRPC Public Company Limited
2012	Member of Audit Committee, IRPC Public Company Limited
Apr 2009 – Apr 2015	Independent Director, IRPC Public Company Limited

Current Position

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

Jun 2015 – Present	Independent Director/ Chairman of Nomination and Remuneration Committee, IRPC Public Company Limited
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Board member/ Management in Non-Listed Company – The Stock Exchange of Thailand

Sep 2017 – Present	Director, Member of the Board of Directors of the Strategy for Balancing and Developing the Public Sector management System
2016 – Present	Member, Thammasat University Council
2015 – Present	Advisor, Constitution Drafting Committee 2015
Dec 2014 – Present	Secretary General, King Prajadhipok's Institute
2011 – Present	Sub-Committee, the Office of the Public Sector Development Commission (OPDC)
2011 – Present	Sub-Committee, the National Anti-Corruption Commission (NACC)
2008 – Present	Member, Nakhon Ratchasima Rajabhat University Council

Mr. Anusorn Sangnimnuan

Independent Director/ Chairman of Corporate Governance Committee

Age 64 Years

Directorship Starting Date: 27 August 2016

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
- 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/ 2015, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

2014 – 2017	Independent Director, Pruksa 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
2014 – 2015	Member of the National Reform Council
2014 – 2015	Director, Loxley Public Company Limited
2013 – 2015	Senior Consultant, The Bangchak Petroleum Public Company Limited
2005 – 2012	President, The Bangchak Petroleum Public Company Limited
2011 – 2012	Chairman, Bangchak Solar Energy Company Limited
2011 – 2012	Chairman, The Ubon Bioethanol Company Limited
2008 – 2012	Chairman, The Bangchak Biofuel Company Limited
2008 – 2011	Chairman, Thailand Business Council for Sustainable Development (TBCSD)
2008 – 2011	Director, Thai Capital Market Organizations
2007 – 2011	Director, Thai Listed Companies Association

Current Position

Board member/ Management in Listed Company

– The Stock Exchange of Thailand

Sep 2016 – Present	Chairman of Corporate Governance 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, Pruksa 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. Nuttachat Charuchinda

**Director/ Chairman of Risk Management Committee/
A Director who is authorized to sign on behalf of the
Company**

Age 63 Years
Directorship Starting Date: 29 April 2016

Education/ Training

- Bachelor of Engineering, Chiangmai University
- Master of Business Administration, Thammasat University
- Program for Global Leadership (PGL), Harvard Business School, USA
- Oxford Energy Seminar, UK
- Break Through Program for Senior Executives (BPSE), IMD Institute, Switzerland
- Diploma, National Defence College, The Joint State - Private Sector Course, Class 20, Thailand National Defence College
- Executive Program, Class 15, Capital Market Academy (CMA)
- Executive Program, Energy Education, Class 3, Thailand Energy Academy
- Director Certification Program (DCP), Class 129/ 2010, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

May 2014 – Apr 2016	Chairman PTT Energy Resources Company Limited
2013 – Apr 2016	Director, Thai Oil Public Company Limited
2013 – Nov 2015	Director, PTT Exploration and Production Public Company Limited
2013 – 2015	Chief Operating Officer, Upstream Petroleum and Gas Business Group, PTT Public Company Limited
2011 – 2013	Chief Operating Officer, Downstream Petroleum Business Group, PTT Public Company Limited
2010 – 2011	Senior Executive Vice President, Corporate Strategy, PTT Public Company Limited

Current Position

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

Jan 2019 – Present	Director, PTT Public Company Limited
Apr 2016 – Present	Director/ Chairman of Risk Management Committee, IRPC Public Company Limited
Aug 2017 – Present	Director, National Power Supply Public Company Limited

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

Dec 2017 – Present	President, Ritta Holdings Company Limited
Jul 2017 – Present	President, Bangkok Mass Transit Authority

General Theppong Tippayachan

**Independent Director/
Member of Corporate Governance Committee**

Age 60 Years
Directorship Starting Date: 1 September 2016

Education/ Training

- Armed Forces Preparatory School, Class 18/ 1975
- Chulachomklao Royal Military Academy, Class 29/ 1977
- Master of Public Administration, Burapha University
- Diploma, National Defence College, The National Defence College, Class 54/ 2011, Thailand National Defence College

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

Oct 2017 – Sep 2018	Permanent Secretary for Defence
Oct 2016 – Sep 2017	Assistant Commander in Chief, Royal Thai Army
Aug 2014 - Nov 2016	Director, Provincial Waterworks Authority
Oct 2015 – Sep 2016	1 st Army Area Commander
Oct 2014 – Sep 2015	1 st Corps Commander
Oct 2013 – Sep 2014	Deputy Commander of 1 st Army Area
Oct 2011 – Sep 2013	Commanding General of 2 nd Infantry Division, Queen's Guard

Current Position

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

Apr 2017 – Present	Member of Corporate Governance Committee, IRPC Public Company Limited
Sep 2016 – Present	Independent Director, IRPC Public Company Limited

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

Jun 2018 – Present	High Court Judge
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General Sasin Thongpakdee

**Independent Director/
Member of Corporate Governance Committee**

Age 60 Years
Directorship Starting Date: 1 September 2014

Education/ Training

- Armed Forces Academy Preparatory School, Class 17
- Chulachomklao Royal Military Academy, Class 28
- Royal Thai Army Command and General Staff College, Class 68
- Joint Services Staff College, Thailand, Class 40
- Diploma, National Defence College, The Joint State-Private Sector Course, Class 24, Thailand National Defence College
- The Board's Role in Strategic Formulation, Governance Matters Australia

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

Oct 2017 – Sep 2018	Deputy Commander in Chief, Royal Thai Army
Oct 2016 – Sep 2017	Chief of Staff, Royal Thai Army
Oct 2015 – Sep 2016	Deputy Chief of Staff, Royal Thai Army
Oct 2012 – Sep 2015	Directorate of Operations

Current Position

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

Oct 2014 – Present	Member of Corporate Governance Committee, IRPC Public Company Limited
Sep 2014 – Present	Independent Director, IRPC Public Company Limited

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

None

Mr. Somnuk Bomrungsalee

Independent Director/ Chairman of Audit Committee

Age 61 Years

Directorship Starting Date: 9 April 2014

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
- Director Certification Program (DCP), Class 233/ 2017, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

Nov 2017 – 2018	Sub-Committee, State Audit Commission, Office of the Auditor General of Thailand
Apr 2016 – Nov 2017	Member of Nomination and Remuneration Committee, IRPC Public Company Limited
Oct 2016 – Sep 2017	Deputy Secretary of Energy
Jul 2014 – Sep 2016	Inspector General, Ministry of Energy
2013 – 2014	Director – General, Department of Energy Business, Ministry of Energy
2011 – 2013	Deputy Director General, Department of Energy Business
2006 – 2011	Director, Bureau of Fuel Business Safety, Department of Energy Business

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 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

Feb 2018 – Present	Advisor, Energy Fund Administration Institute
Oct 2015 – Present	Sub-Committee, Energy Commission, The National Legislative Assembly

Mr. Jessada Promjart

Independent Director/ Member of Audit Committee

Age 57 Years

Directorship Starting Date: 16 March 2016

Education/ Training

- Bachelor of Accounting, Thammasat University
- Master of Accounting, Thammasat University
- Advanced Diploma, Public Administration and Public Law, Class 12/ 2013, King Prajadhipok's Institute
- TLCA Executive Development Program (EDP), Class 9/ 2012, Thai Listed Company Association
- The Anti-Corruption Strategic Management Course for Senior Executive, Class 1/ 2010, Office of the National Anti-Corruption Commission
- Public Director Certification Program (PDI), Class 14, King Prajadhipok's Institute
- Ethical Leadership Program (ELP), Class 5/ 2016, Thai Institute of Directors Association (IOD)
- Company Secretary Program (CSP), Class 07/ 2004, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 45/ 2004, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

No. of share "IRPC": 25,000 หุ้น

(Self: 5,000 Share Possession: 0.00002 %)

(Spouse: 20,000 Share Possession: 0.00010 %)

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

Apr 2015 – Apr 2018	Independent Director/ Audit Committee, Nation Broadcasting Corporation Public Company Limited
Jun 2016 – Apr 2017	Director, Chu Kai Public Company Limited
Apr 2015 – May 2016	Audit Committee and Advisors, Chulabhorn Hospital
Sep 2014 – May 2016	Chief Executive Officer, Chu Kai Public Company Limited
Sep 2014 – May 2016	Director, The Crane Services Company Limited
Sep 2014 – May 2016	Director, The Crane Laem Chabang Company Limited
Sep 2014 – May 2016	Director, The Crane Rayong Company Limited
Sep 2014 – May 2016	Director, The Crane Heavy Lift Company Limited
2014	Vice Chairman of the Board, SEED MCOT Company Limited
2013 – 2014	Executive Vice President and Chief Financial Officer, MCOT Public Company Limited
2011 – 2012	Director, True Corporation Public Company Limited

2009 – 2013	Chief Financial Officer, MCOT Public Company Limited
2008 – 2015	Director, D-Land Development Company Limited
2008 – 2014	Independent Director and Audit Committee, Chu Kai Public Company Limited

Current Position

Board member/ Management in Listed Company

— The Stock Exchange of Thailand

Sep 2016 – Present	Independent Director/ Member of Audit Committee, IRPC Public Company Limited
Mar 2016 – Present	Director, IRPC Public Company Limited
Apr 2015 – Present	The Corporate Governance Committee, Joint Operation Agreement between Bangkok Entertainment Company Limited (BEC) and MCOT Public Company Limited

Board member/ Management in Non-Listed Company

— The Stock Exchange of Thailand

Jun 2018 – Present	Director and Executive Director, YSS (Thailand) Company Limited
Dec 2018 – Present	Director, YSS Training Company Limited
Apr 2017 – Present	Audit Committee, Chulabhorn Royal Academy
Nov 2016 – Present	Director and Audit Committee, Expressway Authority of Thailand
Dec 2015 – Present	Director and Audit Committee, Government Savings Bank (Thailand)
Apr 2015 – Present	Director of Construction Sector, Chulabhorn Hospital and Chulabhorn Medicine Institute, Chulabhorn Hospital
Mar 2015 – Present	Corporate Governance Committee of the agreement of shopping center, Pahonyothin road's advantage between State Railway of Thailand and Central Inter Patthana Company Limited

Miss Ruenvadee Suwanmongkol

Independent Director/ Member of Audit Committee

Age 54 Years

Directorship Starting Date: 1 April 2016

Education/ Training

- LL.B. (1st Class Honor and Gold Medal) Chulalongkorn University
- M.B.A. Walter A. Haas School of Business, University of California at Berkeley
- L.L.M. Harvard Law School, Cambridge Massachusetts, USA
- Barrister-at-Law Legal Training Institute, Thai Bar Association
- The Programme of Senior Executives on Justice Administration Batch 15 National Justice Academy Judicial Training Institute Office of Judiciary
- Diploma, National Defence College, The Joint State-Private Sector Course, Class 25, Thailand National Defence College
- The Anti-Corruption Strategic Management Course for Senior Executive, Class 5, Office of the National Anti-Corruption Commission
- Advanced Certificate Course in Promotion of Peaceful Society, Class 2, King Prajadhipok's Institute
- Budgeting for Executive Program, Class 2, Bureau of Budget
- Government Senior Legal Executives Training Program, Class 6, Office of the Council of State
- Director Certification Program (DCP), Class 127/ 2010, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

Mar 2011 – Feb 2017	Director, Thai Committee for Refugees Foundation
2012 – 2014	Director-General, Department of Probation, Ministry of Justice
2012	Inspectors General, Ministry of Justice, Spokesperson of the Ministry of Justice
2009 – 2011	Deputy Director-General, Office of Justice Affairs, Ministry of Justice

Current Position

Board member/ Management in Listed Company

– The Stock Exchange of Thailand

Apr 2016 – Present	Independent Director/ Member of Audit Committee, IRPC Public Company Limited
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Board member/ Management in Non-Listed Company

– The Stock Exchange of Thailand

Feb 2016 – Present	Member of Board Directors/ Member of the Scrutiny Sub-Committee/ Chairman of the Legal Counseling Sub-Committee, Bank for Agriculture and Agricultural Cooperatives
Jul 2015 – Present	Member of Board of Directors/ Chairman of Risk Management, Dhanarak Asset Development Committee Member, The Foundation AssaneePollajan
Nov 2015 – Present	Director-General, Legal Execution Department, Ministry of Justice
2014 – Present	Committee Member, The Foundation of Business Lawyer Promotion
Jul 2013 – Present	Committee Member, Women for Peace foundation
Present	

Mr. Ekniti Nitithanprapas

Director/ Member of Risk Management Committee

Age 47 Years
Directorship Starting Date: 17 November 2015

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
- 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)
- 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)

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

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
Nov 2014 – Sep 2015	International Economic Advisor of Fiscal Policy Office, Ministry of Finance
Nov 2012 – Nov 2014	Deputy Director-General of Fiscal Policy Office, Ministry of Finance
Sep 2010 – Nov 2012	Minister (Economics and Finance), Office of Economics and Financial Affairs for UK and Europe, Royal Thai Embassy, UK

Current Position

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

Jul 2018 – Present	Chairman, Thai Airways International Public Company Limited
Jun 2018 – Present	Director, Thai Airways International Public Company Limited
Jun 2018 – Present	Director/ Chairman, Krungthai Bank Public Company Limited
Mar 2016 - Present	Member of 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 2018 – Present	Director-General of the Revenue Department
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Mr. Kris Imsang

Director/ Member of Corporate Governance Committee

Age 53 Years
Directorship Starting Date: 2 December 2017

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, Class 2, PTT Public Company Limited
- Top Executive Program, Class 23, Capital Market Academy (CMA)
- Top Executive in Energy Program, Class 9, Thailand Energy Academy (TEA)
- Director Certification Program (DCP), Class 139/ 2010, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

Jan 2018 – Sep 2018	Senior Executive Vice President, Organization Management and Sustainability, PTT Public Company Limited
Feb 2016 – Dec 2017	Senior Executive Vice President, Human Resources & Organization Excellence, PTT Public Company Limited
Aug 2015 – Jan 2016	Executive Vice President, Retail Marketing, PTT Public Company Limited
Oct 2013 – Jul 2015	Executive Vice President, Petroleum Terminal Operations, PTT Public Company Limited

Current Position

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

Oct 2018 – Present	Senior Executive Vice President, Corporate Governance and Regulatory Affairs, PTT Public Company Limited
Dec 2017 – Present	Director/ Member of Corporate Governance Committee, IRPC Public Company Limited

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

Sep 2017 – Present	Chairman, Sarn Palung Social Enterprise Company Limited
Jul 2016 – Present	Committee, Vidyasirimedhi Institute of Science and Technology (VISTEC)
Mar 2016 – Present	Committee, Kamnoetvidya Science Academy (KVIS)
Feb 2016 – Present	Chairman, Energy Complex Company Limited
2015 – Present	Committee, Chulalongkorn University Alumni Association (CUAA)
2015 – Present	Committee, Faculty of Engineering, Chulalongkorn University

Mr. Worawat Pitayasiri

**Director/
Member of Risk Management committee**

Age 52 Years
Directorship Starting Date: 19 September 2018

Education/ Training

- Bachelor of Engineering (Chemical Engineering), Chulalongkorn University
- Master of Business Administration (M.B.A.), Thammasat University
- Asia Petrochemical Industry Conference (APIC) Class 2/ 2017, Japan Petrochemicals Industry Association
- PTT Group VP Leadership Development Program, PTT Public Company Limited
- Senior Executive Program (SEP), Class 26/ 2012, Sasn Graduate Institute of Business Administration, Chulalongkorn University
- Advanced Certificate Course Politics and Governance in Democratic Systems for Executives, Class 22, King Prajadhipok's Institute
- NIDA – Wharton Executive Leadership Program, Class 2009, The Wharton School of the University of Pennsylvania, USA
- Director Certification Program (DCP), Class 158/ 2012, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

May 2018 – Nov 2018	Chairman, PTT Tank Terminal Company Limited
Oct 2016 – Sep 2018	Executive Vice President, Downstream Business Group Planning, PTT Public Company Limited
Mar 2016 – Sep 2016	Executive Vice President, Downstream Business Group Collaboration, PTT Public Company Limited
Jul 2015 – Mar 2016	Executive Vice President, PTT Public Company Limited
Jul 2015 – Mar 2016	President, PTT MCC Biochem Company Limited

Current Position

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

Sep 2018 – Present	Director/ Member of Risk Management committee, IRPC Public Company Limited
Sep 2018 – Present	Senior Executive Vice President, Innovation and Digital, PTT Public Company Limited

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

None

Mr. Preecha Pocatanawat

**Director/
Member of Nomination and Remuneration Committee**

Age 58 Years
Directorship Starting Date: 19 September 2018

Education/ Training

- Bachelor of Laws (LLB), Ramkhamhang University
- Barrister-at-Law, The Institute of Legal Education, Thai Bar Association, Thailand
- Bachelor of Business Administration (BBA), Ramkhamhang University
- Leadership Development Program III (LDP III) 2018, Singapore
- IRDPE Leadership & Effective Corporate Culture Program 2018, Institute of Research & Development for Public Enterprises (IRDPE)
- Senior Executive Certificate in Anti-Corruption Strategic Management, Class 8/ 2017, Sanya Dharmasakti National Anti-Corruption Institute (SDI)
- Strategy and Innovation for Business in Asia Program (SIBA), Class 4/ 2015, College of Management Mahidol University
- Leadership Development Program II (LDP II) 2014, China
- Director Certification Program (DCP), Class 261/ 2018, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

Dec 2016 – Sep 2018	Director, IRPC Technology Company Limited
2015 – Sep 2018	Executive Vice President, Corporate Human Resources, PTT Public Company Limited
2012 – 2015	Vice President, Finance, Account and Corporate Support, HMC Polymer Company Limited
2010 – 2012	Vice President, Strategic Financial Management and Policy, PTT Public Company Limited
2006 – 2010	Vice President, Financial Risk Management and Credit Policy, PTT Public Company Limited

Current Position

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

Sep 2018 – Present	Director/ Member of Nomination and Remuneration Committee, IRPC Public Company Limited
Oct 2018 – Present	Senior Executive Vice President, Organization management and Sustainability, PTT Public Company Limited

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

2018 – Present	Chairman, Business Services Alliance Company Limited
2018 – Present	Chairman, Business Professional Solutions Company Limited
2015 – Present	Director, Energy Complex Company Limited

Mr. Tevin Vongvanich

(Resigned 31 August 2018) Age 60 Years

Education/ Training

- B.E. Chemical Engineering (1st Class Honor), Chulalongkorn University
- M.Sc. Chemical Engineering, Rice University, USA
- M.Sc. Petroleum Engineering, University of Houston, USA
- Honorary Doctorate of Philosophy, Civil Engineering Department, Faculty of Industry and Technology, Rajamangala University of Technology Isan
- Honorary Doctorate of Engineering, Chulalongkorn University
- Senior Executive Program (SEP), Class 7, Sasin Graduate Institute of Business Administration, Chulalongkorn University
- Program for Global Leadership (PGL), Class 3, Harvard Business School, USA
- Top Executives Program, Class 6, Capital Market Academy, the Stock Exchange of Thailand
- Diploma, National Defence College, The Joint State-Private Sector Course, Class 22, Thailand National Defence College
- The Executive Program in Energy Literacy for a Sustainable Future (TEA), Class 3, Thailand Energy Academy
- Advanced Certificate Course Politics and Governance in Democratic Systems for Executives, Class 10, King Prajadhipok's Institute
- Public Director Certification Program (PDI), Class 7, King Prajadhipok's Institute
- Ethical Leadership program (ELP), Class 7/ 2017, Thai Institute of Directors Association (IOD)
- Anti-Corruption for Executive Program (ACEP), Class 15/ 2015, Thai Institute of Directors Association (IOD)
- Role of the Compensation Committee (RCC), Class 13/ 2011, Thai Institute of Directors Association (IOD)
- Financial Statements for Directors (FSD), Class 6/ 2009, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 21/ 2002, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

No. of share "IRPC": 900 Share Possession: 0.00 %

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

Aug 2017 – 2018	Director, Member of the Economic Reform Commission
Jun 2016 – 2018	Honorary Board Member, The Public Sector Development Commission
Jul 2015 – 2018	Honorary Board Member, National Science and Technology Development Agency
Oct 2015 – Aug 2018	Chairman, IRPC Public Company Limited
Sep 2015 – Aug 2018	President/ Chief Executive Officer/ Director/ Secretary to the Board, PTT Public Company Limited
Nov 2014 – 2018	Chairman, Information and Public Communication Management Sub-committee, National Committee on Competitive Advantage (NCC), National Economic and Social Development Board (NESDB)
Sep 2014 – Sep 2015	Chairman, MCOT Public Company Limited
May 2012 – Sep 2015	President/ Chief Executive Officer, PTT Exploration and Production Public Company Limited
Jan 2010 – Apr 2012	Chief Financial Officer, PTT Public Company Limited
Apr 2010 – Apr 2012	Director, Thai Oil Public Company Limited
Nov 2009 – Aug 2018	Director, PTT Exploration and Production Public Company Limited
Apr 2009 – Mar 2011	Chairman, PTT ICT Solution 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

2018 – Present	Chairman of Vidyasirimedhi Institute of Science and Technology (VISTEC)
Jul 2014 – Present	Director to the Board of Trustee, Thailand Management Association (TMA)
Jul 2014 – Present	Chairman of TMA's Center for Competitiveness

Miss Nantika Thangsuphanich

(Resigned 6 November 2018) Age 53 Years

Education/ Training

- Bachelor of Arts (Political Science), Kasetsart University
- Master of Arts (Urban Studies), Long Island University, USA
- Energy Literacy for the World, Class 7, Thailand Energy Academy
- Public Director Certification Program, Class 10, Public Director Institute, King Prajadhipok's Institute
- e-Government Executive Program (e-GAP), Class 2, Electronic Government Agency (Public Organization)
- Strengthen Ministry Inspector General Skills, Class 2010, Office of the Civil Service Commission and The Prime Minister's Office
- Civil Service Executive Program: Visionary and Moral Leadership, Class 66, Office of the Civil Service Commission

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

Dec 2017 – Nov 2018	Director/ Member of Nomination and Remuneration Committee, IRPC Public Company Limited
Oct 2017 – Oct 2018	Deputy Secretary of Energy
Nov 2016 – Dec 2017	Director, Thai Oil Public Company Limited
June 2015 – Apr 2017	Director, CAT Telecom Public Company Limited
Mar 2015 – Apr 2017	Director, Thailandpost Distribution Company Limited
2009 – 2017	Inspector General, Ministry of Energy
2007 – 2009	Director of General Administration Bureau

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

Miss Jiraphon Kawswat

(Resigned 21 August 2018) Age 56 Years

Education/ Training

- Bachelor of Science (Accounting), Kasetsart University
- Master of Accountancy (Cost Accounting), Chulalongkorn University
- Master of Business Administration (Financial Management), Kasetsart University
- Capital Market Academy Leader Program, Class 26/ 2018, Capital Market Academy
- Executive Program in "Energy Literacy for Sustainable Future" (TEA), Class 12/ 2018, Thailand Energy Academy
- Leadership Development Program III, Class 2/ 2015, PTT Leadership and Learning Institute, PTT Public Company Limited
- Thai ASEAN Economic Community, Class 5/ 2014, College of Politics and Governance, King Prajadhipok's Institute
- TLCA Leadership Development Program, Class 2/ 2014, Thai Listed Companies Association
- Executive Development Program (EDP), Thai Listed Companies Association
- Senior Executive Program, London Business School, United Kingdom
- Directors Certification Program Update (DCPU), Class 2/ 2014, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

Oct 2017 – Jun 2018	Senior Executive Vice President, Oil Business Unit, PTT Public Company Limited
Feb 2018 – Aug 2018	Director/ Member of Nomination and Remuneration Committee, IRPC Public Company Limited
2016 – Sep 2017	Managing Director, PTT Retail Management Company Limited
2012 – 2016	Executive Vice President, Planning, Oil Business Unit, PTT Public Company Limited
2006 – 2012	Vice President, Managerial Accounting, PTT Public Company Limited

Current Position

Board member/ Management in Listed Company

– The Stock Exchange of Thailand

Jul 2018 – Present	Acting in Place of President and Chief Executive Officer, PTT Oil and Retail Business Public Company Limited
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Board member/ Management in Non-Listed Company

– The Stock Exchange of Thailand

Sep 2017 – Present	Chairman, PTT Retail Management Company Limited
Jan 2016 – Present	Director, PTT Oil and Retail Business Company Limited

Mr. Sukrit Surabotsopon

**Director/ Member of the Risk Management Committee/
President/ Secretary of the Board of Directors/
The Director who is authorized to sign on behalf of the Company**

(Resigned 30 January 2019) Age 60 Years

Education/ Training

- Bachelor of Engineering in Chemical Engineering with 2nd Class Honor, Chulalongkorn University
- The Executive Program in Energy Literacy for a Sustainable Future, Class 6/ 2015, Thailand Energy Academy (TEA)
- Diploma, National Defence College, The Joint State – Private Sector Course, Class 26/ 2013, Thailand National Defence College
- Capital Market Academy Leader Program, Class 16/ 2013, Capital Market Academy
- Advanced Certificate Course Politics and Governance in Democratic Systems for Executives, Class 15/ 2012, King Prajadhipok's Institute
- TLCA Executive Development Program (EDP), Class 3/ 2009, Thai Listed Company Association
- The Board's Role in Strategic Formulation, Governance Matters Australia
- Audit Committee Program (ACP), Class 38/ 2012, Thai Institute of Directors Association (IOD)
- Monitoring the System of Internal Control & Risk Management (MIR), Class 12/ 2012, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 132/ 2010, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

No. of share "IRPC": 10,000,000 Share Possession: 0.04894 %

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

Dec 2018 – Jan 2019	Chairman, iPolymer Company Limited
Nov 2018 – Dec 2018	Director, iPolymer Company Limited
Jun 2018 – Dec 2018	Director, IRPC Polyol Company Limited
Jan 2017 – Jan 2019	Chairman, PTT Energy Solutions Company Limited
Mar 2015 – Jan 2019	Chairman, IRPC Technology Company Limited
Feb 2015 – Jun 2017	Chairman, IRPC PCC Company Limited
Oct 2014 – Jan 2019	Member of Risk Management Committee, IRPC Public Company Limited
Aug 2014 – Jan 2019	Chairman, IRPC Oil Company Limited
Aug 2014 – May 2018	Chairman, IRPC Polyol Company Limited
Aug 2014 – Jul 2016	Chairman, Thai ABS Company Limited
Jan 2014 – Jan 2019	Director, The Federation of Thai Industries
Jan 2014 – Feb 2018	Chairman, Petroleum Refining Industry Club, The Federation of Thai Industries
Nov 2013 – Jan 2019	Chairman, IRPC A&L Company Limited
Nov 2013 – Jan 2019	Director, UBE Chemicals (Asia) Public Company Limited
Nov 2013 – Jun 2015	Director, PTT Polymer Marketing Company Limited

Oct 2013 – Jan 2019	Director/ President/ Secretary of the Board of Directors, IRPC Public Company Limited
Oct 2013 – Jan 2019	Senior Executive Vice President, Downstream Petroleum Business Group, PTT Public Company Limited
Jan 2012 – Oct 2013	Director, PTT International Company Limited
Oct 2011 – Sep 2013	Director, PTT Global Chemical Public Company Limited
Jan 2010 – Sep 2013	Senior Executive Vice President, Petrochemicals & Refining Business Unit, PTT Public Company Limited
Mar 2009 – Oct 2013	Director, Star Petroleum Refining 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

NEW PRESIDENT, IRPC Public Company Limited
Starting Date: 1 February 2019

Mr. Noppadol Pinsupa

**Director/ Member of the Risk Management Committee/
President/ Secretary of the Board of Directors/
The Director who is authorized to sign on behalf of the Company**

Age 55 Years
Directorship Starting Date: 1 February 2019



Education/ Training

- Bachelor of Engineering (Electrical), Chulalongkorn University
- Master of Engineering (Electrical), Chulalongkorn University
- Leadership Development Program III, PTT Leadership and Learning Institute
- Breakthrough Program for Senior Executives International Leading Business School (IMD) Lausanne, Switzerland
- Assessor Training Program, Thailand Quality Award (TQA)
- Financial Statement for Directors, PTT Public Company Limited
- Seminar "Briefing on International Anti-Corruption International cases and practices", Thai Institute of Directors Association (IOD)
- Mitsui – HBS Global Management Academy 2015 Japan – USA
- G – 20Y Summit 2015, France
- Program for Senior Executive on Justice Administration Batch, Class 19, Judicial Training Institute
- Leadership Program, Class 22/ 2016, Capital Market Academy The Stock Exchange of Thailand
- Diploma, National Defence College, The National Defence Course, Class 60, Thailand National Defence College
- Director Certification Program (DCP), Class 146/ 2011, Thai Institute of Directors Association (IOD)
- Financial Statements for Directors (FSD), Class 12/ 2011, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work experience within the past 5 years

Oct 2017 – Jan 2019	Chairman, PTT Global LNG Company Limited
Oct 2015 – Jan 2019	Senior Executive Vice President, Gas Business Unit, PTT Public Company Limited
Oct 2015 – Jan 2019	Director/ Member of the Risk Management Committee, Thai Oil Public Company Limited
Oct 2014 – Sep 2015	Executive Vice President, PTT, working on a secondment as president, Global Power Synergy Public Company Limited
2012 – 2014	Executive Vice President, Natural Gas for Vehicle, PTT Public Company Limited
2010 – 2012	Executive Vice President, Natural Gas Distribution, Gas Business Unit, PTT Public Company Limited

Current Position

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

Feb 2019 – Present	Director/ Member of Risk Management Committee/ President/ Secretary of the Board of Directors/ IRPC Public Company Limited
Feb 2019 – Present	Senior Executive Vice President, Downstream Petroleum Business Group, PTT Public Company Limited

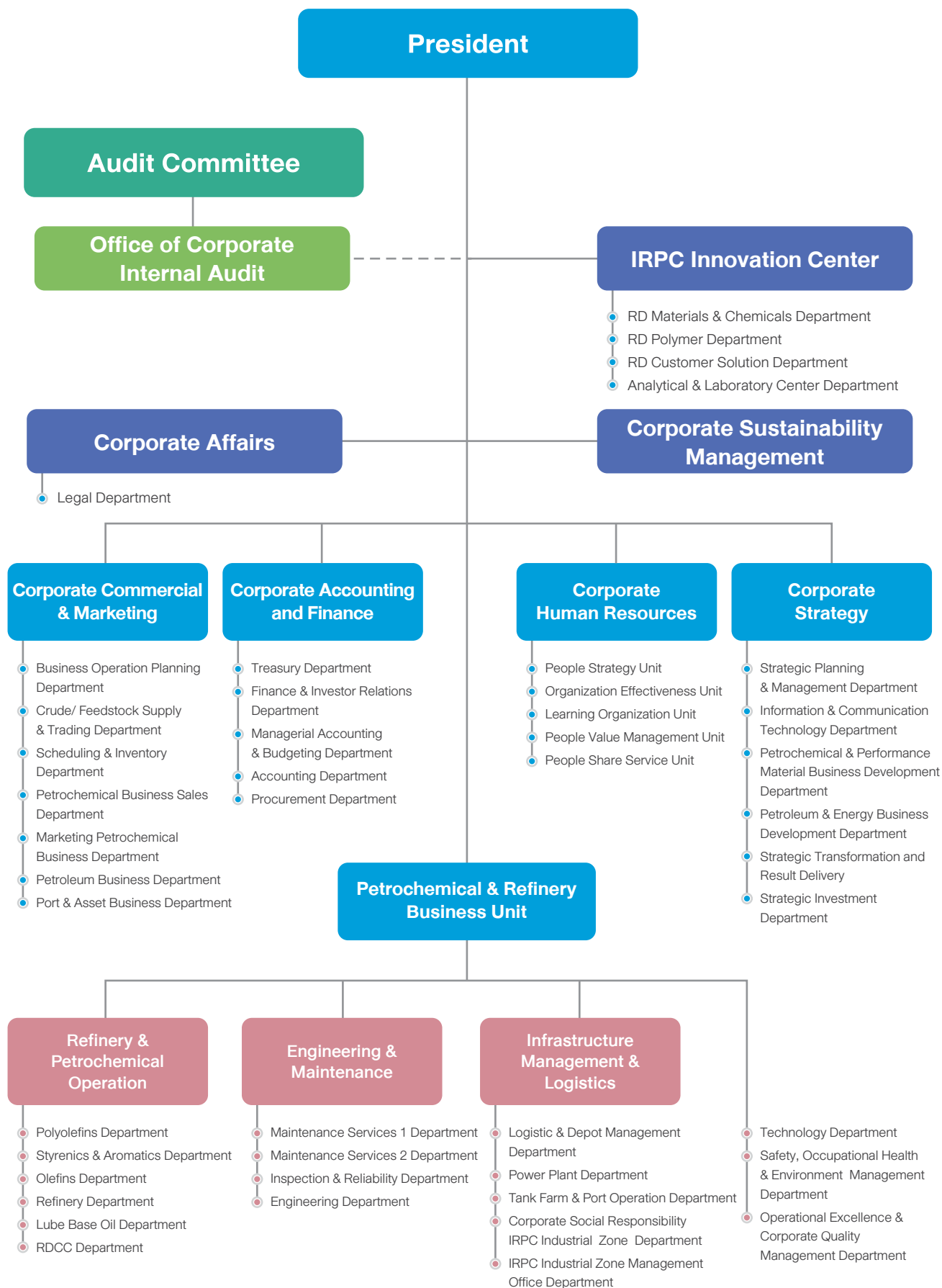
Board member/ Management in Non-Listed Company – The Stock Exchange of Thailand

None



ORGANIZATION STRUCTURE

As of February 1, 2019



EXECUTIVES



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5

6

1
Mr. Noppadol Pinsupa
*President

(Appointed: 1 Feb 2019 - Present)

2
Mr. Pongraphan Titathavewatana
Senior Executive Vice President,
Petrochemical & Refinery Business Unit
(Appointed: 1 Jan 2016 - 31 Dec 2018)

3
Mr. Somkiat Lertritpuwadol
*Senior Executive Vice President,
Corporate Strategy
(Appointed: 1 Jan 2019 - Present)

4
Mrs. Nidcha Jirametthanakij
Senior Executive Vice President,
Corporate Accounting & Finance
(Appointed: 1 Oct 2018 - Present)

5
Miss Wanida Utaisomnapa
*Senior Executive Vice President,
Corporate Commercial and Marketing
(Appointed: 1 Jan 2019 - Present)

6
Mr. Woravuth Sivapetranart
*Senior Executive Vice President,
Petrochemical & Refinery Business Unit
(Appointed: 1 Jan 2019 - Present)

REMARK: *Appointed Date



Mr. Veerawat Srinoradithlert

Executive Vice President,
Engineering & Maintenance

(Appointed: 2012 - Present)



Mr. Pranarch Kosayanont

Acting Executive Vice President,
Refinery and Petrochemical Operation

(Appointed: 1 Jan 2019 - Present)



Mr. Rathapol Unakanporn

Acting Executive Vice President,
Infrastructure Management & Logistics

(Appointed: 1 Jan 2019 - Present)



Mr. Vichit Nittayanonte

Executive Vice President,
IRPC Innovation Center

(Appointed: Jan 2019 - Present)



Mr. Thammasak Punyowatkool

Executive Vice President,
Officiate as Office of Internal Audit Manager

(Appointed: 2016 - Present)



Mrs. Peyada Chongpayuha

Executive Vice President,
Corporate Affairs/ Company Secretary
(Appointed: Oct 2018 - Present)



Mr. Phothiwat Paopongchuan

Executive Vice President, President Office/
Managing Director, Technology IRPC Company Limited
(Appointed: 2014 - Present)



Miss Awrapin Ketatanakul

Executive Vice President,
Sustainability Management Office
(Appointed: 2014 - Present)



Mr. Kraisit Anukoolutaiwong

Executive Vice President,
Corporate Human Resource
(Appointed: 2011 - Present)



Mr. Chalor Panutrakul

Executive Vice President,
Corporate Business Development
(Appointed: 2014 - Dec 2018)



Mr. Pravet Assavadakorn

Executive Vice President,
Innovative Product Center
(Appointed: 2015 - Dec 2018)



Managements Team, IRPC Public Company Limited

Mr. Noppadol Pinsupa

President

Age 55 Years

President Starting Date: 1 February 2019

Education/ Training

- Bachelor of Engineering (Electrical), Chulalongkorn University
- Master of Engineering (Electrical), Chulalongkorn University
- Leadership Development Program III, PTT Leadership and Learning Institute
- Breakthrough Program for Senior Executives International Leading Business School (IMD) Lausanne, Switzerland
- Assessor Training Program, Thailand Quality Award (TQA)
- Financial Statement for Directors, PTT Public Company Limited
- Seminar "Briefing on International Anti-Corruption International cases and practices", Thai Institute of Directors Association (IOD)
- Mitsui – HBS Global Management Academy 2015 Japan – USA
- G – 20Y Summit 2015, France
- Program for Senior Executive on Justice Administration Batch, Class 19, Judicial Training Institute
- Leadership Program, Class 22/ 2016, Capital Market Academy The Stock Exchange of Thailand
- Diploma, National Defence College, The National Defence Course, Class 60, Thailand National Defence College
- Director Certification Program (DCP), Class 146/ 2011, Thai Institute of Directors Association (IOD)
- Financial Statements for Directors (FSD), Class 12/ 2011, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

Oct 2017 – Jan 2019	Chairman, PTT Global LNG Company Limited
Oct 2015 – Jan 2019	Senior Executive Vice President, Gas Business Unit, PTT Public Company Limited
Oct 2015 – Jan 2019	Director/ Member of the Risk Management Committee, Thaioil Public Company Limited
Oct 2014 – Sep 2015	Executive Vice President, PTT, working on a secondment as president, Global Power Synergy Public Company Limited
2012 – 2014	Executive Vice President, Natural Gas for Vehicle, PTT Public Company Limited
2010 – 2012	Executive Vice President, Natural Gas Distribution, Gas Business Unit, PTT Public Company Limited

Current Position

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

Feb.2019 – Present	Director/ Member of Risk Management Committee/ President/ Secretary of the Board of Directors/ IRPC Public Company Limited
Feb.2019 – Present	Senior Executive Vice President, Downstream Petroleum Business Group, PTT Public Company Limited

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

None

Mr. Woravuth Sivapetranart

Senior Executive Vice President, Petrochemical & Refinery Business Unit

Age 55 Years

Senior Executive Vice President, Petrochemical & Refinery Business Unit

Starting Date: 1 January 2019

Education/ Training

- Bachelor of Science (Chemistry), Prince of Songkla University
- Master of Business Administration (Business Administration), Chulalongkorn University
- MINI MBA Thammasat University
- Leadership Development Program III, PTT Leadership and learning Institute
- Senior Executive Program (SEP), Class 32, Sasin Graduate Institute of Business Administration of Chulalongkorn University

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

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
2011 – 2014	Executive Vice President Operation 2, IRPC Public Company Limited
2010 – 2011	Acting Executive Vice President, Operation 2, IRPC Public Company Limited

Current Position

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

Jan 2019 – Present	Senior Executive Vice President, Petrochemical & Refinery Business Unit, IRPC Public Company Limited
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Board member/ Management in Non-Listed Company – The Stock Exchange of Thailand

Mar 2017 – Present	Director, IRPC Polyol Company Limited
Apr 2017 – Present	Director, IRPC A&L Company Limited

Mr. Somkiat Lertritpuwadol

Senior Executive Vice President, Corporate Strategy

Age 56 Years

Senior Executive Vice President, Corporate Strategy

Starting Date: 1 January 2019

Education/ Training

- Bachelor of Science (Chemistry), Ramkhamhaeng University
- Master of Business Administration, Asian University
- Mini MBA, Thammasart University
- The Executive Program in Energy Literacy for a Sustainable Future (TEA) Class 9, Thailand Energy Academy
- Advanced Certificate Course in Public Economics Management for Executives, Class 11, King Prajadhipok's Institute
- 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)

Possession of IRPC shares (%)

No. of share "IRPC": 311,480

(Self: 295,580 Share Possession: 0.00145 %)

(Spouse: 15,900 Share Possession: 0.00008 %)

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

Jan 2016 – Dec 2018	Senior Executive Vice President, Corporate Commercial and Marketing, IRPC Public Company Limited
Feb 2015 – Jun 2017	Director, IRPC PCC Company Limited
Jan 2016 – Dec 2016	Acting Executive Vice President, Corporate Marketing, IRPC Public Company Limited
Feb 2012 – Jul 2016	Director, Thai ABS Company Limited
Oct 2012 – April 2015	Director, TPI Internet Portal Company Limited
2011 – 2015	Executive Vice President, Corporate Marketing, IRPC Public Company Limited
2010 – 2011	Executive Vice President, Corporate Planning Supply Feedstock & Trading/ Acting Executive Vice President, Research and Development, 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 Strategy, IRPC Public Company Limited
Jan 2019 – Present	Secretary of Risk Management Committee, IRPC Public Company Limited

Board member/ Management in Non-Listed Company

– The Stock Exchange of Thailand

Nov 2018 – Present	Director, iPolymer Company Limited
Jul 2018 – Present	Director, WHA Industrial Estate Rayong Company Limited
Jan 2016 – Present	Acting Managing Director, IRPC OIL Company Limited
Jan 2016 – Present	Acting Managing Director IRPC A&L Company Limited
Dec 2014 – Present	Director, IRPC A&L Company Limited
Dec 2014 – Present	Director UBE Chemical (Asia) Public Company Limited
Feb 2012 – Present	Director, IRPC Oil Company Limited

Mrs. Nidcha Jirametthanakij

Senior Executive Vice President, Corporate Accounting & Finance

Age 56 Years

Senior Executive Vice President, Corporate Accounting & Finance

Starting Date: 1 October 2019

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

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

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.
2011 – 2013	Vice President, Investor Relations, PTT Public Company Limited

Current Position

Board member/ Management in Listed Company

– The Stock Exchange of Thailand

Oct 2018 – Present	Senior Executive Vice President, Corporate Accounting & Finance, IRPC Public Company Limited
Mar 2018 – Present	Executive Vice President, Corporate Finance & Accounting, PTT Public company Limited

Board member/ Management in Non-Listed Company

– The Stock Exchange of Thailand

Dec 2018 – Present	Director, IRPC A&L Company Limited
Nov 2018 – Present	Director, iPolymer Company Limited
Nov 2018 – Present	Director, IRPC Oil Company Limited
Nov 2018 – Present	Director, IRPC Polyol Company Limited
Nov 2018 – Present	Director, WHA Industrial Estate Rayong Company Limited
Oct 2018 – Present	Director, UBE Chemicals (Asia) Public Company Limited
Oct 2018 – Present	Director, IRPC Clean Power Company Limited

Miss Wanida Utaisomnapa

Senior Executive Vice President, Corporate Commercial and Marketing

Age: 52 Years

Senior Executive Vice President, Corporate Commercial and Marketing

Starting Date: 1 January 2019

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
- PLI 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

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

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
2014 – 2015	Executive Vice President, Corporate Planning Supply Feedstock and Trading, IRPC Public Company Limited
2013 – 2014	Acting Executive Vice President, Corporate Planning Supply Feedstock and Trading/ Acting Vice President of Crude Feedstock Supply Trading Department/ Acting Price Risk Management Division Manager, IRPC Public Company Limited
2012 – 2013	Vice President of Crude & Feedstock Supply Trading Department/ Acting Price Risk Management Division Manager, IRPC Public Company Limited

2011 – 2012

Vice President, Business Operation
Planning Department,
IRPC Public Company Limited

2010 – 2011

Division Manager,
Crude Oil & Petroleum Feedstock Division,
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

Nov 2018 – Present

Director, IRPC OIL Company Limited

Nov 2018 – Present

Director,
IRPC Clean Power Company Limited

Mr. Veerawat Srinoradithlert

**Executive Vice President,
Engineering & Maintenance**

Age 56 Years

Executive in accordance with the notification of the SEC
2 January 2015 to 31 December 2018

Education/ Training

- Bachelor of Engineering (Chemical Engineering), King Mongkut Thonburi University
- Master of Business Administration, Burapha University
- Mini MBA, Thammasat University
- Executive Development Program

Possession of IRPC shares (%)

No. of share "IRPC": 10,579 Share Possession: 0.00005 %

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

2011 – 2012	Vice President, Complex 1 Department/ Analytical Center & Laboratory Department, IRPC Public Company Limited
2010 – 2011	Vice President, Complex 1 Department, IRPC Public Company Limited

Current Position

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

2012 – Present	Executive Vice President, Engineering & Maintenance, IRPC Public Company Limited
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Board member/ Management in Non-Listed Company – The Stock Exchange of Thailand

None

Mr. Pranarch Kosayanont

**Acting Executive Vice President,
Refinery and Petrochemical Operation**

Age 53 Years

Appointed as an Acting Executive Vice President,
Refinery and Petrochemical Operation since 1 January 2019

Education/ Training

- Bachelor of Science (Chemistry), King Mongkut's University of Technology Thonburi
- Mini MBA, Thammasat University
- PTT-HBS Leadership Development Program 1
- Senior Executive Program (SEP), Class 25, Sasin Graduate Institute of Business Administration of Chulalongkorn University

Possession of IRPC shares (%)

No. of share "IRPC": 245,292 Share Possession: 0.00120 %

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

Oct 2014 – Dec 2018	Vice President, Refinery, IRPC Public Company Limited
2010 – Oct 2014	Vice President, Lube Base Oil, IRPC Public Company Limited

Current Position

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

Jan 2019 – Present	Acting Executive Vice President, Refinery and Petrochemical Operation, IRPC Public Company Limited
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Board member/ Management in Non-Listed Company – The Stock Exchange of Thailand

None

Mr. Rathapol Unakanporn

Acting Executive Vice President, Infrastructure Management & Logistics

Age 56 Years

Appointed as an Acting Executive Vice President,
Infrastructure Management & Logistics since 1 January 2019

Education/ Training

- Bachelor of Science,
King Mongkut's University of Technology Thonburi
- Master of Engineering (Industrial Engineering), Kasetsart University
- Master of Public Administration (M.P.A.),
Graduate School of Public, Administration National Institute
- MINI MBA, Thammasat University
- The Global Petrochemical Industry
- Lummus Technology Seminar,
Lummus Technology a CB&I Company
- Project Management (FOSTER WHEELER)
- The Global Customer Summit GE Crotonville, USA
- Leadership Development Program II, PTT Leadership and
Learning Institute

Possession of IRPC shares (%)

No. of share "IRPC": 1 Share Possession: 0.00000 %

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

Jan 2017 – Dec 2018	Vice President, Corporate Social Responsibility IRPC Industrial Zone IRPC Public Company Limited
Jan 2014 – Dec 2016	Vice President, Styrenics & Aromatics Department IRPC Public Company Limited

Current Position

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

Jan 2019 – Present	Acting Executive Vice President, Infrastructure Management & Logistics IRPC Public Company Limited
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Board member/ Management in Non-Listed Company – The Stock Exchange of Thailand

None

Mr. Vichit Nittayanonte

Executive Vice President, IRPC Innovation Center

Age: 59 years

Executive in accordance with the notification of the SEC
2 January 2015 to 31 December 2018

Education/ Training

- Bachelor of Science (General Science), Chulalongkorn University
- Master of Business Administration Degree, Burapa University
- Mini MBA Thammasat University
- Director Accreditation Program (DAP), Class 91/ 2011,
Thai Institute of Directors Association (IOD)
- Financial Statements for Directors (FSD), Class 12/ 2011,
Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

No. of share "IRPC": 333,394 Share Possession: 0.00163 %

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

Jan 2017 – Dec 2018	Executive Vice President, Operation Support, IRPC Public Company Limited
Feb 2012 – 30 Apr 2018	Director, IRPC Polyol Company Limited
Jan 2016 – Dec 2016	Acting Managing Director, IRPC Polyol Company Limited
2012 - 2016	Executive Vice President, Petrochemical Operation, IRPC Public Company Limited
Dec 2012 – Jul 2016	Acting Managing Director, Thai ABS Company Limited
Feb 2012 – Jul 2016	Director, Thai ABS Company Limited
Feb 2012 – Dec 2015	Director, Thai Polyurethane Industry Company Limited
2010 - 2012	Managing Director, IRPC Polyol Company Limited

Current Position

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

Jan 2019 – Present	Executive Vice President, IRPC Innovation Center, IRPC Public Company Limited
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Board member/ Management in Non-Listed Company – The Stock Exchange of Thailand

Mar 2017 – Present	Director, Rakpasak Company Limited
Dec 2014 – Present	Director, IRPC A&L Company Limited
Feb 2012 – Present	Director, IRPC Oil Company Limited

Mr. Thammasak Punyowatkool

**Executive Vice President,
Officiate as Office of Internal Audit Manager**

Age 52 Years

Executive in accordance with the notification of the SEC
2 January 2015 to 31 December 2018

Education/ Training

- Bachelor of Science (Accounting), Kasetsart University
- Mini MBA : Executive Leadership Development Program Faculty of Commerce and Accountancy, Thammasat University
- The Manager Program, Management and Psychology Institute, Class 47
- The Board's Role in Strategic Formulation, Governance Matters Australia

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

2014 – 2017	Director, IRPC Technology Company Limited
2014 – 2015	Executive Vice President, Corporate Accounting, IRPC Public Company Limited
2013 – 2014	Acting Executive Vice President, Corporate Accounting, IRPC Public Company Limited
2010 – 2013	Vice President, Managerial Accounting Department, IRPC Public Company Limited

Current Position

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

2016 – Present	Executive Vice President, Officiate as Office of Internal Audit Manager and Secretary of Audit Committee IRPC Public Company Limited
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Board member/ Management in Non-Listed Company – The Stock Exchange of Thailand

2014 – Present	Director, Rayong Acetylene Company Limited
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Mrs. Peyada Chongpayuha

**Executive Vice President,
Corporate Affairs/ Company Secretary**

Age: 57 Years

Executive in accordance with the notification of the SEC
2 January 2015 to 31 December 2018

Education/ Training

- Bachelor of Economics (B.Econ.), Chulalongkorn University
- Master of Arts (M.A.), Public Policy & Admin., University of Wisconsin-Madison, USA
- Break through Program for Senior Executive International and Leading Business School (IMD) Lausanne, Switzerland
- Company Secretary Program (CSP), Class 94/ 2018, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

2016 – Sep 2018	Vice President, PTT Leadership and Learning Institute, PTT Public Company Limited
2016 – 2016	Vice President, Corporate Human Resource Management Department, PTT Public Company Limited
2012 – 2015	Vice President, Strategic Management and Budgeting Department, PTT Public Company Limited
2009 – 2012	Vice President, Appointed as Deputy Managing Director, Corporate Planning and Finance Department, PTT Retail Management Company Limited

Current Position

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

Oct 2018 – Present	Executive Vice President, Corporate Affairs/ Company Secretary, IRPC Public Company Limited
Oct 2018 – Present	Vice President, Downstream Petroleum Business Group, PTT Public Company Limited

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

Oct 2018 – Present	Director, Technology IRPC Company Limited
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Mr. Phothiwat Paopongchuang

**Executive Vice President, President Office/
Managing Director, Technology IRPC Company Limited**

Age: 57 Years

Executive in accordance with the notification of the SEC
2 January 2015 to 31 December 2018

Education/ Training

- Bachelor of Engineering (Mechanical Engineering), Khon Kaen University
- Master of Industrial (Management Engineering) King Mongkut's University of Technology North Bangkok
- Master of Public Administration, National Institute of Development Administration (NIDA)
- Doctor of Business Administration (Industrial Business and Human Resource), King Mongkut's University of Technology North Bangkok
- Mini MBA, Thammasat University
- Professional Engineer from Council of Engineers
- The Board's Role in Strategic Formulation, Governance Matters Australia
- Director Certification Program (DCP), Class 243/ 2017, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

No. of share "IRPC": 64,320 Share Possession: 0.00031 %

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

2011 – 2014	Acting Executive Vice President, IRPC's Office of Industrial Zone Management, IRPC Public Company Limited
2010 – 2011	Vice President of CSR Division, IRPC Public Company Limited

Current Position

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

2014 – Present	Executive Vice President, President Office, IRPC Public Company Limited
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Board member/ Management in Non-Listed Company – The Stock Exchange of Thailand

2014 – Present	Managing Director, Technology IRPC Company Limited
2013 – Present	Director, Sport Services Alliance Company Limited

Miss Awrapin Kettratanakul

**Executive Vice President,
Sustainability Management Office**

Age: 59 Years

Executive in accordance with the notification of the SEC
2 January 2015 to 31 December 2018

Education/ Training

- Bachelor of Science (Medical Technology), Mahidol University
- Master of Science (Environmental Engineering), Asian Institute of Technology
- Doctor of Engineering (Urban Engineering), The University of Tokyo (TODA), Tokyo, Japan.
- Mini MBA, Thammasat University
- Leadership Great Leaders, Great Teams, Great Results, PacRim
- Management Accounting for Non-Financial Executives, Federation of Accounting Professions
- Air Emission Abatement Technology for Petroleum & Petrochemical industry, The Overseas Human Resources and Industry Development Association (HIDA)
- Change Acceleration Process, GE
- PTT Group Leadership Development Program, PTT Public Company Limited
- Executive Development Program 2010, Fiscal Policy Research Institute Foundation Kingdom of Thailand
- The Board's Role in Strategic Formulation, Governance Matters Australia
- McKinsey Leadership Academy Program
- Digital Leadership Acceleration Program 2018, The Boston Consulting Group
- Embracing Higher Productivity Mindset, Lead Business Institute
- Power Grid, Compass Institute

Possession of IRPC shares (%)

No. of share "IRPC": 92,600 Share Possession: 0.00045 %

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

2012 – 2014	Executive Vice President, Corporate Quality, Safety, Occupational Health & Environment Department, IRPC Public Company Limited
2008 – 2012	Vice President, Department of Corporate Quality Safety Health and Environment, IRPC Public Company Limited

Current Position

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

2014 – Present	Executive Vice President, Sustainability Management Office, IRPC Public Company Limited
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Board member/ Management in Non-Listed Company – The Stock Exchange of Thailand

2018 – Present	Advisory Committee of President Environment Engineering Association of Thailand
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Mr. Kraisit Anukoolutaiwong

Executive Vice President, Corporate Human Resource

Age 57 Years

Executive in accordance with the notification of the SEC
2 January 2015 to 31 December 2018

Education/ Training

- Bachelor of Arts (Political Science), Thammasat University
- Master of Public Administration,
National Institute of Development Administration (NIDA)
- Mini MBA, Thammasat University

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

Oct 2012 – Apr 2015 Director,
TPI Internet Portal Company Limited

Current Position

Board member/ Management in Listed Company

— The Stock Exchange of Thailand

Feb 2018 – Present	Acting People Strategy/ Acting Organization Effectiveness, IRPC Public Company Limited
2011 – Present	Executive Vice President, Corporate Human Resource, IRPC Public Company Limited

Board member/ Management in Non-Listed Company

— The Stock Exchange of Thailand

2015 – Present	Director, Technology IRPC Company Limited
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Mr. Pongpraphan Titathavewatana

(Retire 31 December 2018) Age 60 Years

Education/ Training

- Bachelor of Science (Chemistry), Khon Kaen University
- Mini MBA, Thammasart University
- Certificate of Executive Education Program for Senior Management, Fiscal Policy Research Institute Foundation, year 2009

Possession of IRPC shares (%)

No. of share "IRPC": 564,478 Share Possession: 0.00276 %

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

Jul 2018 – Dec 2018	Director, WHA Industrial Estate Rayong Company Limited
Jan 2016 – Dec 2018	Senior Executive Vice President, Petrochemical & Refinery Business Unit, IRPC Public Company Limited
Mar 2016 – Dec 2018	Director, IRPC A&L Company Limited
Jan 2016 – Dec 2018	Director, IRPC Clean Power Company Limited
Jan 2016 – Dec 2016	Acting Executive Vice President, Refinery Operation, IRPC Public Company Limited
2014 – 2015	Executive Vice President, Refinery Operation, IRPC Public Company Limited
2013 – 2014	Executive Vice President Asset Management, Executive Vice President Port Business (Acting), IRPC Public Company Limited
Jun 2013 – Dec 2013	Director, IRPC Clean Power Company Limited
2011 – 2013	Executive Vice President Operation 4, IRPC Public Company Limited
2010 – 2011	Executive Vice President Operation 3, 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

Mr. Chalor Panutrakul

(Retire 31 December 2018) Age 60 Years

Education/ Training

- Bachelor of Engineering (chemical engineering), Chulalongkorn University
- Master of Business Administration (Management), Sasin Graduate Institute of Business Administration of Chulalongkorn University
- Power of the Kingdom, Class 3/ 2014, Chula Unisearch, Chulalongkorn University
- Thai ASEAN Economic Community, Class 4/ 2013, College of Politics and Governance, King Prajadhipok's Institute
- Advanced Security management Program (ASMP), Class 4, The Association National Defense College of Thailand under the Royal Patronage of His Majesty the King
- The Board's Role in Strategic Formulation, Governance Matters Australia
- Director Certification Program (DCP), Class 61/ 2005, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

2014 – Dec 2018	Executive Vice President, Corporate Business Development, IRPC Public Company Limited
2012 – 2014	Executive Vice President, Corporate Research and Development, IRPC Public Company Limited
2010 – 2012	Executive Vice President, Line Business Port, 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

Mr. Pravet Assavadakorn

(Retire 31 December 2018) Age 60 Years

Education/ Training

- Bachelor of Chemical (Engineering), University of Tokyo
- Master of Chemical (Energy Engineering), University of Tokyo
- Mini MBA, Thammasat University
- Project Investment & Feasibility Studies Program, The Asia Business Forum
- Leadership Development Program, DDI
- Executive Development Program, Fiscal Policy Research Institute Foundation
- The 7 Habits of highly effective people, PacRim
- Problem Solving Leadership Capability, Mckinsey
- The Board's Role in Strategic Formulation, Governance Matters Australia
- Director Accreditation Program (DAP), Class 98/ 2012, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 238/ 2017, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

No. of share "IRPC": 348,600

(Self: 253,600 Share Possession: 0.00124 %)

(Spouse: 95,000 Share Possession: 0.00046 %)

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

Apr 2015 – Dec 2018	Executive Vice President, Innovative Product Center, IRPC Public Company Limited
Mar 2015 – Apr 2018	Director, IRPC Polyol Company Limited
2014 – Apr 2015	Executive Vice President, Corporate Research & Development
2009 – 2014	Executive Vice President, Corporate Business Development, 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

Mr. Sirimet Leepagorn

(Resigned 30 September 2018) Age 51 Years

Education/ Training

- Bachelor of Science (Chemistry), Chiang Mai University
- Master of Business Administration, Burapha University
- PTT Leadership Development Program (LDP II), Havard Business School
- GE Leadership Development Program
- Director Certification Program (DCP), Class 205/ 2015, Thai Institute of Directors (IOD)

Possession of IRPC shares (%)

No. of share "IRPC": 443,154

(Self: 413,292 Share Possession: 0.00202 %)

(Spouse: 29,862 Share Possession: 0.00015 %)

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

Dec 2017 – Sep 2018	Executive Vice President, Strategic Transformation and Result Delivery Office
Jan 2016 – Dec 2017	EVEREST Project Director, IRPC Public Company Limited
Feb 2015 – Feb 2016	Secretary of the Risk Management Committee, IRPC Public Company Limited
Sep 2014 – Sep 2018	Director, IRPC Clean Power Company Limited
Jul 2013 – Jun 2018	Acting President, IRPC Clean Power Company Limited
Oct 2014 – Dec 2015	Executive Vice President, Corporate Business Planning, IRPC Public Company Limited
Jul 2013 – Sep 2014	Acting Executive Vice President, Corporate Business Planning, IRPC Public Company Limited
Jan 2010 – Jun 2013	Vice President Refinery and Related Business Development, IRPC Public Company Limited
Feb 2012 – Sep 2018	Director, IRPC Oil 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. Sukrit Surabotsopon

(Retire 31 January 2019) Age 60 Years

Education/ Training

- Bachelor of Engineering in Chemical Engineering with 2nd Class Honor, Chulalongkorn University
- The Executive Program in Energy Literacy for a Sustainable Future, Class 6/ 2015, Thailand Energy Academy (TEA)
- Diploma, National Defence College, The Joint State – Private Sector Course, Class 26/ 2013, Thailand National Defence College
- Capital Market Academy Leader Program, Class 16/ 2013, Capital Market Academy
- Advanced Certificate Course Politics and Governance in Democratic Systems for Executives, Class 15/ 2012, King Prajadhipok's Institute
- TLCA Executive Development Program (EDP), Class 3/ 2009, Thai Listed Company Association
- The Board's Role in Strategic Formulation, Governance Matters Australia
- Audit Committee Program (ACP), Class 38/ 2012, Thai Institute of Directors Association (IOD)
- Monitoring the System of Internal Control & Risk Management (MIR), Class 12/ 2012, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 132/ 2010, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

No. of share "IRPC": 10,000,000 Share Possession: 0.04894 %

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

Dec 2018 – Jan 2019	Chairman, iPolymer Company Limited
Nov 2018 – Dec 2018	Director, iPolymer Company Limited
Jun 2018 – Dec 2018	Director, IRPC Polyol Company Limited
Jan 2017 – Jan 2019	Chairman, PTT Energy Solutions Company Limited
Mar 2015 – Jan 2019	Chairman, IRPC Technology Company Limited
Feb 2015 – Jun 2017	Chairman, IRPC PCC Company Limited
Oct 2014 - Jan 2019	Member of Risk Management Committee, IRPC Public Company Limited
Aug 2014 - Jan 2019	Chairman, IRPC Oil Company Limited
Aug 2014 – May 2018	Chairman, IRPC Polyol Company Limited
Aug 2014 – Jul 2016	Chairman, Thai ABS Company Limited

Jan 2014 – Jan 2019
Jan 2014 – Feb 2018

Nov 2013 – Jan 2019
Nov 2013 – Jan 2019

Nov 2013 – Jun 2015

Oct 2013 – Jan 2019

Oct 2013 - Jan 2019

Jan 2012 – Oct 2013

Oct 2011 – Sep 2013

Jan 2010 – Sep 2013

Mar 2009 – Oct 2013

Director, The Federation of Thai Industries
Chairman,
Petroleum Refining Industry Club,
The Federation of Thai Industries
Chairman, IRPC A&L Company Limited
Director, UBE Chemicals (Asia)
Public Company Limited
Director,
PTT Polymer Marketing Company Limited
Director/ President/
Secretary of the Board of Directors,
IRPC Public Company Limited
Senior Executive Vice President,
Downstream Petroleum Business Group,
PTT Public Company Limited
Director,
PTT International Company Limited
Director,
PTT Global Chemical
Public Company Limited
Senior Executive Vice President,
Petrochemicals & Refining Business Unit,
PTT Public Company Limited
Director,
Star Petroleum Refining
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

Mrs. Rachadaporn Rajchataewindra

(Retire 30 September 2018) Age 60 Years

Education/ Training

- Bachelor of Art (Accounting), Chiangmai University
- Bachelor of Law, Sukhothai Thammathirat University
- Master of Business Administration, International Business (English Program), University of the Thai Chamber of Commerce
- PTT Group Leadership Development Program III, PLLI
- NIDA-Wharton Executive Leadership Program, The Wharton School University of Pennsylvania
- Executive Program in Energy Science, class 11/ 2018, Thailand Energy Academy (TEA)
- Advanced master of Management Program (AMM), Class 2/ 2018, Graduate School of Public Administration national Institute of Development Administration (NIDA)
- Capital Market Academy Leader Program, Class 25/ 2017, Capital Market Academy, The Stock Exchange of Thailand
- TLCA Executive Development Program (EDP), Class 4/ 2009, Thai Listed Companies Association
- The Board's Role in Strategic Formulation, Governance Matters Australia
- Director Certification Program (DCP), Class 204/ 2015, Thai Institute of Directors Association (IOD)
- Director Accreditation Program (DAP), Class 111/ 2014, Thai Institute of Directors Association (IOD)
- Successful Formulation and Execution of Strategy (SFE), Class 21/ 2014, Thai Institute of Directors Association (IOD)
- Corporate Governance for Executives (CGE), Class 1/ 2014, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

No. of share "IRPC": 82,000

(Self: 22,000 Share Possession: 0.00011 %)

(Spouse: 60,000 Share Possession: 0.00029 %)

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

Jul 2018 – Sep 2018	Director, WHA Industrial Estate Rayong Company Limited
Dec 2015 – Sep 2018	Director, IRPC OIL Company Limited
Dec 2015 – Sep 2018	Director, IRPC Polyol Company Limited
Dec 2015 – Sep 2018	Director, UBE Chemicals (Asia) Public Company Limited
Nov 2015 – Sep 2018	Director, IRPC Clean Power Company Limited
Nov 2015 – Sep 2018	Director, IRPC A&L Company Limited
Nov 2015 – Sep 2018	Senior Executive Vice President, Corporate Accounting & Finance, IRPC Public Company Limited
Nov 2015 – Sep 2018	Executive Vice President, Corporate Finance & Accounting, PTT Public Company Limited
Apr 2016 – Jun 2017	Director, IRPC PCC Company Limited
Dec 2015 – Jul 2016	Director, Thai ABS Company Limited
2010 – Oct 2015	Vice President, Corporate, PTT Asahi Chemical 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

Miss Monwipa Choopiban

(Retire 30 September 2018) Age 60 Years

Education/ Training

- Bachelor of Education (English), Chulalongkorn University
- Master of Arts (English), Chulalongkorn University
- Master of Political Science (Political Communication), Political Communication College, Krirk University
- Fundamental Practice for Corporate Secretary, Thai Listed Companies Association (TLCA)
- Fundamentals of Law for Corporate Secretaries, Thai Listed Companies Association (TLCA)
- AICHR TRAINING PROGRAMME ON BUSINESS AND HUMAN RIGHTS 2017
- Politics and Governance in Democratic Systems for Executives Course, Class 21/ 2017, King Prajadhipok's Institute
- London Global Convention on Corporate Governance and Sustainability 2016, 2017
- International Conference on Corporate Social Responsibility 2016, 2017, 2018
- National Dialogue on Business and Human Rights (Global Compact Network Thailand)
- Sustainable Brand 2016, 2017
- Social Enterprise and Human Rights
- Social Enterprise World Forum 2018
- The Board's Role in Strategic Formulation, Governance Matters Australia
- Anti-Corruption in Practice (ACPC), Thai Institute of Directors Association (IOD)
- Corporate Governance for Executives (CGE), Thai Institute of Directors Association (IOD)
- Board that Makes a Difference (BMD), Thai Institute of Directors Association (IOD)
- Anti-Corruption: The Practical Guide (ACPG), Class 24/ 2015, Thai Institute of Directors Association (IOD)
- Director Certification Program Update (DPCU), Class 3/ 2015, Thai Institute of Directors Association (IOD)
- Director Certification Program (DCP), Class 164/ 2012, Thai Institute of Directors Association (IOD)
- Company Secretary Program (CSP), Class 40/ 2011, Thai Institute of Directors Association (IOD)

Possession of IRPC shares (%)

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

Family relationship within the Company, major shareholder or subsidiaries

None

Work Experience within the past 5 years

Sep 2017 – Sep 2018	Director, Sarn Palung Social Enterprise Company Limited
2015 – Sep 2018	Executive Vice President, Corporate Affairs, IRPC Public Company Limited
Aug 2015 – Sep 2018	Director, IRPC Technology Company Limited
2014 – 2015	Acting Executive Vice President, Corporate Affairs, IRPC Public Company Limited
2013 – Sep 2018	Secretary of Nomination and Remuneration Committee, IRPC Public Company Limited
2012 – Sep 2018	Company Secretary/ Secretary of Corporate Governance Committee, IRPC Public Company Limited
Oct 2012 – Apr 2015	Director, TPI Internet Portal Company Limited
Feb 2012 – Mar 2015	Director, IRPC Oil Company Limited
2011- Sep 2018	Secretary of the Management Committee, IRPC Public Company Limited
2011 – Sep 2018	Vice President, Downstream Petroleum Business Group, PTT Public Company Limited
2011 – 2014	Vice President/ President's Office and Company Secretary Acting Executive Vice President, Corporate Affairs IRPC Public Company Limited
2010 – 2011	Vice President, Corporate Compliance and Communication and Company Secretary, PTT Aromatics and Refining 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

Internal Control



The Board's views on internal control system

IRPC values internal control adequacy, suitability, shortcomings, and their remedies through the Board's inquiry with the management and the internal control unit under Corporate Strategy at Meeting No. 2/ 2562 of February 12, 2019, attended by independent directors and the Audit Committee. The management-prepared assessment form was also reviewed at the meeting.

The Board considered IRPC's internal control system adequate and suitable under the COSO Internal Control – Integrated Framework (2013), with enough personnel in place for efficient system implementation. An internal control system was in place to monitor and control subsidiaries' businesses to prevent the properties of IRPC and subsidiaries from abuse or unauthorized use by directors or executives, and to duly prevent transactions with potential conflicts and related parties. The Board also viewed other internal control mechanisms as adequate.

This year IRPC further improved the system for constant modernity, suiting changing internal and external contexts alike by taking the following steps:

1. Control Environment

The Board and the management advocated a corporate culture with emphasis on having smart and conscientious personnel to enable business to sustainably align with IRPC's vision and mission in an efficient and effective way. It also advocated a code of conduct and oversaw IRPC's business with a sound and suitable internal-control environment.

The Board and the management defined a corporate governance policy; a compliance policy; an internal control policy; an anti-corruption & anti-bribery policy; and a written code of conduct for directors, executives, and employees to observe. IRPC required all employees to fill out electronic conflicts of interest form every year.

The Board and the management were independent of each other. The Board oversaw business as a whole and commented on IRPC's strategic directions to guide preparation of business plans and work plans; it also regularly monitored performances of the corporation and the Board to ensure goal achievement.

IRPC structured itself as business groups and business functions to enable efficient corporate management and uniform business conduct coupled with segregation of duties for critical functions for checks and balances. It commanded personnel development plans by setting qualifications for individual positions, key succession plans, and systematic, standardized performance assessment processes together with regular performance monitoring to reward and inspire work efficiency. It drove the Three Lines of Defense, an internationally accepted approach, by promoting and urging the operators and superiors of individual units (First Line), Internal Control, Compliance, and other supporting units (Second Line), and the Office of Corporate Internal Audit (Third Line) to adopt such approach for continual operation, ranging from risk assessment, definition of control, monitoring, to assessment activities. The First Line plays the key roles in ensuring success and efficiency.

2. Risk Assessment

Valuing risk management to ensure short-term and long-term goal achievement, the Board and the management formed a Board-appointed Risk Management Committee (RMC) and a President-led Risk Management and Internal Control Committee (RMCC). These committees oversaw risk management practices properly and effectively, as well as implemented concrete risk management across IRPC. Below was the management approach.

IRPC defined a company-wide risk management system under ISO 31000 – Risk Management and COSO Enterprise Risk Management and defined a risk management policy to guide risks potentially compromising IRPC's achievement of objectives, consisting of corporate, functional, and project risks, taking into account external and internal changes, including the probability of fraud. Also defined was a risk management approach, a risk revision process, and regular risk management plan monitoring. Reported every quarter were summaries of corporate and operating unit risk management performance, given to the RMCC and RMC.

A Business Continuity Management system (ISO 22301) has helped IRPC manage under emergencies and crises to allow business to proceed smoothly, ease impacts, and preserve corporate reputation.

3. Control Activities

IRPC defined efficient and effective control activities while taking into account sound internal control principles to lower risks of compromised achievement of its objectives. In place were written rules, policies, requirements, and written job manuals together with clearly defined authority scopes, job duties at each level, and work procedures for guidelines. Performance verification was in place to conform to these rules, policies, requirements, and manuals. In place are policies and guidelines for engagement in transactions of potential conflicts of interest along with transactions that are transparent, auditable, and fair; and transaction approval with due regard for IRPC's best interests.

IRPC commanded CCMS (Continuous Control Monitoring System) for procurement/ hiring and payment processes to constantly and efficiently aid the monitoring and detection of irregularities in line with sound segregation of duties. Completed in 2018 was a sales and payment process. IRPC also defined IT security control processes in line with ISO 27001 (Information Security Management) to ensure efficient and effective corporate information security systems.

4. Information and Communication

IRPC valued the quality of information and communication, which critically support effective internal control under the following ICT management guidelines. IRPC duly communicated with the Board, management, employees and stakeholders, material corporate performance. Meeting documents were sent to the Board ahead of meetings for adequate study.

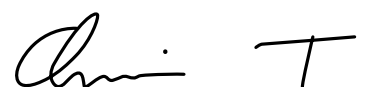
IRPC instituted several internal communication channels, namely Town Hall meetings between senior management and employees, intranet communication, e-mail communication, and LINE Group. Several external communication channels were in place, including SMS, LINE Group, e-mail, Facebook, and company website. In place was a directly responsible unit for regular disclosure of key information to stakeholders. IRPC put in place complaint-filing channels and defined an explicit whistleblower system to ensure employees and external parties that such complaints will be transparently, honestly, justly, and confidentially handled within due time.

IRPC has introduced digital and technology systems to streamline work, improve work processes and analytical tasks that benefit its business together with those of employees and customers under the IRPC 4.0 Project. The project scope incorporates production (AI-assisted control and process planning), marketing (accessing customers' needs and quick responses), hiring and purchasing (reduced redundancy in work process and improved efficiency in purchase planning), supply chain management (analysis of customers' buying behavior and business partners' readiness for feedstock delivery in IRPC's supply chain management), and a system for managing data and IT infrastructure.

5. Monitoring Activities

IRPC commanded a process for monitoring and assessing the adequacy of internal control and defined a remedial approach to ensure an efficient and effective internal control system in the following ways. IRPC required all executives (First Line) to provide oversight and monitoring of work systems within their respective units for efficiency and compliance with policies, requirements, and strict rules; the internal control unit of Corporate Strategy reviewed adequacy and suitability while providing advice on remedial approach formulation for identified shortcomings. It also put in place a process for reporting shortcomings for prompt acknowledgment of the management in addition to a monitoring process to ensure effective, timely remedy.

The Office of Corporate Internal Audit (Third Line), an independent unit reporting to the Audit Committee, reviewed and assessed internal control effectiveness for various activities under audit plans approved by the Audit Committee. These plans aligned with IRPC's strategic directions and critical risks facing IRPC's businesses. The office also provided recommendations for greater internal control efficiency and effectiveness by informing the management of remedial actions, reporting to the Audit Committee audit findings and the progress of monitoring remedial actions to completion.



(Mr. Chansin Treenuchagron)

Chairman



Report of the Audit Committee

Dear Shareholders,

IRPC's current Audit Committee consists of three independent directors who are qualified and highly experienced in the energy business, finance and accounting, and law. Chaired by Mr. Somnuk Bomrungsalee, it features Mr. Jessada Promjart and Ms. Ruenvadee Suwanmongkol as members.

Undertaking Board-assigned tasks, this committee complied with its own charter, which in turn agreed with SET's and SEC's announcements. Its policy focuses on compliance with corporate governance, laws, and applicable regulations, and on ensuring IRPC's suitable, efficient, and effective internal control and internal audit systems.

Meeting 13 times this year, the committee met with the management, internal auditors, and the external auditor on relevant items. Its performance this year is highlighted below.

1. Review of financial reports

The committee reviewed material data of quarterly and the 2018 annual financial statements together with the connected transactions and those of potential conflicts of interest by inviting the external auditor and executives of the finance and accounting function on the agenda item of financial statements consideration, where they were to clarify and address the committee's queries about their accuracy and comprehensiveness, adjustment of significant journal entries affecting the statements, adequacy of data disclosed in the statements, and the auditor's observation. The committee concluded that these financial statements showed materially accurate entries under financial reporting standards.

The committee also held an exclusive meeting with the external auditor in the absence of the management to consult the auditor about the audit plan, the internal control system, the auditor's freedom of execution, and the auditor's observations. Priority was given to the auditor's presentation of key audit matters (KAMs),

2. Review of risk management

The Board and the management valued risk management. In place was assessment of internal and external risk factors together with their respective probability and impacts. Risk management plans were prepared to prevent or mitigate potential impacts on businesses to manageable levels. Key risk indicators (KRIs) tracked changes in various risk factors. Additional measures were defined to efficiently and promptly address changes. The Board appointed a Risk Management Committee to steer risk management practices, with risk management updates regularly reported to the Board. The Audit Committee reviewed risk management effectiveness through published reports. Findings examined by the Office of Corporate Internal Audit and the external auditor ensured that IRPC commanded risk management practices that supported manageable risks.

3. Review of internal control

The committee reviewed the internal control system for the year to reasonably ensure that its business had proceeded efficiently and effectively, enabling it to achieve all objectives and goals. The review was based on the internal and external auditors' reports, the follow-up report, and the outcomes of the assessment form of internal control against the practical guideline scope of COSO (The Committee of Sponsoring Organizations of the Treadway Commission), designed to assess the internal control system, risk management, and the credibility of financial reports. The committee's view is that IRPC commanded a sound internal control system that was adequate for business, leading to efficient and effective performance.

4. Review and oversight of internal control

This committee ensured that IRPC commanded an internal audit unit (Office of Corporate Internal Audit) that was independent and reported directly to itself. This unit ensured effective internal audit execution in line with the approved audit plans and perused audit-related issues, while constantly providing helpful recommendations for greater efficiency of the internal audit system. The committee also regularly monitored audit outcomes and supported an information system project (Continuous Control Monitoring and Auditing System, CCMS) to screen and detect irregularities so that executives and units responsible for prevention might correct irregularities promptly. It also helped the Office of Corporate Internal Audit constantly audit work. The Procure to Pay process was inaugurated in 2017, whereas the Order to Cash process was completed in 2018.

5. Review of corporate governance

The committee focused on ensuring ethical business performance. To this end, it reviewed connected transactions between IRPC and related parties to prevent conflicts of interest, conform to commercial protocols, and optimize IRPC's interests; reviewed IRPC's complaint and whistleblowing processes for compatibility with corporate governance; and ensured complete information disclosure under SET's requirements. Finally, the committee advocated to IRPC and its affiliates CAC (Collective Action Coalition against Corruption) membership of the Anti-Corruption Organization of Thailand.

6. Review of legal compliance

By reviewing compliance with securities and exchange laws, SET's requirements, industrial and environmental legislation, and other laws applicable to its businesses, this committee found that IRPC's internal control process was in effective compliance.

7. Amendment of the Audit Committee Charter and reporting on independence of internal audit's work

The committee endorsed amendment of the charter's contents in line with the international standard on professional internal audit. The internal auditors are to adopt this guideline. The committee also endorsed the report on performance independence of Internal Audit, viewing that they had worked with fairness, care and prudence, and without prejudice; the internal auditors had expressed their free views in their report.

8. Recommendation of the external auditor for 2018

The committee reviewed, selected, nominated, and proposed fees for IRPC's independent external auditor by reviewing its qualifications, caliber, and professional skills. This year it nominated Deloitte Touche Tohmatsu Jaiyos Ltd. for the Board's endorsement and the shareholders' approval. In addition, the committee examined the external auditor's other services to ensure that their audit independence is intact.

On the whole, this year the Audit Committee performed its duties with independence, care, and prudence. It provided helpful views and recommendations to ensure that IRPC's financial reports displayed factual, credible data; that IRPC commanded good corporate governance and lawful business conduct; and that its risk management and internal control systems proved efficient and effective enough to yield IRPC's optimal interests and sustainable growth.



(Mr. Somnuk Bomroongsalee)

Chairman, Audit Committee



Message from the Chairman, Corporate Governance Committee

Dear Shareholders,

The Corporate Governance Committee is determined to see IRPC consistently undertake its business with corporate governance, recognizing the criticality of value addition with business ethics, transparency, respect for human rights, and corporate responsibility for sustainable growth in parallel with society. These success factors have arisen from the synergy of directors, executives, and the workforce, all of whom are committed to corporate governance, and from the support of shareholders and stakeholders with similar views to IRPC. As a result, we are witnessing corporate prosperity, a decent image, and confidence expressed by domestic and overseas investors alike, society, and the public.

The committee completed its tasks to the best of its ability under the Board-assigned scope of responsibility, succeeding on all counts. This year the committee proposed that the Board approve the annual action plan on corporate governance oversight, which consisted of compliance with laws and regulations, anti-fraud, environmental governance, compliance oversight, communication with stakeholders, sustainability tasks, and CSR. It also monitored IRPC's tasks and assessed them for reporting to the Board every quarter. Finally, the committee instituted third-party directors' assessment, conducted every three years, beginning in 2015; the 2018 assessment was the second. Internal assessment takes place yearly.

In August this year the committee in conjunction with the Board revised and defined the corporate governance policy and plans, as well as the CG & CSR Excellence strategies over the next five years. Throughout the year, for the sake of continuous development for excellence, it steered IRPC's study and comparison with international rules, a global corporate citizenship guideline development plan, or Thailand's emerging best practices so that IRPC may modify and apply them to promote the ethics of directors, executives, and the workforce for concrete results and greater efficiency. A case in point is the modified application of SET's CG Code for listed companies to IRPC's business context. For a second straight year, this committee chairman has shared expertise and advice with executives and other employees at the IRPC CG Day to inspire them and urge their awareness of making CG a habit, in addition to fostering cordial relations among all at IRPC.

All these actions to elevate corporate governance practices have earned acclaim and awards on corporate governance and related aspects this year, including the Best SET Sustainability Award 2018, ASEAN CG Awards: TOP 50, the Golden Peacock Award for CSR 2017, and Top Community Care Companies in Asia 2018. Besides its practical leadership, IRPC relentlessly formed a network for corporate governance and socio-environmental responsibility with business allies, business partners, and other stakeholders in the hope of strengthening corporate governance in society.

IRPC is convinced that corporate sustainable growth in tandem with development of a quality society for Thailand and the global community will materialize through the following achievements. First, establishment of practical systems that proves efficient, standardized, and credible. Second, commitment to cultivating ethics and transparency under corporate governance. And third, wholehearted cooperation among directors, executives, and the rank and file that hold iSPIRIT values at heart and devote

(Mr. Anusorn Sangnimnuan)

Chairman, Corporate Governance Committee

Message from the Chairman, Nomination and Remuneration Committee



Dear Shareholders,

This year the Nomination and Remuneration Committee executed its tasks under a plan that continued from 2017 regarding the development of the recruitment and compensation-setting in the best interests of IRPC, shareholders, and stakeholders. The committee performed with responsibility, transparency, fairness, and maximum efficiency under its own charter and in line with corporate governance regarded as “excellent” under international standards and the 2017 CG Code – which the committee duly applied to business in creating value for IRPC’s sustainable growth.

Nomination of directors and independent directors with high potential and good governance is instrumental to business efficiency and effectiveness. The committee also reviewed in depth the qualifications of those nominated as independent directors to ensure that they can truly represent shareholders as independent directors. Reviewing the Board structure for diversity, adequacy, and suitability for business complexity, the committee employed shareholders’ proposed dividend payment for complementary consideration of suitable compensation for directors. The shareholders approved directors’ compensation at the 2018 AGM at the same rate approved since 2006.

The committee held eight meetings this year. Besides its core mission of recruiting directors and committee members, as well as compensation for the Board, committees, and the President, this year it was assigned by the Board to oversee the formulation of senior executives’ succession planning and screen those that were chosen to replace retiring executives. This happened because this year five executive vice presidents (20%) were due to retire. Proper review of position holders would enable IRPC to conduct smooth ongoing business and lower management risks. The committee executed these tasks with prudence, equipped with reference data that aided decision-making. Incidentally, the Board approved the committee’s proposal.

As for the assessment of the President under the process and measurement criteria approved earlier in the year by the Board and the President, the committee proceeded with transparency on the basis of clear information. Other directors also played a part in the President’s assessment in view of his support for IRPC’s sustainable growth and summarized the findings for the Board’s approval under the defined compensation criteria. These criteria fell into two parts: corporate KPIs (70%) and other factors (30%) supporting sustainable growth that illustrated the role of leadership that had successfully resolved corporate problems and benefited corporate image, apart from garnering confidence and trust from all stakeholders.

The structure of the Nomination and Remuneration Committee contains at least one independent director. Today the chairman is an independent director. Please rest assured that, as a representative of the shareholders, the committee will remain committed to performing its tasks with independence, to the best of its ability, and with maximum regard for the best interests of IRPC, the shareholders, and stakeholders with fairness and a desire for IRPC to be a beneficial norm for investors, the Thai capital market, the public sector, and society at large.

(Mr. Woothisarn Tanchai)

Chairman, Nomination and Remuneration Committee



Message from the Chairman, Risk Management Committee

Dear Shareholders,

IRPC Public Company Limited recognizes and highly values efficient, effective risk management across the corporation to assure stakeholders of its ability to achieve goals and prevention and mitigation of potential losses under its business circumstances and uncertainty. The Board appointed a Risk Management Committee, whose duties and responsibilities are to define a risk management policy and advocate risk management guidelines for suitable and efficient business conduct, review financial tool principles for derivatives, screen and counsel on investment project risk management with considerable technical complexity and long-term obligations, advocate to the management and employees risk management practice under the defined approach and policies, and define approaches for preventing future risks arising from ignorance of opportunities due to changing circumstances. The committee consists of 4 qualified, competent members with extensive risk management experience:

(1) Mr. Nuttachat Charuchinda	Chairman
(2) Mr. Ekniti Nitithanprapas	Member
(3) Mr. Worawat Pitayasiri*	Member
(4) Mr. Sukrit Surabotsopon	Member

* Mr. Worawat Pitayasiri replaced Mr. Chansin Treenuchagron (who resigned from the committee on August 31, 2018) on September 19, 2018.

The committee held six meetings this year, with the following highlights:

1. Oversaw and reviewed corporate risk management in compliance with the ISO 31000, consisting of risk identification, analysis, and assessment; setting risk management measures; and monitoring and reviewing risk management outcomes every quarter to keep risks manageable and achieve goals. The risks were strategic, business, operational ones. Additional meetings were held for critical cases that could materially affect IRPC.
2. Provided guidance for corporate risk management to the management. A Risk Management and Internal Control Committee (RMCC) provided oversight and drove corporate risk management under the defined policy and approach. The Supply Chain and Financial Risk Management Committee, meanwhile, monitored market situations, managed risks of crude oil prices and volumes, as well as engaging in financial transactions for efficient implementation and effective risk mitigation.
3. Reviewed the outcomes of price and financial risk management, while commenting on these every quarter.
4. Reviewed the hedging scope for compatibility with the impacts of the new requirements of the International Marine Organization (IMO), which requires fuels containing less than 0.5% sulfur by 2020, and monitored impacts of stock loss due to world oil price volatility by providing recommendations on proper management methods, including engagement in inventory hedging and inventory management.
5. Reviewed and commented on operational risks, namely SHE, process interruption, and community risks, to ensure the adequacy of risk management measures in protecting lives, assets, and company business, in addition to stakeholders.

6. Commented on risk management for IRPC's investment project to acquire an ABS plastic business and an E-commerce joint-venture project before seeking the Board's approval.
7. Commented on IRPC's personnel development risk management to align with strategy driving toward goals, including systematic, key succession plans without business impacts.
8. Commented and advised IRPC to align its business with public policy promoting the Eastern Economic Corridor (EEC) Project by instituting monitoring, preparedness, and pursuit of business opportunities to accommodate future growth.
9. Commented on IT security risk management by focusing on a Security Operation Center and forging awareness among employees for safe application and prevention of cyber attacks.
10. Commented on corporate KPIs for 2019 before tabling them for the Board's approval; reviewed risk items in line with business directions, strategies, and changing goals and circumstances.
11. Reviewed the suitability and risks facing strategic investment in the Maximum Aromatics (MARS) Project, embracing key risk issues, including market situations, project cost, and preparation of the EHIA report, to ensure goal achievement.
12. Reported its performance for the Board's acknowledgment every quarter.

The Risk Management Committee executed its tasks systematically, prudently, and thoroughly with full competency, freedom, and alignment with corporate governance in the proper interests of IRPC, its shareholders, and stakeholders.



(Mr. Nuttachat Charuchinda)

Chairman, Risk Management Committee





MANAGEMENT STRUCTURE

IRPC Information

Management Structure

Corporate Governance Report



IRPC INFORMATION

Company Name	IRPC Public Company Limited
Symbol/ Ticker	IRPC
Company Registration	0107537002567
Type of Business	Petroleum and Petrochemical
Industry	Resources
Sector	Energy & Utilities
Registered Capital	THB 20,475,000,000, consisting of 20,475,000,000 common shares at THB 1 per share
Paid-up Capital	THB 20,434,419,246, consisting of 20,434,419,246 common shares at THB 1 per share
Location	Headquarters and Plant: 299 Moo 5, Sukhumvit Road, Choen Noen, Rayong, Thailand Tel. + 66 (0) 3861-1333 Fax. + 66 (0) 3861-2813 Bangkok Office: 555/2, Energy Complex, Building B, 6th Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Tel. + 66 (0) 2765-7000 Fax. + 66 (0) 2765-7001
Website	www.irpc.co.th
References	
Share Registrar	Thailand Securities Depository Company Limited 93 Ratchadaphisek Road, Din Daeng, Bangkok 10400 Tel. + 66 (0) 2009-9000 Fax. + 66 (0) 2009-9991
Auditor	Mr. Permsak Wongpatcharapakorn CPA No. 3427, Deloitte Touche Tohmatsu Jaiyos Advisory Co., Ltd. 11/1 AIA Sathorn Tower, 23rd-27th Floor, South Sathorn Road, Yanawa, Sathorn, Bangkok 10120, Thailand Tel. + 66 (0) 2034-0000 Fax + 66 (0) 2034-0100
Baht Bond Registrar	TMB Bank Public Company Limited 3000 Phaholyothin Road, Chompon, Chatuchak, Bangkok 10900, Thailand Tel. +66 (0) 2299-1111++++

Juristic persons whose 10% shares or more are held by IRPC



(Unit: Million Baht)

No.	Company	% of shares	Paid-Up Capital
1	IRPC Oil Co., Ltd. Address: 555/2 Energy Complex, Building B, 7th Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Tel. +66 (0) 2765-7000 Fax. +66 (0) 2765-7001 Type of Business: Distribution of refined products	99.99%	2,000
2	Rakpasak Co., Ltd. Address: 555/2 Energy Complex, Building B, 7th Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Tel. +66 (0) 2765-7000 Fax. +66 (0) 2765-7001 Type of Business: Marine logistics <i>Remarks: Subsidiary of IRPC Oil Co., Ltd.</i>	99.99%	30
3	IRPC Technology Co., Ltd. Address: 309 Moo 5, Sukhumvit Road, Choeng Noen, Rayong Tel. +66 (0) 3802-2835 Fax. +66 (0) 3802-2835 ext. 301 Type of Business: Vocational school	99.99%	750
4	I Polymer Co., Ltd. Address: 555/2 Energy Complex, Building B, 9th Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Tel. +66 (0) 2765-7000 Type of Business: E-commerce sale of polymers and chemicals	99.99%	5
5	IRPC A&L Co., Ltd. Address: 555/2 Energy Complex, Building B, 9th Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Tel. +66 (0) 2765-7508 Fax. +66 (0) 2765-7550 Type of Business: Sale of polymers	59.98%	10
6	IRPC Polyol Co., Ltd. Address: 555/2 Energy Complex, Building B, 7th Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Tel. +66 (0) 2765-6666 Fax. +66 (0) 2765-6677 Type of Business: Production and distribution of polyols	50.00%	300

(Unit: Million Baht)

No.	Company	% of shares	Paid-Up Capital
7	IRPC Clean Power Co., Ltd. Address: 299 Moo 5, Sukhumvit Road, Choeng Noen, Rayong Tel. +66 (0) 3861-1333 Fax. +66 (0) 3861-2813 Type of Business: Production and distribution of electricity and stream	48.99%	3,083
8	WHA Industrial Estate Rayong Co., Ltd. Address: 9/187 UM Tower, 18th Floor, Ramkhamhaeng Road, Suan Luang, Bangkok Type of Business: Industrial estate development	40.00%	163
9	UBE Chemicals (Asia) Public Company Limited Address: 98 Sathorn Square Office Tower, 18th Floor, North Sathorn Road, Silom, Bang Rak, Bangkok 10500 Tel. +66 (0) 2206-9300 Fax. +66 (0) 2206-9312 Type of Business: Production and distribution of petrochemicals	25.00%	10,739
10	PTT Energy Solutions Co., Ltd. Address: 888 Map Chalud-Laem Son Road, Huai Pong, Rayong Tel. +66 (0) 3897-8300 Fax. +66 (0) 3897-8333 Type of Business: Engineering consultancy	20.00%	150
11	Sarn Palung Social Enterprise Co., Ltd. Address: 555/1 Energy Complex Building A, 10th Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Tel. +66 (0) 2537-2971 Type of Business: Supporting execution of social enterprises	15.00%	2.5
12	Rayong Acetylene Co., Ltd. Address: 2/3 Moo 14, Bangna-Trad Road, Km. 6.5, Bang Kaeo, Bang Phli, Samut Prakan Tel. +66 (0) 2338-6100 Fax. +66 (0) 2313-0126 Type of Business: Production and distribution of acetylene gas	13.04%	155

Remarks : *Minutes of the meeting of the Board of Directors No. 10/ 2018 was approved that Company has established a domestic subsidiary, a joint venture in which the Company and Guangzho Saiju Performance Polymer Ltd. (GZJI), hold 55% of the shares and GZJI holds 45% of the shares, currently in progress
-Only the companies with operations

Shareholding Structure

As of September 5, 2018, the closing date of the share roster, IRPC's top ten shareholders were as follows:

Name	Shares	Shareholding (%)
1. PTT Public Company Limited ⁽¹⁾	9,819,694,600	48.05
2. Thai NVDR Company Limited ⁽²⁾	1,930,531,142	9.44
3. STATE STREET EUROPE LIMITED	435,814,487	2.13
4. Social Security Office	352,998,300	1.72
5. SOUTH EAST ASIA UK (TYPE) NOMINEES LIMITED	312,685,567	1.53
6. THE BANK OF NEW YORK (NOMINEES) LIMITED	210,200,379	1.02
7. N.C.B. TRUST LIMITED-POLUNIN DEVELOPING COUNTRIES FUND, LLC	110,885,751	0.54
8. SE ASIA (TYPE B) NOMINEES LLC	86,856,264	0.43
9. MERRILL LYNCH PROFESSIONAL CLEARING CORP FOR EXCLUSIVE BENEFIT OF CUSTOMER A/C.	79,195,000	0.39
10. EAST FOURTEEN LIMITED-DIMENSIONAL EMER MKTS VALUE FD	78,350,300	0.38

Note :

⁽¹⁾ PTT Plc, as IRPC's majority shareholder, plays a part in setting the policy for the management and operation of IRPC with the approval of its Board of Directors. As of December 31, 2018, PTT was represented by five out of 14 IRPC directors.

⁽²⁾ Thai NVDR, a subsidiary of SET, engages in the business of issuing NVDRs (non-voting depository receipts), a listed form of SET securities. NVDRs are sold to investors, the proceeds of which are invested in SET-listed Thai reference securities. Investors in NVDRs are eligible for financial benefits, including dividends and the right for booking recapitalization shares as if they were shareholders of listed companies, but they are ineligible to vote at AGMs. Information about investors in Thai NVDR appears at www.set.or.th.

-IRPC has no shareholding agreement in matters affecting its administration.

-Shareholders who are foreigners can hold IRPC shares of up to 49% of the total issued and paid-up shares.

As of September 5, 2018, IRPC's shares held by foreigners amounted to 13.06% of the total shares.

As of February 28, 2018, had a free float of 44,371 cases, representing 51.89 %.

Dividend Policy

IRRC Public Company Limited)

IRRC'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 seen fit by the Board.

Affiliates

Each affiliate will separately consider its own dividend payment, taking into account its cash flow balances or net profits, or both, against its reserve investment budget as required by law or against other obligations as seen fit by each affiliate's board of directors.



MANAGEMENT STRUCTURE

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 annual operation result of the Company and consider meeting agenda as stipulated by law, including approval of financial state.

APPOINTMENT

BOARD OF DIRECTORS

Board of Directors consists of 15 members. The duty is to oversee all corporate operations to ensure the compliance to policies, directions and targets what 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.

REPORT

SUB-COMMITTEE



AUDIT COMMITTEE

is appointed by the Board and the sub-committee shall comprise of at least 3 directors, having duty to audit financial statement and to give advice on internal audit procedures. The board shall have at least one member who have adequate knowledge and experience in auditing the accountability of Company's financial statement.

NOMINATION AND REMUNERATION COMMITTEE

is appointed by the Board and the sub-committee shall comprise of at least 3 members, having duty in selection candidates for directorship, sub-committee and President, 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 duties is to express their opinions freely under the assigned tasks as to protect benefit of all shareholders and stakeholders equally. As of end of 2018, the Independent Directors consists of 7 members. In the event where the chairman is not an independent director, the independent director may be elected to perform duty in the meeting in some occasions.

The Board of Directors has envisioned **IRPC to become a leading integrated petrochemical complex in Asia by 2020** by formulating short-and long-term strategic plan to assure that the Company growth will be in line with the targeted direction.



CHAIRMAN

The Board of Directors elects one member as a chairman, to support and promote the performance of the Board at highest extend of the responsibility assigned, to oversee and monitor management result of the Board and sub-committees to ensure the 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, 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

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

is appointed by the Board of Directors.

SENIOR EXECUTIVE VICE PRESIDENT

is appointed by the President. The duty is to manage work under responsibility, policy and target assigned by the President.

MANAGEMENT COMMITTEE

The duty is to manage and ensure 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
- Senior Executive Vice President
- Executive Vice President

COMPANY SECRETARY

is appointed by Board of Directors. The duty is to perform secretarial tasks pursuant to the Securities and Stock Exchange Act B.E. 2535 and as stipulated by the Capital Market Supervisory Board as well as performing duties assigned by the Board.



Management Structure



Management Structure

The Management Structure or Organization Structure of IRPC comprises the shareholders, the Board of Directors and the management, with the President serving as the chief executive officer. The Board is accountable to the shareholders and the management to the Board. Efficient management and corporate governance are evident in the management structure, where relationship among the shareholders, the Board and the management; interest of all stakeholders on a fair and equitable basis; as well as corporate social responsibility are taken into consideration to ensure competitiveness and value addition for the shareholders in the long run and the path to sustainable growth.

In monitoring the business, the shareholders elect the Board of Directors to manage the operations for them. The Board defines the vision, business directions, policies, strategic plans, and annual budget, and then assign the management to

implement them in an efficient manner to achieve the desired goals and follow up on the progress of operations to ensure transparency and efficiency of operations to the utmost benefits and appropriate returns to shareholders' investment, as well as profitable and sustainable growth to IRPC, care and fair share of remuneration to employees.

Board of Directors

As of December 31, 2018, the Board consisted of 14 members, which suit the sizes, types and complexity of its businesses as follows:

- 13 non-management directors (92.86% of the entire Board)
- One management director (President)

Seven members of the Board are independent directors (50% of the entire Board), one of whom is female.

Details of the Board of Directors as of December 31, 2018

No.	Name		Position	Appointed Date	
1.	Mr. Chansin Treenuchagron ⁽¹⁾	Director	Chairman	October 20, 2015 April 4, 2018	1 st term 2 nd term
2.	Mr. Woothisarn Tanchai	Independent Director	Chairman of the Nomination and Remuneration Committee	June 19, 2015 April 4, 2017	1 st term 2 nd term
3.	Mr. Nuttachat Charuchinda	Director	Chairman of the Risk Management Committee	April 29, 2016 April 4, 2018	1 st term 2 nd term
4.	Mr. Somnuk Bomrungsalee	Independent Director	Chairman of the Audit Committee	April 9, 2014 April 4, 2017	1 st term 2 nd term
5.	Mr. Anusorn Sangnimnuan	Independent Director	Chairman of the Corporate Governance Committee	August 27, 2016 April 4, 2017	1 st term 2 nd term
6.	Gen. Sasin Thongpakdee	Independent Director	Member of the Corporate Governance Committee	September 1, 2014 April 3, 2015 April 4, 2018	1 st term 2 nd term 3 rd term
7.	Gen. Theppong Tipayachan	Independent Director	Member of the Corporate Governance Committee	September 1, 2016 April 4, 2018	1 st term 2 nd term
8.	Mr. Ekniti Nitithanprapas	Director	Member of the Risk Management Committee	November 17, 2015 April 4, 2017	1 st term 2 nd term
9.	Mr. Jessada Promjart	Independent Director	Member of the Audit Committee	March 16, 2016 April 4, 2017	1 st term 2 nd term
10.	Ms. Ruenvadee Suwanmongkol	Independent Director	Member of the Audit Committee	April 1, 2016	1 st term
11.	Mr. Kris Imsang	Director	Member of the Corporate Governance Committee	December 2, 2017	1 st term
12.	Mr. Preecha Pocatanawat ⁽²⁾	Director	Member of the Nomination and Remuneration Committee	September 19, 2018	1 st term
13.	Mr. Worawat Pitayasiri ⁽³⁾	Director	Member of the Risk Management Committee	September 19, 2018	1 st term
14.	Mr. Sukrit Surabotsopon	Director (Management Director)	Member of the Risk Management Committee/ President/ Secretary to the Board of Directors	October 1, 2013 April 3, 2015 April 4, 2018	1 st term 2 nd term 3 rd term

Note:

1. Mr. Tevin Vongvanich, Chairman, resigned on August 21, 2018, as his tenure in the positions of IRPC Chairman and President of PTT has ended according to his employment contract. Mr. Chansin Treenuchagron was appointed by resolution of the Board to replace Mr. Tevin Vongvanich as Chairman, effective August 31, 2018.
2. The Board appointed Mr. Preecha Pokatanawat as director in place of Mr. Tevin Vongvanich.
3. Mr. Chavalit Punthong, Director and Member of the Nomination and Remuneration Committee, resigned on January 31, 2018. Ms. Jiraphon Kawswat was then appointed by the Board to replace Mr. Chavalit Punthong as director on February 14, 2018. On August 21, 2018, Ms. Jiraphon Kawswat resigned, and the Board appointed Mr. Worawat Pitayasiri as her replacement.
4. Ms. Nantika Thangsuphanich, Director and Member of the Nomination and Remuneration Committee, resigned on November 6, 2018.

Directors authorized to sign for IRPC

The directors authorized to sign for IRPC as stated in the Company Certificate dated December 31, 2018, comprise (1) Mr. Chansin Treenuchagron, (2) Mr. Nuttachat Charuchinda, (3) Mr. Sukrit Surabotsopon, (4) Mr. Preecha Pocatanawat, and (5) Mr. Worawat Pitayasiri. The signatures of two of these five are required together with IRPC's Seal affixed.

Composition and Qualifications of the Board

1. The Board of Directors consists of 5 – 15 directors.
2. Independent directors must account for at least one-third of the Board, and there must be at least three of them on the Board.
3. Directors must not be older than 70 years old.

4. Each term of office for directors and independent directors is three years. Directors and independent directors can serve up to three consecutive terms (nine years).
5. Directorship in state enterprises or listed companies on the Stock Exchange of Thailand (SET) must comply with following limitations:
 - (1) For state enterprises or juristic persons whose shares are held by state enterprises – not exceeding three
 - (2) For listed companies on SET – not exceeding three. Directorship in (1) and (2) altogether must not exceed five.
6. Directors must be qualified persons with knowledge, skills, capacity, and experience in necessary fields. As a minimum, there must be three petroleum or petrochemical experts, one legal expert, and one accounting and finance expert, in compliance with IRPC's policy and nomination and appointment criteria, based on education, management experience in relevant fields, as well as success recognized by business with the equivalent size of IRPC.
7. Directors must be duly qualified and bear no prohibitions stated in the Public Limited Company Act, the Securities and Exchange Act, the Capital Market Advisory Board's notifications, SEC's and SET's rules and regulations, IRPC's Articles of Association and Corporate Governance principles, and other related laws and regulations. Also, they must be free from any questionable traits for running IRPC's businesses.
8. Directors must be duly qualified and bear no prohibitions according to the Cabinet resolution of January 24, 2011, on the appointment of high-ranking government officers and that of directors in state enterprises or juristic persons whose shares are held by state enterprises.
9. Directors must command characteristics and personal images complementary and supportive of their work in corporate governance to add value to IRPC, including ethics, integrity, independence, assertiveness, creativity, capability to perform the duty of care and duty of loyalty with dedication, and are socially acceptable.
10. For former directors, their past performance, dedication, as well as useful opinions/recommendations made will be also considered.

Qualifications of Independent Directors

Independent directors mean directors who are independent from the major shareholders or group of major shareholders and IRPC's management. In performing their duties, independent directors are free to provide opinions to protect the interests of all shareholders and stakeholders on an equitable basis.

Qualifications stipulated by IRPC for independent directors are **more stringent** than those of SEC and SET:

1. Holding no more than 0.5% of the voting shares in IRPC, parent companies, subsidiary companies, associated companies, major shareholders, or any persons with controlling power over IRPC. Shares held by parties related to independent directors must also be included (not exceeding 1% under official requirements).
2. Not being current or past directors participating in the management of IRPC, employees, staff members, or advisers with regular salaries from IRPC, or any persons with controlling power over IRPC, parent companies, subsidiary companies, associated or equivalent companies, major shareholders, or persons with controlling power over IRPC, except such qualifications have ended for at least two years. However, such restrictions do not apply to independent directors who have been government officers or advisers of government agencies which are IRPC's major shareholders, or of persons with controlling power over IRPC.
3. Not being related by blood or by legal registration as parents, spouses, siblings, or children, spouses of the children of any directors, management members, major shareholders, persons with controlling power, or persons about to be nominated as directors, management members or persons with controlling power over IRPC or its subsidiaries.
4. Engaging in no past or present business relationship with IRPC, parent companies, subsidiary companies, associated companies, major shareholders, or persons with controlling power over IRPC to an extent that such independent directors' discretion may be compromised, and not current or past substantial shareholders or persons with controlling power over the person having business relation with IRPC, parent companies, subsidiary companies, associated companies, major shareholders, or persons with controlling power over IRPC, except when such qualifications have ended for at least two years.

The business relations referred to in the first paragraph shall include any ordinary course of business transactions, any lease of properties, transactions relating to assets or services, or any financial support or acceptance of financial support by way of either lending, borrowing, guaranteeing, collateral providing, or any other manners similar to it that could result in an obligation required to be performed by the applicant or the party to it for 3% or more of the net tangible asset value of THB 20 million or more, whichever is lower. The method for calculating the value of connected transactions under the Capital Market Supervisory Board's notification on Rules of Entering into Connected Transactions must be applied mutatis mutandis in the calculation of the amount of debt. In calculating such debt, the debt incurred during the past year leading to the date on which such business relation with such person exists must also be included.

5. Not being current or past auditors of IRPC, parent companies, subsidiary companies, associated companies, major shareholders, or of persons with controlling power over IRPC, and not substantial shareholders, persons with controlling power, or partners of any audit firms or offices which employ the auditors of IRPC, parent companies, subsidiary companies, associated companies, major shareholders, or persons with controlling power over IRPC, except when such qualifications have ended for at least two years.
6. Not being past or current professional advisers, including legal or financial advisers receiving the service fee of over THB 2 million per year from

IRPC, parent companies, subsidiary companies, associated companies, major shareholders, or persons with controlling power over IRPC, and not substantial shareholders, persons with controlling power, or partners of such professional service providers, except when such qualifications have ended for at least two years.

7. Not being directors appointed as a representative of a director of IRPC, of a major shareholder of IRPC, or of a shareholder who is related to the major shareholder of IRPC.
8. Engaging in no similar business in competition with IRPC or its subsidiaries, and not being substantial partners in a partnership, executive directors, employees, staff members, or advisers who receive salaries or hold more than 1% of the voting shares in another company engaging in a similar business and in competition with IRPC or its subsidiaries.
9. Having no characteristics which may compromise the ability to provide independent comments on the operation of IRPC.

If there is dismissal or retirement of independent directors, IRPC must identify a qualified person as a replacement while maintaining the total number of independent directors under the regulations of the Capital Market Supervisory Board and corporate governance principles. However, if another director commands the required qualifications for independent directors, he or she will automatically become an independent director. The independence of independent directors is monitored and approved by the Nomination and Remuneration Committee to inform the Board of Directors.



Board of Directors' Snapshot as of 31 Dec 2018

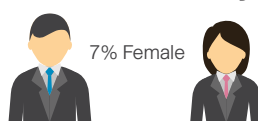
► All director nominees exhibit

- High integrity, Duty of Care and Duty of Loyalty
- A proven record of success
- A commitment to sustainability and social issues
- Innovative thinking
- Knowledge of corporate governance requirement and practices

► Average age

58 years

► Gender diversity



► Average tenure

3 Years

► Board component

Structure of entire Board 15 (1 seat in available)
independent 7
non-executive 13
Executive 1

► Average board meeting

Attendance: 97 % of meetings
(minimum required 75 %)

- **13** independent or non-executive members
have energy/ petroleum/
petrochemical industry experience

- **13** non-executive and independent directors
with 3 or less other mandates
(restriction as referred in CG Handbook)

Appointment and Dismissal

IRPC's procedures for appointment and dismissal of directors are summarized as follows:

Appointment

1. Shareholders appoint directors. The Nomination and Remuneration Committee screens appropriate candidates and tables a list to the Board before submission to the shareholders' meeting for consideration and approval under the following criteria:

- (1) One shareholder carries one vote per share.
- (2) To elect directors, votes can be cast for individual candidates or a collective vote can be cast for the entire number of directors to be elected, as seen appropriate by the shareholders' meeting. Each candidate, by individual or collective voting, is allowed to receive the number of votes in accordance

with the total number of shares held by each shareholder under (1) Shareholders cannot split their votes in favor of other candidates.

- (3) Successful candidates are ranked by the number of votes received, the number of whom matches the number of directors to be elected. If candidates get equal votes, which makes the number of successful candidates exceed that of directors to be elected, the Chairman of that meeting is to cast a decisive vote.

2. The Board selects one member as the Chairman and can also select one or more members to be his/her Vice Chairman to perform duty as stipulated in IRPC's Articles of Association and as assigned by the Chairman (no Vice Chairman was currently appointed).

3. The Board selects one member as President under related procedures and regulations and assigns the President as Director and Secretary to the Board.
4. If any vacancies on the Board exist for any reasons other than term expiry, the Board must select a qualified person without prohibited qualifications at their following meeting. If the remaining term is less than two months, the newly elected director will stay in office for the remaining term of the former. The resolution of the Board on this matter must consist of no less than three-quarters of the votes of the remaining directors.
5. If the number of vacancies on the Board reduces its composition to less than the Board's quorum, the existing directors are allowed only to call, on behalf of the Board, a shareholders' meeting to elect the replacements for all vacancies. The shareholders' meeting must be held within one month from the date of such vacancy. The newly elected director will stay in office only for the remaining term of the former.
6. The newly elected directors should be briefed on the information that is useful and essential to their work within three months from the date of their appointment

Dismissal

1. As a rule, directors complete their three-year terms. (However, dismissed ones may be re-elected).
2. In addition to term expiry, directorship ends with death, resignation, lack of qualifications, or being found with prohibitions by law, the resolution of the shareholders' meeting, or court verdict.
3. Directors wishing to leave the post must tender their resignations to IRPC. Such resignation will take effect from the date the resignation reaches IRPC.

Duties and Responsibilities

The Board supervises IRPC's operations with its duty of care and duty of loyalty. It is responsible for the shareholders on IRPC's business operations, ensure that management complies with policies, guidelines, and targets for the best interests of the shareholders based on ethics and benefit of all stakeholders as follows:

1. Define IRPC's vision, direction, and strategies that support sustainable growth under economic, social, and environmental aspects, by expressing full views, valuing importance on information search beneficial to the direction, as well as consider potential risks to provide confidence that the management can efficiently implement the defined vision, direction, and strategies in line with the desired goals.
2. Review and approve IRPC's major policies, strategies, objectives, financial targets and action plans at least once a year, and regularly follow up on the implementation of defined action plans in compliance with IRPC's direction and strategies.
3. Ensure a reliable accounting system, financial reporting and auditing, and supervise a suitable assessment procedure to ensure efficient and effective internal control and internal audit.
4. Consider potential major risk factors and determine the overall guidelines of risk management, ensure that an efficient risk management system or procedure is in place, and seek business opportunities that may arise from the risks.
5. Monitor and solve problems of conflicts of interest that may arise, as well as connected transactions, consider important main business transactions, focusing on maximum benefit to shareholders and all stakeholders.
6. Arrange for an appropriate compensation system or mechanism for IRPC's top management, taking into accounts IRPC's performance and business plans, to foster short-term and long-term motivation.

7. Stipulate that the President's directorship in other companies must be approved by the Board and the top management's directorship in other companies must be approved by the President, and that the appointment of directors in IRPC's subsidiaries or joint-venture companies proportional to its shareholding or to shareholders' agreements is to be the Board's authority.
8. Define elements and operational goals for the President by linking them with IRPC's business plans and the use of Balanced Scorecard framework, and ensure regular assessment of the President's performance and determine the compensation, given his performance to foster short-term and long-term motivation.
9. Provide suitable communication channels with each group of shareholders and stakeholders and assess the information disclosure to ensure its accuracy, clarity, transparency, reliability, and high standards.
10. Assume leadership and act as role models in conducting business under IRPC's corporate governance and CSR guidelines.
11. Encourage IRPC to undertake anti-fraud and anti-corruption activities in every form and promote good governance practices.
12. Appoint a qualified Company Secretary as stipulated by law to perform and assume responsibilities in compliance with the Securities and Exchange Act and applicable laws.

Approval Authority of the Board

1. Vision, strategies, short-term and long-term business plans, and major policies such as the corporate governance policy, risk management policy, trade competition policy, anti-corruption policy, connected transaction policy, and information disclosure policy.
2. Financial criteria, investment, investment direction, and financial targets, action plans, and annual budget.
3. Procurement that exceeds the President's approval as authorized for each item.
4. Investment projects and major operations under its objectives, articles of association, resolutions of the shareholders' meetings and relevant laws, and supervise the management to implement policies and plans as defined with efficiency and effectiveness.
5. Transactions under the Securities and Exchange Act, such as connected transactions, property acquisition, and disposal.
6. Payment of interim dividends to shareholders and staff's annual compensation and bonuses.
7. Performance targets/ goals and results and determination of the President's compensation.
8. The President's position in other organizations.
9. List of management to hold directorship in IRPC's subsidiaries or joint-venture companies proportional to its shareholding.

Approval Authority of the Shareholders

In performing their responsibilities on the following essential matters, the Board must receive approval from the shareholders by votes of no less than three-quarters of the total number of eligible votes cast by eligible shareholders present, unless otherwise defined by law:

1. Sale or transfer of the entire or essential parts of businesses to other parties.
2. Purchase or acquisition of businesses of other companies or private companies.



3. Making, amending, or terminating the entire or essential parts of agreements on the lease of businesses.
4. Assigning other parties to manage business.
5. Merger of business with other parties for profit/loss sharing.
6. Making amendments to Memorandum of Association or Articles of Association.
7. Increase or decrease of the registered capital or issuance of debentures.
8. Merger or dissolution of IRPC.

Duties and Responsibilities of the Chairman

To ensure clear division of duties over IRPC's policy formulation and operation, and the role of Board to lead and monitor the management's performance, IRPC stipulates that the Chairman and the President must not be the same person. The Chairman's duties and responsibilities include the following:

1. Call Board meetings, Chairman Board meetings and shareholders' meeting, and set meeting agenda in collaboration with the President.
2. Approve matters for Board meetings (in collaboration with the President)
3. Attend Board meetings and shareholders' meetings, ensure efficient meetings in compliance with IRPC's Articles of Association, while encouraging directors and shareholders to express their independent views with information duly provided.
4. Encourage the shareholders to exercise and safeguard their rights on an equitable basis.
5. Encourage the Board to work to their utmost ability, based on their duties and responsibilities under corporate governance, and support the work of the President.

6. Supervise and follow up the work of the Board and the committees to ensure that IRPC's objectives are reached.

7. Cast a decisive vote in Board meetings in case of equal votes of both sides.

Sub-Committees

In compliance with corporate governance, the Board has appointed four standing sub-committees, (or committees) each of which is assigned to consider and oversee specific critical matters in their respective areas. Each committee is structured as detailed below:

1. Audit Committee

The Audit Committee appoints at least three independent directors. The Audit Committee must be duly qualified under the notifications of SET and the Capital Market Supervisory Board. The Audit Committee must have at least one director who commands sufficient knowledge and experience on accounting and finance to review the reliability of the budget. Members are:



- (1) Mr. Somnuk Bomrungsalee
(Independent Director) Chairman
- (2) Ms. Ruenvadee Suwanmongkol
(Independent Director) Member
- (3) Mr. Jessada Promjart
(Independent Director) Member

Office of Corporate Internal Audit, and Secretary to the Audit Committee

The Audit Committee assigns the Office of Corporate Internal Audit to ensure that operations, the management and employees are executed in compliance with the laws, related rules and regulations and the internal control system, and to handle both internal and external complaints. The Executive Vice President, Office of Corporate Internal Audit, commands independence and reports directly to the Audit Committee.

The Audit Committee appoints the Executive Vice President, Office of Corporate Internal Audit, its Secretary to facilitate its work on meeting appointments, preparation of meeting agenda, dispatch of accompanying documents, and minutes of meetings, and to ensure that work is performed in line with its policy. The secretary must possess knowledge, ability, and experience to assist the Audit Committee, and this position is currently held by:

Mr. Thammasak Panyowatkool

Position: Executive Vice President, Office of Corporate Internal Audit, and Secretary to the Audit Committee Effective Date: January 1, 2016 to present (Mr. Thammasak Panyowatkool's profile is shown under Attachment Page 49)

Term of Office

1. Members have the same terms of office as their directorship.
2. Members who complete their terms of office may be re-appointed, as seen appropriate by the Board.
3. In case of dismissal, due reason must be given to SET.
4. In case of vacancies on the Audit Committee other than term expiry, the Board must appoint other qualified directors as new members within three months after the date of which the number of the Audit Committee members is not filled.

Duties and Responsibilities

1. Review financial reports to meet accounting standards with accuracy and sufficiency, as stipulated by law.
2. Review internal control and internal audit systems to ensure their suitability and effectiveness, and review effectiveness and sufficiency of the risk management process.
3. Review operations to ensure compliance with securities and exchange laws, and other laws relating to IRPC's business.
4. Review connected transactions or any other transaction with possible conflicts of interest to ensure compliance with legislation and SET's regulations, and ensure justification of such transactions and the best interests of IRPC.
5. Select and nominate independent persons as external auditors and make recommendations on their fees, as well as dismissal when incompetence, negligence or illegal performance is noted, and hold a meeting with them in the absence of the management at least once a year.
6. Consider the scope of audit and auditing plans of the external auditors and the Office of Corporate Internal Audit for complementation and reduced redundancy on financial auditing.
7. Approve the auditing plans and provide views on the budget and manpower of the Office of Corporate Internal Audit.
8. Consider, appoint, transfer, or dismiss the Vice President, Office of Corporate Internal Audit, and consider the independence of the office.
9. Review the efficiency and effectiveness of IT systems relevant to internal control and risk management.
10. Arrange for an internal audit report to be included in the annual report.

11. Gain access to the information of the review and investigation of relevant persons under the duties and responsibilities of the Audit Committee as stipulated by IRPC's regulations.

12. In performing its task, the Audit Committee must report to the Board for timely improvement and rectification if it comes across or doubts transactions or actions that may have significant impacts on IRPC's financial status and work performance, namely:

- (1) Transaction of conflicts of interest
- (2) Fraud or abnormality or major shortcomings in the internal control system
- (3) Violation of securities and exchange laws, SET's regulations, or laws relevant to IRPC's business.

If the Board or the management fails to undertake improvement or rectification within a suitable period of time and without valid reason, the Audit Committee must report the transactions or actions of such violation to SEC or SET on receiving the information without delay.

13. Perform other tasks as assigned by the Board.

2. Nomination and Remuneration Committee

The Nomination and Remuneration Committee consists of at least three directors, at least one of whom must be an independent director. Current members are:



- (1) Mr. Woothisarn Tanchai
(Independent Director) Chairman
- (2) Mr. Preecha Pocatanawat
(Director) Member
- (3) Ms. Nantika Thangsuphanich
(Director)* Member

*Ms. Nantika Thangsuphanich resigned from her directorship and membership of the Nomination and Remuneration Committee, effective November 6, 2018.

Ms. Monwipa Chooipiban, Executive Vice President, Office of Corporate Affairs and Company Secretary, served as Secretary until September 30, 2018 (due to retirement age)

Mrs. Peyada Chongpayuha, Executive Vice President, Office of Corporate Affairs and Company Secretary, serves as Secretary from October 16, 2018, until present.

Term of Office

1. Members have the same terms of office as their directorship.
2. Members who complete their terms of office may be re-appointed, as deemed appropriate by the Board.

Duties and Responsibilities

Duties and responsibilities of the Nomination and Remuneration Committee can be divided into:

Part 1: Nomination

1. Consider and propose the structure, size and component of the Board and the sub-committees, that suit the size, type and complexity of the business in a transparent manner, without influence from any shareholder with controlling power, and submit for the approval of the Board or the shareholders' meeting, or both.
2. Consider the qualifications of the candidates for directorship, based on:

- 1) The Board consists of directors with skills, knowledge, capacity and required qualifications, without prohibitions stipulated in the laws and related regulations, IRPC's CG Handbook or Articles of Association.
- 2) General characteristics, such as ethics and responsibility, decision-making based on facts and reason, maturity, free expression of different and independent points of view, adherence to principles and standards as a professional, and diversity in knowledge, work experience, age and gender.
- 3) Skills which suit IRPC's businesses, needs and required conditions. It will be also to IRPC's benefit if the candidate is on a list guaranteed by a government agency.
- 4) Consider directors' dedication to their directorship in other companies or state enterprises or listed companies whereby each director can hold tenure:
 - (1) in state enterprises or companies where state enterprises are shareholders in a total of up to three companies;
 - (2) in up to three listed companies.
 Directorship in (1) and (2) above must not exceed five companies in total.
3. Consider the qualifications of the candidates for independent directors in compliance with IRPC's corporate governance principles, the criteria of SET and SEC, and without prohibitions stipulated by law and related regulations.
4. Propose criteria and a process for nominating incoming directors and submit them to the Board for approval.
5. Screen appropriate candidates for directorship in the cases of vacancies and completion of terms and table the list to the Board or the shareholders' meeting for approval, or both.
6. Consider the lists of directors for membership of the sub-committees and table them to the Board for approval.
7. Screen appropriate candidates for President with attention and suitability for IRPC's maximum benefit and submit the list to the Board for approval.
8. Define performance components and targets of the President, including leadership, social responsibility, definition and implementation of strategies, financial performance, relation between the Board and the management, and succession plan, creation of and promotion of positive corporate image for use as criteria in the President's performance assessment and annual compensation adjustment, and submit these to the Board for approval.
9. Assess the annual performance and the compensation of the President, such as salary, pension, bonus, welfare and other monetary and non-monetary benefits based on the defined criteria, and submit to the Board for approval.
10. Consider succession plans for the President and executives to ensure uninterrupted operations and the availability of successors on retirement or inability to perform of the President or management.

Part 2: Compensation

1. Consider and propose the structure, criteria and forms of compensation for the Board and the sub-committees, such as retainer fees, bonuses, meeting allowance and compensation in the forms of either monetary or non-monetary, which correspond with the size of business, adequate and fair, to foster motivation of qualified directors, and correspond with shareholders' interest. Directors' and sub-committees' compensation must have the approval of the shareholders' meeting.

2. Define criteria and forms of compensation which are appropriate, adequate and fair for the President to foster his motivation for sustainable value addition to IRPC and keep capable executives with the company. The President's compensation is approved by the Board.
3. If needed, IRPC can engage at its own expenses external consultants to advise it on the determination of appropriate compensation for the directors and the President.
4. Perform other duties as assigned by the Board.

Procedures for Nomination of Directors

The Nomination and Remuneration Committee screens appropriate candidates for the Board or the sub-committees based on the candidates' qualifications as determined by the Board under the following criteria:

1. Consider the suitability of specific knowledge, experience, and ability that will be of use to IRPC or relate to the major business or industry that IRPC is presently undertaking, to supplement the required Board component and enhance consistency with IRPC's business direction.
2. Consider the diversification of gender, age, expertise, skill, and experience (board skill matrix/ board diversity), knowledge and ability in both hard skills and soft skills and sustainability supporting factor to ensure that the directors can perform their work efficiently and complement the Board as a whole with their different knowledge and experience in the best interests of IRPC. The information of directors in the Directors' Pool will be also taken into consideration.
3. Review qualifications of nominated candidates for compliance with the laws, regulations of the regulators, such as the Public Limited Company Act and the Securities and Exchange Act B.E. 2535 (1992) to ensure they are not classified by the law as having prohibited characteristics.
4. Consider directors' dedication, in case of returning directors, past performance, number of listed companies that each director serves of up to four listed companies, to suit IRPC's nature of business and in compliance with the Cabinet resolution of January 24, 2011, on the appointment of high-ranking government officers and the appointment of directors in state enterprises.
5. In case of nominating independent directors, consider their independence in compliance with the criteria of SEC, IRPC's criteria, as well as the necessity to nominate additional independent directors in the case of disqualification of any director, to maintain the structure of the Board as defined in its policy.
6. Determine the terms of office for independent directors. For a returning independent director, the gap period between the first day of new tenure and the last day of his/ her first term as independent director must not exceed 9 years.
7. Approach the persons whose qualities agree with the criteria to ensure their willingness to take up IRPC's directorship if appointed.
8. Submit the screened candidates with accompanying qualifications and reasons of nomination to the Board for its consideration before submitting the list to the shareholders' meeting for approval. The Board, however, may appoint directors to fill vacancies or resigned posts during the year as stated in IRPC's Articles of Association and the Public Limited Company Act.
9. For sub-committees, the Nomination and Remuneration Committee considers appropriate knowledge and ability, the composition of the entire committees, and criteria of directorship, such as the board skill matrix/ board diversity, and directors' independence and submit to the Board for approval.

3. Corporate Governance Committee

The Corporate Governance Committee consists of at least three directors, at least one of whom must be an independent director, with the duties of recommending implementation guidelines and advice on corporate governance to the Board. Members are:



- (1) Mr. Anusorn Sangnimnuan
(Independent Director) Chairman
- (2) Gen. Sasin Thongpakdee
(Independent Director) Member
- (3) Gen. Theppong Tipayachan
(Independent Director) Member
- (4) Mr. Kris Imsang
Member

Ms. Monwipa Choopiban, Executive Vice President, Office of Corporate Affairs, and Company Secretary, served as Secretary until September 30, 2018, due to retirement age.

Mrs. Peyada Chongpayuha, Executive Vice President, Office of Corporate Affairs, and Company Secretary, serves as Secretary from November 20, 2018, until present.

Term of Office

- 1. Members have the same terms of office as their directorship.
- 2. Members who complete their terms of office may be re-appointed, as deemed appropriate by the Board.

Duties and Responsibilities

- 1. Define a corporate governance policy as well as major and related implementation, such as an anti-corruption policy, sustainability management, environmental governance, and social responsibility, as well as ethics and code of business conduct requirements in line with the principles, standards and requirements of listed-company regulators, such as SET and SEC, and other national and international recognized organizations, and review and improve the policy and CG handbook at least once a year.
- 2. Define guidelines and measures, monitor and follow up to ensure that operations comply with policies and guidelines, and that corporate governance is being continually developed and improved.
- 3. Consider and endorse the method for the assessment of the Board and the sub-committees performance and report the assessment results to the Board and the shareholders annually.
- 4. Monitor the work of the management to ensure compliance with corporate governance.
- 5. Monitor tasks under the corporate governance policy and the annual corporate governance work plan as approved by the Board.
- 6. Monitor implementation under the anti-corruption policy, sustainability management, social, community and environment responsibility, and other applicable GRC (good governance, risk management and compliance management) policies to ensure efficiency and suitability for IRPC's business.
- 7. Perform other tasks as assigned by the Board.

4. Risk Management Committee

The Risk Management Committee consists of at least three directors who are experts in the petroleum or the petrochemical business with the duties and responsibilities of defining the risk management policy, risk management plan, and risk management procedure for the entire company in compliance with corporate and strategic plans. Members are:



- (1) Mr. Nuttachat Charuchinda
(Director) Chairman
- (2) Mr. Worawat Pitayasiri
(Director)* Member
- (3) Mr. Ekniti Nitithanprapas
(Director) Member
- (4) Mr. Sukrit Surabotsopon
(Director) Member

*Mr. Worawat Pitayasiri was appointed on September 19, 2018, replacing Mr. Chansin Treenuchagron, who resigned from this Committee on August 31, 2018.

Ms. Wanida Uthaisomana, Executive Vice President, Corporate Business Planning, serves as Secretary until December 2018 (as she has been appointed Senior Executive Vice President, Corporate Commercial and Marketing, effective January 1, 2019.)

Mr. Somkiat Lertritpuwadol, Senior Executive Vice President, Corporate Strategy, serves as Secretary of this Committee, starting January 2019.

Term of Office

1. Members have the same terms of office as their directorship.

2. Members who complete their terms of office may be re-appointed, as seen appropriate by the Board.

Duties and Responsibilities

1. Formulate suitable, efficient policies and recommendations on risk management involving business operations.
2. Ensure that all corporate risks are identified, based on external and internal risk factors. Evaluate possible impacts and occurrence. Rank risks and make suitable choice of risk management measures.
3. Support and keep improving the risk management system and ensure that various instruments for risk management are efficiently used, such as financial instruments and derivatives contracts, futures contracts and hedging.
4. Monitor, follow-up and review enterprise risk management system to ensure efficiency, and assess performance under the risk management scope.
5. Submit regular reports on risk management monitoring and risk mitigation to the Board for acknowledgment. Critical matters having significant impacts on IRPC must be reported to the Board without delay.
6. Support the execution of risk management to encourage continuous implementation of risk management that is consistent with business plans.
7. Screen and provide advice on risk management for investment projects or activities with considerable technical complication, long-term obligations and significant risks.
8. Provide a report of the Risk Management Committee and disclose it in the annual report.
9. Perform other tasks as assigned by the Board.

Risk Management Committee at the Management level

Apart from a Risk Management Committee at the Board level, IRPC has set up a Risk Management Steering Committee at the management, taskforce, and risk agent levels to monitor and ensure greater efficiency in its overall risk management and internal control system as follows:

1. Risk Management and Internal Control Committee (RMCC)
2. Hedging Committee
3. The Risk Manager is responsible for the overall risk management.
4. The Risk Owner defines risk management plans and is responsible for risk management.
5. The Risk Agent coordinates with everyone in the unit or in projects for risk management planning, and reports on follow-up and on risk management performance to managers or project managers to ensure appropriate, sufficient risk management that responds to risks at the unit level.
6. Compliance Working Team manages compliance of risk management and reports the results of the performance to the Risk Management Committee for acknowledgment, provides advice on legal compliance, and compiles all regulations relevant to IRPC's operations, and sets up an alarm system and an operation support system to maximize operational efficiency.

Meetings of the Board and the Sub-Committees

IRPC schedules Board meetings in advance throughout the year. The schedules are provided for approval during November or December of each year. Board meetings are held once a month on every Tuesday of the third week. Extraordinary meetings might be called as seen fit. The Chairman and the President jointly set the meeting agenda and matters to be included. Directors are encouraged to propose matters for consideration at each Board meeting. Important matters that require regular

consideration each month are clearly defined in the agenda, including ongoing matters to keep abreast with progress on investment projects or IRPC's performance. Matters duly approved by the Board are also included in the agenda to ensure the Board that IRPC's strategies have been properly and accurately implemented for the purpose.

The Company Secretary arranges each meeting and documentation to ensure that the meeting proceeds smoothly and to facilitate the work of the directors, such as providing advice and recommendation on laws, IRPC's regulations and Articles of Association, producing supporting documents, and taking minutes of meetings.

Since 2017, IRPC has set up the Board Portal via the internet from the computer, smartphones and tablets. This electronic system helps the Board work with more flexibility and efficiency, such as filing and retrieving of IRPC's critical documents, supplementary documents for Board's and sub-committees' meetings, development and learning plans, and important information for the Board, both old and new, sends meeting notices and agenda in compliance with IRPC's Articles of Association with sufficient details seven days ahead of each meeting to allow directors enough time to prepare themselves.

At every meeting, in compliance with the corporate governance policy, directors with vested interests or conflicts of interest on each agenda must excuse themselves or abstain from voting on each connected agenda. At every meeting, the Chairman gave opportunities for directors to express their opinions freely, and all enquiries are clarified before voting decided by majority votes or special resolutions (as defined in IRPC's Articles of Association), decided by at least two-thirds of the directors. The minutes of the meeting on such matter must be clearly recorded, as well as recommendations and observations of the directors, to be adopted at the next Board meeting. The adopted minutes together with supporting documents are systematically filed for easy reference in the electronic format as confidential documents.



In 2018 the Board held 12 meetings, with one special meeting to define and review IRPC's vision, direction, strategies and business plans (BOD-STs); two special Board meetings; two meetings among the independent directors; and one Board meeting without the management. The meetings aimed at supporting good corporate governance. Diverse and useful recommendations were presented by the directors, and the work performed by the management were broadly and freely discussed. The Board assigned the management to have those recommendations implemented and report the results to the Board periodically. The issues discussed are as summarized below:

At the two meetings held by the independent directors (on May 15, 2018, and October 16, 2018), issues on IRPC's significant problem were discussed, such as the problems on risk related to oil prices, stock gain/ stock loss, corporate social responsibility, research and development work plans, risk management related to investment plans,

the solving of environment problems, and the solving of problems related to public properties.

At the Board meeting without the management (July 17, 2018), important issues useful to IRPC's operations were discussed, such as execution of projects investment not in line with goals, succession planning, roles of non-governmental organizations in supporting activities for public interest, environmental governance, IRPC's procurement rules and regulations, employees' benefits, and so forth.

The meeting attendance of the entire Board in 2018 was 97%, and the individual attendance of each director was not below 75% (75-100%) as summarized below:

Meeting Attendance of the Board and Sub-Committees in 2018

(Unit: Meetings)

NAME	Board	Board Special Meeting	Board without Management	Independent Directors	Audit Committee	Risk Management Committee	Corporate Governance Committee	Nomination and Remuneration Committee	Annual General Meeting of Shareholders 2018
	(15 members)	(15 members)	(14 members)	(7 members)	(3 members)	(4 members)	(4 members)	(3 members)	(15 members)
	Number of meetings: 12	Number of meetings: 2	Number of meetings: 1	Number of meetings: 2	Number of meetings: 13	Number of meetings: 6	Number of meetings: 7	Number of meetings: 8	Number of meetings: 1
1. Mr. Chansin Treenuchagron	12/12	1/2	1/1	-	-	3/4	-	-	1/1
2. Mr. Woothisarn Tanchai	12/12	2/2	1/1	2/2	-	-	-	8/8	1/1
3. Mr. Nuttachat Charuchinda	11/12	2/2	1/1	-	-	6/6	-	-	1/1
4. Mr. Somnuk Bomrungsalee	12/12	2/2	1/1	2/2	13/13	-	-	-	1/1
5. Mr. Anusorn Sangnimnuan	12/12	2/2	1/1	2/2	-	-	7/7	-	1/1
6. Gen. Sasin Thongpakdee	11/12	2/2	1/1	2/2	-	-	6/7	-	1/1
7. Gen. Theppong Tippayachan	9/12	0/2	0/1	2/2	-	-	5/7	-	1/1
8. Mr. Ekniti Nitithanprapas	12/12	1/2	1/1	-	-	6/6	-	-	1/1
9. Mr. Jessada Promjart	12/12	2/2	1/1	2/2	13/13	-	-	-	1/1
10. Ms. Ruenvadee Suwanmongkol	11/12	1/2	1/1	2/2	10/13	-	-	-	1/1
11. Mr. Kris Imsang	11/12	2/2	1/1	-	-	-	7/7	-	1/1
12. Mr. Preecha Pokatanawat ⁽¹⁾	3/3	1/1	-	-	-	-	-	3/3	-
13. Mr. Worawat Pitayasiri ⁽²⁾	3/3	1/1	-	-	-	2/2	-	-	-
14. Mr. Sukrit Surabotsopon	12/12	2/2	-	-	-	6/6	-	-	1/1
15. Mr. Chavalit Punthong ⁽³⁾	1/1	-	-	-	-	-	-	1/1	-
16. Ms. Jiraporn Kaosawad ⁽⁴⁾	5/5	-	1/1	-	-	-	-	2/2	1/1
17. Mr. Tevin Vongvanich ⁽⁵⁾	8/8	-	1/1	-	-	-	-	-	1/1
18. Ms. Nantika Thangsuphanich ⁽⁶⁾	10/10	1/1	1/1	-	-	-	-	6/6	1/1

Note:

1. The Board appointed Mr. Preecha Pokatanawat in place of Mr. Tevin Vongvanich, Chairman, who resigned on August 31, 2018.
2. The Board appointed Mr. Worawat Pitayasiri in place of Ms. Jiraporn Kaosawad who resigned on August 21, 2018.
3. Mr. Chavalit Punthong resigned from his directorship at IRPC on January 31, 2018.
4. Ms. Jiraporn Kaosawad resigned from her directorship at IRPC on August 21, 2018.
5. Mr. Tevin Vongvanich, Chairman, resigned on August 31, 2018 as his tenure as Chairman and President of PTT had ended according to his employment contract.
6. Ms. Nantika Thangsuphanich resigned from her directorship at IRPC on November 6, 2018.

The Management

IRPC has the President as the chief executive officer responsible for the management of operations assigned by the Board in the best interests of the company and the shareholders under appropriate situations. The President reports any significant change to the management structure to the Board for approval.

This year IRPC adjusted its management structure by setting up Corporate Strategy Function (merging Business Development, Corporate Business Planning, and Corporate Strategy Management & Mobilization) to enhance suitable and concise span of control that will render maximum benefit to the management of the company.

The President

The Board assigned the President as the chief executive officer of the management team to manage IRPC's business under IRPC's objectives, Articles of Association, and the Board-defined policy. His authority is clearly defined in writing. Work regulations are issued for all employees to acknowledge and adhere to.

Mr. Sukrit Surabotsopon was appointed President with effect from October 1, 2013, to January 30, 2019, a total of five years and four months.

Mr. Chansin Treenuchagron, IRPC's Chairman, acting for the President on January 31, 2019.

Mr. Noppadol Pinsupa was appointed President with effect from February 1, 2019.



Duties and Responsibilities

1. Manage business under the laws, objectives and Articles of Association, the Board's policy and the resolutions of shareholders' meetings.
2. Manage all executives and employees, draw up regulations and terms of work, appoint, establish salary, wage, welfare, transfer, dismiss, promote executives and employees to a higher position or salary, and execute disciplinary punishment under the Board's policy.
3. Comply with IRPC's policy, strategic and business plans, vision and mission as approved by the Board, with efficiency and in the best interests of IRPC.
4. Approve a budget for investment and procurement, and operating expenses under IRPC's plans and annual budget approved by the Board.
5. Manage cash flow, investment, budget, plans and risk management process with efficiency under the authority assigned by the Board.
6. Consider corporate performance and submit the proposed interim and annual dividend payments to the Board's or shareholders' meeting (as applicable) for approval.
7. Evaluate IRPC's performance and submit a progress report to the Board every quarter.
8. Act as a leader and role model in conducting business with adherence to business ethics and code of business conduct.
9. Act as a leader and good example to support and motivate other employees in complying with the corporate culture, making decisions in the appropriate direction, communicating positively to gain confidence and bolster good image of the organization; adhere to environmental stewardship with social and community responsibility, with an emphasis on safety and occupational health.
10. Ensure that business operations align with anti-corruption and anti-bribery guidelines.
11. Ensure implementation in complying with Sustainable Development Goals (SDGs) in pursuit of Good Corporate Citizenship.
12. Perform other acts to support IRPC's operations under the responsibilities delegated by the Board

The Management

As of December 31, 2018, IRPC's Management under SEC's definition consisted of 15 members as follows:

No.	Name	Position
1.	Mr. Sukrit Surabotsopon	President
2.	Mr. Pongpraphan Titathavewatana	Senior Executive Vice President, Petrochemical & Refinery Business Unit
3.	Mr. Somkiat Lertritpuwadol	Senior Executive Vice President, Corporate Commercial and Marketing
4.	Mrs. Nidcha Jirametthanakij	Senior Executive Vice President, Corporate Accounting & Finance
5.	Mr. Thammasak Panyowatkool	Executive Vice President, Acting Vice President, Office of Corporate Internal Audit
6.	Mr. Pravet Assavadakorn	Executive Vice President, Office of Corporate Research and Development
7.	Mrs. Peyada Chongpayuha	Executive Vice President, Office of Corporate Affairs/ Company Secretary
8.	Ms. Awrapin Ketranakul	Executive Vice President, Office of Sustainability Management
9.	Mr. Kraisit Anukoolutaiwong	Executive Vice President, Corporate Human Resources
10.	Ms. Wanida Utaisomnana	Executive Vice President, Corporate Business Planning, Acting Executive Vice President, Office of Corporate Management and Strategic Implementation
11.	Mr. Chalor Panutrakul	Executive Vice President, Corporate Business Development
12.	Mr. Veerawat Srinoradithlert	Executive Vice President, Engineering and Maintenance
13.	Mr. Woravuth Sivapetranart	Executive Vice President, Corporate Operation Production
14.	Mr. Vichit Nittayanonte	Executive Vice President, Operation Support
15.	Mr. Phothiwat Paopongchuang	Executive Vice President, assigned to the President.

Members of IRPC management that reached retirement age or resigned during 2018:

1. Mr. Pongpraphan Titathavewatana Senior Executive Vice President, Petrochemical & Refinery Business, retired on December 31, 2018.
2. Mr. Pravet Assavadakorn Executive Vice President, Office of Corporate Research and Development, retired on December 31, 2018
3. Mr. Chalor Panutrakul Executive Vice President, Corporate Business Development, retired on December 31, 2018
4. Mrs. Rachadaporn Rachataewindra Senior Executive Vice President, Corporate Accounting and Finance, retired on September 30, 2018.
5. Ms. Monwipa Choopiban Executive Vice President, Office of Corporate Affairs/ Company Secretary, retired on September 30, 2018.
6. Mr. Sirimet Leepagorn Senior Executive Vice President Office of Corporate Management and Strategic Implementation, retired on September 30, 2018.

On January 1, 2019, IRPC underwent restructuring (details shown in Organization Chart on page 38), so its Management under SEC definition now consists of five members as follows:

No.	Name	Position
1.	Mr. Sukrit Surabotsopon	President
2.	Mr. Woravuth Sivapetranart	Senior Vice President, Petrochemical & Refinery Business
3.	Mr. Somkiat Lertritpuwadol	Senior Vice President, Corporate Strategy
4.	Mrs. Nidcha Jirametthanakij	Senior Vice President, Corporate Accounting and Finance
5.	Ms. Wanida Utaisomnapa	Senior Vice President, Corporate Commercial and Marketing

Management Duties and Responsibilities

1. Ensure that the policies and goals defined by the President are put into practice.
2. Define strategic plans, objectives and major goals of functions in line with IRPC's vision and mission for implementation and use as guidelines for subordinates.
3. Be responsible for the management of the operations to achieve the goals, objectives and short- term and long-term strategic plans within the management framework under the organization structure as assigned.
4. Advise, support, assist and solve problems for the team, induce motivation and create a good work environment to ensure fully efficient and effective performance of the subordinates.
5. Promote the development of subordinates and apply their potential in the best interests of themselves and the corporation.
6. Support sustainable corporate growth under corporate governance, good governance and a socially and environmentally responsible organization.
7. Be role models for all subordinates.

Management Committee

To ensure the flow, efficiency, connection support and good business cooperation of IRPC's, its joint ventures' and affiliates' operations, the President appointed a Management Committee, consisting of the President, Senior Executive Vice President and Executive Vice President in every business unit with the Executive Vice President, Office of Corporate Affairs, serving as its Secretary.

The Management Committee schedules a meeting in advance once a week on Mondays. This year the Management Committee held 49 meetings.

Duties and Responsibilities

The Management Committee provides consultation and recommendations to the President for his decision-making on matters significant to IRPC's strategies, business operation direction, operation plans, corporate performance, investment plans and budgets, resource management and allocation to IRPC and its affiliates, as well as managing all business operations under the same direction. The Management Committee provides information for the President for his decision-making or for submission to the Board for consideration for matters beyond his authority as follows:

- Consider and screen investment management, budget allocation for investment, and support the operations of IRPC and its affiliates.
- Consider and screen essential business matters to be submitted for the Board's approval.
- Base key operation directions on accurate and complete information.
- Acknowledge reports on IRPC's, national and global situations which impact IRPC's business.
- Acknowledge progress of the operation under IRPC's major strategies.

- Approve important investment budgets within the authority given by the President.
- Review human resources (HR) management policy and mechanisms for HR system management.
- Scrutinize business risk management.
- Inspect the Environmental, Social and Governance (ESG).
- Consider implementation related to safety, health and the environment and propose recommendations for problem-solving to forge common awareness and joint improvement, such as complaints or incidents.
- Follow up on the results of internal audit and guidelines for problem-solving as advised by the Audit Committee for enterprise development.
- Follow up on the progress and performance of IRPC and its affiliates, and provide useful recommendations.
- Propose other information of the business function or related information, or both, to ensure sufficient information for efficient decision-making by the President and the management.

Moreover, the President appointed sub-committees and other taskforces as seen fit and in line with IRPC's strategic plans and situations, to manage, perform, or screen the operation under the tasks assigned, for example,

- Rayong Management Committee (RMM) to manage the operations and integration of the entire group of Rayong plants under the corporate vision and mission to achieve goals.
- A sub-committee was assigned to look into the issue of licenses under Section 9 for use of public properties to handle complaints from communities with transparency and for the utmost benefit of the communities and corporate business operations.
- The Quality, Security, Safety, Occupational Health, Environment Committee (QSSHE) was

appointed to manage IRPC's and its affiliates' quality management and social responsibility in compliance with IRPC Quality, Security, Safety, Occupational Health, Environment and Energy Policy.

- The VP meeting was scheduled in advance once a month on every last Friday to report to the VPs on operational results in all aspects, and jointly consider other business and employee issues and other matters. For matters of significance, they are to be considered by the MC Meeting.

Company Secretary

In conformity with the Securities and Exchange Act, B.E. 2535 (1992), as amended in B.E. 2551 (2008), and the corporate governance principles of listed companies, the Board appointed the Executive Vice President, Office of Corporate Affairs, Company Secretary to perform duties under the above-mentioned act and the announcements of the Capital Market Supervisory Board.

Duties and Responsibilities

The Company Secretary must execute her duties with accountability, care, and integrity. Her main duties and responsibilities comprise the following:

- Provide to directors advice and recommendations on the laws and IRPC's Articles of Association and rules and regulations, ensure that IRPC's businesses comply with the laws and applicable regulations, and report to the Board of any significant changes.
- Arrange Board's Meetings and Shareholders' Meetings in compliance with laws, IRPC's articles of associations and regulations, as well as general practices.
- Prepare the minutes of the Board's Meetings and Shareholders' Meetings and ensure that their resolutions are complied with and carried out.
- Ensure that the information and data under her responsibilities are disclosed to regulators and governing units as required.

- Prepare and file important documents, director registration, Board meeting notices, minutes of the meeting of the Board, IRPC's annual report, invitation to shareholders' meetings, minutes of AGMs, reports on conflicts of interest reported by directors and the management, and other duties as defined by the Capital Market Supervisory Board and related laws.
- Prepare information and reports relating to the Board and IRPC's corporate governance in applying for membership or good corporate citizenship and standardization, at both national and international levels.
- Take responsibility for anti-corruption activities under the policy and measures defined by the Board.
- Acquire information, knowledge and good practices relating to the Company Secretary's responsibilities and corporate governance, at national and international levels, to be applied to IRPC as appropriate. Develop knowledge and understanding and attend training and seminars to keep up with ever-stricter regulations and management directions.
- Provide one-way and two-way communication channels on good governance for IRPC's stakeholders, that is, investors, shareholders, the media and the public.

Ms. Monwipa Choopiban

Position: Company Secretary Effective Dates: January 23, 2012 – September 30, 2518. (Ms. Monwipa Choopiban's profile is shown under Attachment page 56)

Mrs. Peyada Chongpayuha

Position: Company Secretary Effective Dates: October 1, 2018 – present (Mrs. Peyada Chongpayuha's profile is shown under Attachment page 49)

Compliance

IRPC Group has an effective organization structure and tools that support its business operations in line with applicable laws, rules and company's regulations. Besides corporate governance and

risk management systematically implemented since 2003, the Board highly values business in compliance with applicable laws and IRPC's regulations in pursuing its goals with great success and earning the shareholders and stakeholders' trust. It defined a corporate compliance policy of IRPC Group and set up a new unit (Corporate Compliance and Secretary Division), responsible for corporate compliance and corporate secretariat work, while setting up a compliance system and driving a compliance policy to concrete implementation to ensure that IRPC's operations comply with laws and good governance. The unit reports the results to the Board for acknowledgment.

The Corporate Compliance Policy of IRPC Group

To ensure efficient compliance implementation, "The Corporate Compliance Policy of IRPC Group" was announced on November 17, 2015, for the management and employees to comply with relevant laws and regulations as follows:

1. Compliance with relevant laws and regulations

The directors, executives, and employees of the IRPC Group companies are to strictly uphold laws and regulations related to the business operations to ensure smooth conduct in compliance with relevant laws and regulations while maintaining social, community and environment responsibility, and health of stakeholders—the foundation of sustainable development.

2. Fair competition and anti-trade monopoly

The directors, executives, and employees of IRPC Group are to comply with laws on anti-trade monopoly or trade competition, while supporting free and fair commercial competition void of discrimination and unfair practices.

3. Anti-corruption and anti-bribery

The directors, executives, and employees of IRPC Group are to comply with laws on the prevention and suppression of corruption and bribery involving state officers, foreign-state officers, or private-company officers.

4. Upholding of human rights principles

The directors, executives, and employees of IRPC Group are to uphold laws on labor and human rights, while respecting labor rights, women's rights, children's rights, and human dignity as well as the liberty and equality of those certified by or protected under Thai and international laws.

5. Safeguarding of intellectual property rights

The directors, executives, and employees of IRPC Group are to protect intellectual properties of IRPC or IRPC Group, or both, from being infringed without permission. They are to uphold others' intellectual property rights, while promoting their executives' and employees' creativity resulting in intellectual properties in the interests of the company and Thailand's economy at large.

6. Prevention and suppression of money laundering and non-sponsorship of terrorism causes

The directors, executives, and employees of IRPC Group are to avoid becoming part of money-laundering networks or sponsoring terrorism causes. To this end, its values oversight and provision of tips to officers in case of illegal deeds, while ensuring proper recording of accounting entries, and financial or property facts in line with Thai and international laws.

7. Proper management, storage, and application of company data

The directors, executives, and employees of IRPC Group are to exercise good stewardship of data and properties under proper management standards under the law to ensure that they are optimally applied; that harm and abuse are averted for the benefit of oneself or others; and that data confidentiality principles are upheld by adhering to the rules of law and business ethics of maintaining

data of the company, its customers, business partners, or others' private data and not leveraging them for purposes beyond permission or beyond mutual, lawful relations under Thai and international laws.

8. Responsibility for the environment, health, and safety

The directors, executives, and employees of IRPC Group are to conduct business with responsibility for communities, society, and the environment with due regard for the health and safety of employees and stakeholders. They are also to regularly put in place projects designed to cultivate such awareness among employees, executives, and related parties.

IRPC Group values business conduct with respect to laws and regulations. It gives priority to compliance with laws or rules relating to its business operations, recognizing that these would contribute to the achievement of business and sustainable development. The company underlines the importance of communication for all agencies to understand the implementation approaches that comply with laws and rules (Compliance Policy) in line with the compliance scope and good international practices.

The agencies under the management of IRPC are required to perform functions in compliance with the Three Lines of Defense: The first Line of Defense includes all agencies (except the regulators and internal audit), they must be aware of the duty to manage the risk of non-compliance with the law and regulations (Compliance Risk Management) and monitor their functions work in line with the rules defined.

The second Line of Defense is the monitoring unit that performs three main tasks: (1) support and provide assistance to the implementing agencies to realize the risks of non-compliance (Compliance Risk Assessment), (2) broaden the knowledge body by providing a consultation service to the implementing agencies to come up with preventive activities, and (3) monitor, review and report to ensure that irregularities are resolved and not repeated. The Second Line of Defense covers the governance,

risk management, and compliance units. They need to collectively work under the guidance of Governance, Risk Management and Compliance (GRC) to achieve the integration of administrative policies, practices, and information exchange in order to drive the organization toward an integrated enterprise management value (Business Integrity) with integrity and compliance. GRC is considered a constructive tool for the company to provide stakeholders with greater confidence that the IRPC's operations are performed straightforwardly according to the regulations in a transparent and accountable manner.

The third Line of Defense is internal audit, which is an independent body working in tandem with the company's external auditor to review the overall operations, including the First Line of Defense and Second Line of Defense.

Compliance Mission in 2018

In 2018 the Board of Directors approved a Compliance Roadmap to review IRPC's strategic plan (2018 BOD-STs) by setting up the target of "Zero-noncompliance" in pursuing Compliance DNA. IRPC's compliance missions include:

- Dissemination of knowledge, curriculum development and communication channels on compliance:
 - Develop a "Compliance Training Program" in collaboration with HR Management to provide training for everyone through the invitation of experts from outside to enhance knowledge for the management team and staff.
 - Continual development of communication channels on compliance through public relations and education via Corporate Compliance News (CC News), the GCR Column, website and intranet for all in Bangkok office and plant sites.
 - Prepare "Compliance KM" concerning Antitrust, Anti-dumping, GRC, and others, and develop communication channels

through Compliance@irpc.co.th to ease communication between employees and compliance officers.

- Prepare an "Employee Compliance Survey" to enhance understanding, awareness, and address the issues for greater development of compliance. For example, an employee suggested sharing case studies of non-compliance to raise awareness and understanding.
- Open channels for complains (Whistleblower.)
- System development
 - Compliance agency targets the implementation alongside IRPC's five-year strategic plan through the development of the "Compliance Universe Project" as a source of law and regulations information concerning IRPC's operations to facilitate employees' access to information, search and citation more effectively. A "Compliance Online System" was also developed to align with the policy on IRPC 4.0 to evaluate risks of non-compliance in accordance with legal practices (compliance self-assessment), monitoring and reports via the online system to the supervisors. This includes the initiative of a compliance reporting system in line with the law and related regulations (regulatory compliance) for good corporate governance, and risk management committees under the defined scope.
 - Currently, progress with respect to legal registration, collection of legal data, and regulations (over 3,000 criteria) are being completed as planned in the first phase. They are also under the development process of a "Compliance Online System" on the second phase. The completion is targeted by the third quarter of 2019.

Head of the Office of Corporate Affairs

Ms. Monwipa Chooipiban

Executive Vice President, Office of Corporate Affairs
In position: 2015 – September 30, 2018.

Mrs. Peyada Chongpayuha

Executive Vice President, Office of Corporate Affairs
In position: October 1, 2018 - present.

Compensation

Board and Committee Compensation

The Board has appointed the Nomination and Remuneration Committee to consider the compensation guidelines for the Board of Directors and committee members to propose to the Board. The compensation criteria are:

1. The compensation is divided into two portions, monthly pay (retainer fees) and meeting allowance (no other compensation or benefits in other forms, either monetary or non-monetary, are to be paid to the directors).
2. The compensation is based on the responsibilities and performance of the directors and IRPC's own performance, and it should be comparable to peer companies with a comparable size and business risks to attract directors whose qualifications suit IRPC's businesses to be its directors. The compensation criteria surveyed by the Thai Institute of Directors (IOD) and SET are also used in the consideration.

The compensation proposed for 2018 was comparable to the mean of peer companies (monthly/person) according to the survey of directors' compensation 2018 prepared by IOD in December 2018.

3. The scopes of work and assigned responsibilities of the directors and sub-committee members are also considered.
4. The Chairman of the Board and the Chairmans of the committees are entitled to an additional 30% compensation of the other directors.
5. Members of the sub-committees: Audit Committee, Nomination and Remuneration Committee, Risk Management Committee and Corporate Governance Committee. They are entitled only to the meeting allowances for the meetings attended.
6. The compensation of the Board and sub-committee members must be approved by the shareholders' meeting. The 2018 Annual General Meeting, held on April 4, 2018, approved the compensation of the Board and committees at the same rates of those of 2017 as detailed below:
 - 6.1 Board and sub-committees' compensation in 2018 (The compensation rate has been used since 2006).

Directors	Monthly compensation/ person	Meeting allowance/ person
1. Board		
Chairman	60,000 Baht	60,000 Baht
Director	45,000 Baht	45,000 Baht
2. Members of the sub-committees: Audit Committee, Nomination and Remuneration Committee, Risk Management Committee and Corporate Governance Committee and other committees to be established.		
Chairman	-	60,000 Baht
Director	-	45,000 Baht

6.2 Bonuses for Directors

Bonuses for directors correspond with IRPC's performance. The 2018 AGM of April 4, 2018, approved directors' bonuses totaling THB 34 million (0.30% of IRPC's net profit) as proposed by the Nomination and Remuneration Committee. The amount to be allocated to each director varies with meeting attendance. In addition, the Board Chairman will be paid 30% higher than the other directors. Details are summarized below.

The compensation received by each director in 2018 is summarized below:

(Unit: Baht)

	Name	Monthly compensation	Meeting allowance for the Board	Meeting allowance for the sub-committees	Bonus (2017 performance)	Total
1.	Mr. Chansin Treenuchagron ⁽¹⁾	600,484	660,000	135,000	2,105,856	3,501,340
2.	Mr. Woothisarn Tanchai	540,000	630,000	480,000	2,297,297	3,947,297
3.	Mr. Nuttachat Charuchinda	540,000	585,000	360,000	2,297,297	3,782,297
4.	Mr. Somnuk Bomrungsalee	540,000	630,000	780,000	2,297,297	4,247,297
5.	Mr. Anusorn Sangnimnuan	540,000	630,000	420,000	2,297,297	3,887,297
6.	Gen. Sasin Thongpakdee	540,000	585,000	270,000	2,297,297	3,692,297
7.	Gen. Theppong Tippayachan	540,000	405,000	225,000	1,722,973	2,892,973
8.	Mr. Ekniti Nitithanprapas	540,000	585,000	270,000	2,105,856	3,500,856
9.	Mr. Jessada Promjart	540,000	630,000	585,000	2,297,297	4,052,297
10.	Ms. Ruenvadee Suwanmongkol	540,000	540,000	450,000	1,914,415	3,444,415
11.	Mr. Kris Imsang	540,000	585,000	315,000	191,442	1,631,442
12.	Mr. Preecha Pocatanawat ⁽²⁾	153,000	180,000	135,000	-	468,000
13.	Mr. Worawat Pitayasiri ⁽³⁾	153,000	180,000	90,000	-	423,000
14.	Mr. Sukrit Surabotsopon	540,000	630,000	270,000	2,297,297	3,737,297
15.	Mr. Tevin Vongvanich ⁽¹⁾	452,065	480,000	-	2,986,487	3,918,552
16.	Mr. Chavalit Punthong ⁽⁴⁾	45,000	45,000	45,000	2,297,297	2,432,297
17.	Ms. Jiraporn Khaosawas ⁽⁵⁾	279,746	225,000	90,000	-	594,746
18.	Ms. Nantika Thangsuphanich ⁽⁶⁾	457,500	495,000	270,000	191,442	1,413,942
19.	Mr. Songpope Polachan ⁽⁷⁾	-	-	-	2,105,856	2,105,856
20.	Mr. Pramoul Chanpong ⁽⁸⁾	-	-	-	2,297,297	2,297,297
Total		8,080,795	8,700,000	5,190,000	34,000,000	55,970,795

Note:

Apart from the above, IRPC pays no compensation or benefits in any other form to the directors.

1. Mr. Tevin Vongvanich and Mr. Chansin Treenuchagron had reimbursed PTT Plc their director's compensation in compliance with the conditions stipulated in PTT's President Employment Agreement.
2. Mr. Preecha Pocatanawat was appointed director following the resolution of the Board Meeting No. 9/ 2561, with effect from September 19, 2018.
3. Mr. Worawat Pitayasiri was appointed director following the resolution of the Board at Meeting No. 9/ 2561, with effect from September 19, 2018.
4. Mr. Chavalit Punthong tendered his resignation, with effect on January 31, 2018.
5. Ms. Jiraporn Khaosawas tendered her resignation, with effect on August 21, 2018.
6. Ms. Nantika Thangsuphanich tendered her resignation, with effect on November 6, 2018.
7. Mr. Songpope Polachan tendered his resignation, with effect on December 1, 2017.
8. Mr. Pramoul Chanpong tendered his resignation, with effect on December 1, 2017.

Top Management Compensation

The President's compensation is designed under clear, transparent, fair and reasonable principles, taking into consideration his duties and responsibilities and IRPC's performance. The Nomination and Remuneration Committee considers the compensation and proposes it to the Board for approval.

The process is as follows:

1. The Nomination and Remuneration Committee proposes the compensation component and criteria to the Board for consideration in January.
2. After the approval of the Board, the President is informed and acknowledges the decision.
3. The Nomination and Remuneration Committee assesses the results of his performance based on the criteria approved by the Board, and assesses his performance by taking into account overall components, such as corporate business situations, challenging targets, problem-handling ability, communication skills in emergency situations, social and environmental governance, handling of risky situations concerning good governance, and promotion of good corporate image.
4. In December, the Nomination and Remuneration Committee presents to the Board for approval the President's evaluated performance during the year and proposes his annual compensation adjustment.

In 2018 the Board at Meeting No. 1/ 2018 on January 8, 2018, approved the performance assessment criteria for the President. The criteria were defined to cover challenging targets in accordance with the company's short-term and long-term strategies, both monetary and non-monetary performances, including social, community and environmental responsibility. The President accepted and harnessed his utmost potential in managing the business and leading the organization forward in line with two assessment indicators: corporate KPIs, 70%, and supporting factors that boost transparency and growth of the company, 30%. This includes the ability to lead the

organization and solve problems that affect IRPC and its stakeholders in a timely manner with accuracy and success in order to create a good corporate image and corporate governance.

In 2018 the Board participated in the performance assessment of the President to ensure transparency and fairness that reflect its utmost efforts to drive IRPC for future success. The President's performance was able to satisfy the above two assessment indicators. The President's compensation is standardized in comparison with the same industry. The compensation of the President has been recorded in the Management Compensation report according to the Securities and Exchange Commission's criteria. Details appear in the following section:

Management Compensation

IRPC annually measures management performance at every level under the Performance Management System (PMS), which consists of:

- (1) Key Performance Indicators (KPIs), key missions cascaded down from the corporate level each year in line with corporate goals, performance, and financial performance in line with the duties and responsibility of the management
- (2) Job competencies and desired behavior, a behavioral assessment tool for the management and employees' competencies while performing their work to ensure that IRPC achieve its goals with quality and sustainability.

In 2018, compensation for 18 management members including three management team members who retired or resigned within 2018 under SEC's definition in the forms of salary, bonuses, and contribution to the provident fund, totaled THB 128.03 million as summarized below.

(Unit: Million Baht)

Compensation	2017 (16 persons)	2018 (18 persons)
Compensation		
Salary	77.30	81.45
Bonus	32.08	39.05
Other compensation		
Provident fund	6.87	7.53
Total	116.25	128.03

Director of Subsidiaries (as of 31 December 2018)

1. IRPC Oil Co., Ltd.

Name	Position
1. Mr. Sukrit Surabotsopon	Chairman
2. Mrs. Nidcha Jirametthanakij	Member
3. Ms. Wanida Utaisomnapa	Member
4. Mr. Vichit Nittayanonte	Member
5. Mr. Chalemchai Somboonpakorn	Member
6. Mr. Somkiat Lertritpuwadol	Acting Managing Director

2. IRPC Polyol Co., Ltd.

Name	Position
1. Mr. Sergiusz Stefanowski	Chairman
2. Mr. Sukrit Surabotsopon	Member
3. Mrs. Nidcha Jirametthanakij	Member
4. Mr. Woravuth Sivapetranart	Member
5. Mr. Rafal Zdon	Member
6. Mr. Waldermar Franz Preussner	Member
7. Ms. Soh Bee Hong	Member
8. Mr. Chalemchai Somboonpakorn	Managing Director

3. IRPC Technology Co., Ltd.

Name	Position
1. Mr. Sukrit Surabotsopon	Chairman
2. Mr. Surachai Torapicharttrakool	Member
3. Mrs. Peyada Chongpayuha	Member
4. Mr. Kraisit Anukoolutaiwong	Member
5. Mr. Phothiwat Paopongchuang	Managing Director

4. IRPC A&L Co., Ltd.

Name	Position
1. Mr. Sukrit Surabotsopon	Chairman
2. Mrs. Nidcha Jirametthanakij	Member
3. Mr. Pongprapan Titathavewatana	Member
4. Mr. Toshiro Kojima	Member
5. Mr. Hideyuki Tokimasa	Member
6. Mr. Kengo Shiba	Member
7. Mr. Takayuki Mano	Member
8. Mr. Woravuth Sivapetranart	Member
9. Mr. Vichit Nittayanonte	Member
10. Mr. Somkiat Lertritpuwadol	Acting Managing Director

5. Rakpasak Co., Ltd.

Name	Position
1. Mr. Songklod Chareonporn	Member
2. Mr. Surachai Torapicharttrakool	Member
3. Mr. Vichit Nittayanonte	Member
4. Mr. Somboon Sadsin	Managing Director

6. iPolymer Co., Ltd.

Name	Position
1. Mr. Sukrit Surabotsopon	Member
2. Mr. Somkiat Lertritpuwadol	Member
3. Mrs. Nidcha Jirametthanakij	Member

Position Table of Directors and Executives (as of 31 December 2018)

No.	Name	IRPC PLC	Subsidiaries					Joint Venture	Associated Companies			Related Companies					
			IRPC Oil Co., Ltd.	IRPC Technology Co., Ltd.	IRPC A&L Co., Ltd.	Rakpasak Co., Ltd.	iPolymer Co., Ltd.		IRPC Polyol Co., Ltd.	WHA Industrial Estate (Rayong) Co., Ltd.	PTT Energy Solutions Co., Ltd.	UBE Chemical (Asia) PLC	IRPC Clean Power Co., Ltd.	PTT PLC	PTT Exploration and Production PLC	Energy Complex Co., Ltd.	Business Services Alliance Co., Ltd.
1	Mr. Chansin Treenuchagron	x										/, //	/				
2	Mr. Woothisarn Tanchai	/															
3	Mr. Nuttachat Charuchinda	/															
4	Mr. Somnuk Bomrungsalee	/															
5	Mr. Anusorn Sangnimnuan	/															
6	Gen. Sasin Thongpakdee	/															
7	Gen. Theppong Tippayachan	/															
8	Mr. Ekniti Nitithanprapas	/															
9	Mr. Jessada Promjart	/															
10	Ms. Ruenvadee Suwanmongkol	/															
11	Mr. Kris Imsang	/										//	/				
12	Mr. Preecha Pocatanawaf	/										//	/	/			
13	Mr. Worawat Pitayasiri	/										//					
14	Mr. Sukrit Surabotsopon	/, //	x	x	x		x	/		x	/	//					
15	Mr. Pongraphan Titathavewatana	//			/			/									
16	Mr. Somkiat Lertritpuwadol	//	/, //		/		/	/		/							
17	Mrs. Nidcha Jirametthanakij	//	/		/		/	/*	/		/	/	//				
18	Mr. Thammasak Panyowatkool	//															
19	Mr. Pravet Assavadakorn	//															
20	Ms. Awrapin Ketatanakul	//															
21	Mr. Kraisit Anukoolutaiwong	//		/													
22	Ms. Wanida Utaisomnapa	//	/									/					
23	Mr. Chalor Panutrakul	//															
24	Mr. Veerawat Srinoradithlert	//															
25	Mr. Woravuth Sivapetranart	//			/		/										
26	Mr. Vichit Nittayanonte	//	/		/	/											
27	Mr. Phothiwat Paopongchuang	//		/													/
28	Mrs. Peyada Chongpayuha	//		/													

หมายเหตุ: X = Chairman / = Director // = Management Team * under the registration with Ministry of Commerce

Report on IRPC Shares Held by the Directors and Management

Number of shares held by the directors as of December 31, 2018

No.	Name	(As of December 31, 2017) Shareholding / Number of shares	(As of December 31, 2018) Shareholding / Number of shares	Share increase (decrease) during the year	WARRANT/ NVDR/ TSR/ DW (2018)	Remarks
1.	Mr. Chansin Treenuchagron	-	-	unchanged	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
2.	Mr. Woothisarn Tanchai	-	-	unchanged	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
3.	Mr. Nuttachat Charuchinda	-	-	unchanged	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
4.	Mr. Somnuk Bomrungsalee	-	0.00024% 50,000	0.00024% 50,000	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
5.	Mr. Anusorn Sangnimnuan	-	-	unchanged	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
6.	Gen. Sasin Thongpakdee	-	-	unchanged	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
7.	Gen. Theppong Tippayachan	-	-	unchanged	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
8.	Mr. Ekniti Nitithanprapas	-	-	unchanged	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
9.	Mr. Jessada Promjart	0.00002% 5,000	0.00002% 5,000	unchanged	-	
	Spouse	0.00010% 20,000	0.00010% 20,000	unchanged	-	
	Children under legal age	-	-	unchanged	-	
10.	Ms. Ruenvadee Suwanmongkol	-	-	unchanged	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
11.	Mr. Kris Imsang	-	-	unchanged	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
	บุตรที่ยังไม่บรรลุนิติภาวะ	ไม่มี	ไม่มี	ไม่เปลี่ยนแปลง	ไม่มี	

No.	Name	(As of December 31, 2017) Shareholding / Number of shares	(As of December 31, 2018) Shareholding / Number of shares	Share increase (decrease) during the year	WARRANT/ NVDR/ TSR/ DW (2018)	Remarks
12.	Mr. Preecha Pocatanawat	N/A	-	unchanged	-	New director appointed, with effect from September 19, 2018
	Spouse	N/A	-	unchanged	-	
	Children under legal age	N/A	-	unchanged	-	
13.	Mr. Worawat Pitayasiri	N/A	-	unchanged	-	New director appointed, with effect from September 19, 2018
	Spouse	N/A	-	unchanged	-	
	Children under legal age	N/A	-	unchanged	-	
14.	Mr. Sukrit Surabotsopon	0.04160% 8,500,000	0.04894% 10,000,000	0.00734% 1,500,000	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
Directors who completed the terms/ resigned/ retired during the year						
15.	Mr. Chavalit Punthong	-	-	unchanged	-	Director resigned, with effect from January 31, 2018
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
16.	Ms. Jiraporn Khaosawas	-	-	unchanged	-	Director resigned, with effect from August 21, 2018
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
17.	Mr. Tevin Vongvanich	0.00000% 900	0.00000% 900	unchanged	-	Director resigned, with effect from August 31, 2018
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
18.	Ms. Nantika Thangsuphanich	-	-	unchanged	-	Director resigned, with effect from September 6, 2018
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	

Note:

N/A - information not available since directors' appointment was made after the mentioned period, or the directors resigned or completed the term during the period.

Number of shares held by the management as of December 31, 2018

No.	Name	(As of December 31, 2017) Shareholding / Number of shares	(As of December 31, 2018) Shareholding / Number of shares	Share increase (decrease) during the year	WARRANT/ NVDR/ TSR/ DW (2018)	Remarks
1.	Mr. Sukrit Surabotsopon	0.04160% 8,500,000	0.04894% 10,000,000	0.00734% 1,500,000	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
2.	Mr. Pongpraphan Titathavewatana	0.00203% 414,478	0.00276% 564,478	0.00098% 200,000	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
3.	Mr. Somkiat Lertritpuwadol	0.00145% 295,580	0.00145% 295,580	unchanged	-	
	Spouse	0.00008% 15,900	0.00008% 15,900	unchanged	-	
	Children under legal age	-	-	unchanged	-	
4.	Mrs. Nidcha Jirametthanakij	N/A	-	unchanged	-	New Executive appointed, with effect from October 1, 2018
	Spouse	N/A	-	unchanged	-	
	Children under legal age	N/A	-	unchanged	-	
5.	Mr. Thammasak Panyowatkool	-	-	unchanged	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
6.	Mr. Pravet Assavadakorn	0.00124% 253,600	0.00124% 253,600	unchanged	-	
	Spouse	0.00012% 25,000	0.00046% 95,000	0.00034% 70,000	-	
	Children under legal age	-	-	unchanged	-	
7.	Ms. Awrapin Ketatanakul	0.00045% 92,721	0.00045% 92,600	0.00000% 121	-	Donated to the Saijaithai Foundation
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
8.	Mr. Kraisit Anukoolutaiwong	0.00000% 1	-	0.00000% 1	-	Donated to the Saijaithai Foundation
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
9.	Ms. Wanida Utaisomnapa	0.00103% 210,440	0.00103% 210,440	unchanged	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
10.	Mr. Chalor Panutrakul	-	-	unchanged	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
11.	Mr. Veerawat Srinoradithlert	0.00005% 10,579	0.00005% 10,579	unchanged	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	

No.	Name	(As of December 31, 2017) Shareholding / Number of shares	(As of December 31, 2018) Shareholding / Number of shares	Share increase (decrease) during the year	WARRANT/ NVDR/ TSR/ DW (2018)	Remarks
12.	Mr. Woravuth Sivapetranart	0.00088% 179,351	0.00137% 279,351	0.00049% 100,000	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
13.	Mr. Vichit Nittayanonte	0.00163% 333,394	0.00163% 333,394	unchanged	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
14.	Mr. Phothiwat Paopongchuang	0.00031% 64,320	0.00031% 64,320	unchanged	-	
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
15.	Mrs. Peyada Chongpayuha	N/A	-	unchanged	-	New Executive appointed, with effect from October 1, 2018
	Spouse	N/A	-	unchanged	-	
	Children under legal age	N/A	-	unchanged	-	
Managements who completed the terms/resigned/retired during the year						
16.	Ms. Rachadaporn Rajchataewindra	0.00011% 22,000	0.00011% 22,000	unchanged	-	Executive retired, with effect from September 30, 2018
	Spouse	0.00029% 60,000	0.00029% 60,000	unchanged	-	
	Children under legal age	-	-	unchanged	-	
17.	Ms. Monwipa Chooipiban	-	-	unchanged	-	Executive retired, with effect from September 30, 2018
	Spouse	-	-	unchanged	-	
	Children under legal age	-	-	unchanged	-	
18.	Mr. Sirimet Leepagorn	0.00055% 113,292	0.00202% 413,292	0.00147% 300,000	-	Executive resigned, with effect from September 30, 2018
	Spouse	0.00015% 29,862	0.00015% 29,862	unchanged	-	
	Children under legal age	-	-	unchanged	-	

Note:

N/A - information not available since executives' appointment was made after the mentioned period, or the executives resigned or completed the term during the period.

In 2018 and in the past five years, no directors and management team members have records of wrongful acts under the Securities and Exchange Act B.E. 2535 (1992) or Derivatives Act B.E. 2546 (2003) or any acts regarding:

- (1) Dishonesty or serious negligence.
- (2) Disclosure or dissemination of false information or messages potentially causing misunderstanding, or holding up essential facts that should be disclosed, both of which might have affected the decisions of the shareholders, investors, or concerned parties.
- (3) Unfair acts or taking advantage of investors in the sale and purchase of shares or futures, or being or playing a part in supporting such acts.

Corporate Governance Report



Over the years since its establishment, IRPC has become determined to step up efforts on corporate governance by adhering to good governance principles and SET's Corporate Governance Code for Listed Companies (CG Code) as well as other international rubrics, such as the ASEAN CG Scorecard.

The Company key performance in 2018 is classified into two categories; 1) The excellent key performance and 2) The compliance of SET's Corporate Governance and Code of Conduct.

1. The Excellent Key Performance

1.1 Performance Assessment and Development of Directors

- Every three years, IRPC has Board members' performances assessed by a third party, known as Independent Assessment, the results of which entail a development plan for them. The first Independent Assessment was carried out in 2015 by Governance Matter Thailand (details of which can be found in the 2015 Annual Report). The 2018 Independent Assessment was thus the second time and was carried out by KPMG Phoomchai Business Advisory Ltd., scheduled for completion around May 2019.
- On a yearly basis, IRPC arranges for performance assessment of the Board of Directors and its committees. In 2018, in addition to a review of the assessment form, preparation of the



Board meeting was added as an assessment item in a bid to make Board meetings most effective. (please see details in the Report, page 114-116)

- The Board attended a presentation on "Chemical Industry: Consolidation as a Route to Transformation", given by Mr. Alex de Mur, Principal, Head of WESA/ CEMA for Refining & Petchem Profit Improvement, The Boston Consulting Group. He was an expert in strategy cases for downstream companies or oil and gas companies in refinery and petrochemical businesses around the world.

1.2 Improvement of Policy on Compliance

- The 2018 AGM passed a special resolution on amendment of the articles of association in compliance with Order of the National Council for Peace and Order No. 21/ 2018, dated April 4, 2018, as proposed by the Board. IRPC then arranged for filing the amendment, detailed below, as agreed at the meeting:
 - Section 5, item 31: One shareholder or more, whose combined shares account for no less than 10% of the total common shares, can collectively submit a letter to the Board to call for an extraordinary shareholders' meeting. This can be done any time, but the subject and rationale for calling a meeting must be clearly stated in the letter. In that case the Board must call a shareholders' meeting within 45 days as from the date the letter is received.
 - Section 4, item 22: The Board is authorized for the selection and appointment of the President, who is screened through the process and related rules. The President will also be appointed to sit on the Board as its Secretary.
- Improvement of the CG Handbook to ensure its alignment with the articles of association and ensure its agreement with policies on political neutrality, prevention of money laundering, human rights, anti-corruption and bribery, social responsibility, and prevention of conflicts of interest.

1.3 Promotion of Ethics, Transparency, and Anti-Corruption

- IRPC joined the NACC Integrity Award Contest for 2018, organized by the Office of the National Anti-Corruption Commission (NACC), to learn NACC's best practices. Taking part in the contest can also raise stakeholders' confidence in the corporation's transparency and anti-corruption. IRPC has won a consolation prize for the past two years, and was announced to win the award in early 2019
- IRPC issued an announcement on "Measures to Prevent Conflicts of Interest" to ensure all employees' understanding and adoption of the measures as guidelines for reporting any transaction suspected of conflicts between individuals' interests and those of IRPC. The on-line reporting process has been in operation for several years.
- IRPC encourages executives and staff to receive training on amended and newly issued regulations from in-house and public courses. The training during 2018 included the international law on anti-dumping and Article 123/ 5 of the organic law on anti-corruption B.E. 1999 (2542).



A total 37 business partners attend a talk on
"The Role of Private Sector in Fighting Corruption"

- IRPC values anti-corruption throughout its supply chain. It invited Mr. Kulvech Janvatanavit, CEO of The Thai Institute of Directors Association (IOD) and a director of Thailand's Private Sector Collective Action Coalition against Corruption (CAC), to give a talk for business partners and IRPC employees on "The Role of Private Sector in Fighting Corruption".



Anti-Corruption Day / International Anti-Corruption Day (Thailand)

1.4 The Board's Role to Promote Code of Conduct among Employees

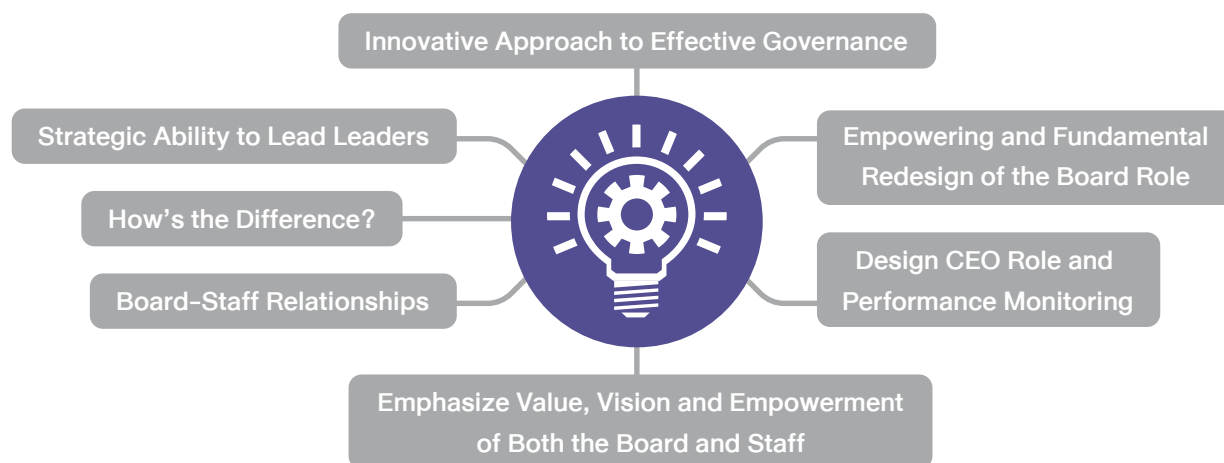


Figure : Board that makes a difference

- The Board has executed the “Board that Makes a Difference” strategy that aims to promote organization values—ethics in particular—while strengthening good relations between the management and staff. Three directors were invited to give a talk on “GRC – Immunity for Working in the 4.0 Era”, namely Mr. Anusorn Sangnimnuan, chairman of the Corporate Governance Committee, Mr. Jessada Promjart, member of the Audit Committee, and Mr. Sukrit Surabotsopon, member of the Risk Management Committee. Providing different views by each, the talk guided staff to get prepared for the digital age with efficiency, transparency, and cautious foresight for risks, as well as to get ready for scrutiny to reach further development.



The talk on “GRC – Immunity for Working in the 4.0 Era”

1.5 Promotion of Human Rights in Doing Business

- IRPC promotes business conduct with respect for human rights, one of the four main principles of the UN Global Compact. It has also sought ways to seriously and continuously implement the principles since 2015 to make IRPC a business entity that conforms to international principles. In 2018, IRPC invited Dr. Seree Nonthasoot, Representative of Thailand to the ASEAN Intergovernmental Commission on Human Rights (AICHR), to give two talks. One was for the Board, the management, and staff on “Human Rights in Doing Business in the 4.0 Era”, and the other was for business partners and staff on “Human Rights in the Petrochemical Business”. IRPC expects that his views expressed in both talks would be nurtured in executives and staff as well as all stakeholders, which will not only result in doing business without violating human rights but will also promote respect for human rights, as valued by the public sector.



Talks Given to the Board, Staff, and Business Partners on “Human Rights in Doing Business”

1.6 Development of Corporate Governance System

- At IRPC, the corporate governance system has been made fully compatible with other systems. In 2018 the Company applied for the assessment of enterprise-wide “Total Quality Assurance (TQA)” and was certified at the TQC level in early 2019.
- IRPC has also been included on the DJSI for five consecutive years and became the leader of the oil and gas refining and marketing, the crowning achievement for 2018. Good corporate governance is a category that underpinned IRPC’s success for the code of conduct, corporate governance, and social report.

2. Compliance with Corporate Governance of the listed companies in 2017 of The Stock Exchange of Thailand

In the operation of corporate governance of the Company, the Board of Directors assigns Corporate Governance Committee to scrutinize, consult and advise on corporate governance to ensure that the Company operates carefully by following the corporate governance policy and plan set forth in the beginning of the year. Annually, the Corporate Governance Committee will propose the operation plan mentioned above to the Board of Directors for approval.

The Corporate Governance Committee reviewed the previous guidelines as well as applying the corporate governance principles of the listed companies in 2017 of The Stock Exchange of Thailand (CG Code) to its business context. The meeting of the Corporate Governance Committee was held at least once per quarter. For any practices that still cannot be implemented, the reasons were recorded as part of the Board’s resolution. (please see details in the Corporate Governance Report, page 243-257).



Corporate Governance plan mentions various activities of IRPC throughout the year that promote corporate governance. The primary objective is to supervise and operate to ensure that the Company is transparent and personnel at all levels are ethical in conducting business. In addition to creating business value-added, it is also responsive to the expectations of all groups of shareholders and stakeholders, fairly and appropriately and able to adapt to the changes of business conditions as well as having a good relationship with those around by adhering to the six essential principles of corporate governance which are: C-R-E-A-T.

C - Create long term value	Create sustainable value-added for stakeholders that can compete and adopt
R - Responsibility	Organization and personnel are responsible for conducting business
E - Equitable treatment	Equal and fair treatment of stakeholders Accountability Sense of accountability and be able to explain what can proceed
A - Accountability	Being accountable for his own decision and action. Such decision must be explainable.
T - Transparency	Good governance and transparency
E - Ethics	Operating business with ethics and code of conduct



IRPC reported the progress on a quarterly basis to the Corporate Governance Committee and the Board of Directors respectively. The Board of Directors provided opinions, suggestions as well as support to the management team to enhance the level of corporate governance of the Company to be better and stronger constantly and to find the measures to correct the weakness as much as possible. With reference to the recommendation or standard criteria of the Securities and Exchange Commission (SEC), the Stock Exchange of Thailand (SET), IOD, ASEAN CG Scorecard, DJSI and other international standards.

The Board of Directors gave priority to their performance, roles, duties, and responsibilities to safeguard the interests of all group of shareholders and stakeholders. The Board of Directors set effectively appropriate business operation directions and strategies including considering, examining and supervising business operation to be transparent and progressive, which is the basis of sustainable growth. The summary of the performance of the Board of Directors and the operation of the company according to the corporate governance principles of the registered companies in 2017 of the Stock Exchange of Thailand (CG Code) are as follows:



Code of Conduct 1: Realizing the roles and responsibilities of the Board of Directors as the leader of the organization that creates sustainable value for the business.

- **The Board of Directors adheres to the principles of conducting business with sustainability** taking into account the creation of value-added and the economic growth in response to the society and environment. By being a role model in performing their duties and conveying such principles to the President, to the management team and to the lower levels respectively, to be implemented in the same direction throughout the organization and set up a system to report various operational results at the Board of Directors' meetings regularly.
- **The Board of Directors defines corporate governance policy** to be used as practices for employees at all levels of the Company from the Board of Directors, executives, employees and all groups of stakeholders. The policy is publicized on the Company's website. The directors and executives should perform their duties with prudence, responsibility and honest to the organization, comply with the laws,



regulations and the resolution of the shareholders' meetings. IRPC has prepared CG handbook together with the Code of Conducts in business operations and distributed to the directors, executives and employees to endorse and use as a model in performing their duties and supervise the communication of the policy to increase understanding. Also, there were activities organized to raise awareness in accepting and complying with the policy throughout the organization, creating a network to drive the practices in business partners as well as supply chain, and alliance companies, with the participation from the Board of Directors and executives

- **The Board of Directors set the roles of directors in Director Charter and Sub-Committee Charter** in accordance with the laws, regulations and Corporate Governance handbook of the Company. Besides, the Board of Directors also adequately supervised to ensure the adequate structure of the Board and determined remuneration structure of the President and the employees that motivate them to comply with the main objectives and goals of the organization set forth.
- **The Board of Directors determines that the directors, executives, employees must comply with business ethics** and establishes as the corporate culture, by adding to the Business Code of Conduct for directors, executives and employees of IRPC. The guidelines for promoting compliance with business ethics are disclosed to everyone and the Board regularly monitor the compliance as specified in the corporate governance plan. There is a clean

division of the scope of duties and responsibilities of directors and the Management. The Board of Directors gives authority in writing to the President to operate the Company within the extent set forth.

- **The Board of Directors reviews and determine the vision, mission, direction and strategy of the Company** to encourage the executives and employees performing work with responsibilities in the same direction. The framework and authority in operation are determined to be suitable with the duties of the Management without interfering on any decisions made under the scope of the Management.
- **The Board of Directors approves the main goals of the organization (Corporate KPI) and the annual budget of the Company** to ensure sufficient resources in operating the business to achieve the primary goals.
- **The Board of Directors approves significant investment projects** in the Board of Directors' meetings every month. The Board of Directors approved the operations and major investment projects of IRPC, that is beyond the authority of the Management, including considering and approving matters that require the shareholders' approval. Details of the projects and performance results of the year 2018 is shown in the Annual Report, Operating Result Report, page 168-191.
- **Management Structure:** The Board of Directors approves the management structure of IRPC to ensure the efficiency, adequacy, and suitability for the management under the leadership of the President. In 2018, a new organization structure was approved. For example, the duties of the three Executive Vice Presidents were combined together and formed a new position - Senior Executive Vice President, Corporate Strategy. As a result, the Company has four Executive Vice Presidents, from the previous three. The Executive Vice President has been downgraded to create greater connectivity and support for the overall performance, to achieve the Company's vision and goals. (for more details, please see the Organizational Structure, page 38).

Code of Conduct 2: Determine the main objectives and goals for the sustainable business

- The Board of Directors determined primary objectives and policies in line with the vision, mission, direction, and strategy of the Company,** such as Social Responsibility Policy, Compliance Policy, Human Rights Policy, Community and Environmental Policy including financial goals and other plans of the IRPC. Besides, the Board monitors the ensure the Management's regular compliance with the policies and plans set forth. The Management must report significant performance results in the meetings of the Sub-Committees and the Board of Directors on a regular basis to ensure that the Executives will be able to implement the vision, direction and strategy set forth in managing the organization to achieve effective results, to create value for the business, customers, stakeholders, and society as a whole. The Board of Directors reviewed the vision and strategic plan both the short-term plan of 1 year and the long-term plan of 5-10 years. The Company's missions are reviewed by using the information proposed by the Management on an annual basis in the Strategic Thinking Session (STS). In the meeting to develop strategy, STS, as mentioned Board of Directors inquires more information from the senior management until they can gather enough information for decision making. In preparing a strategic plan, there is a thorough analysis of internal and external factors In 2018, there is IRPC 4.0 strategic plan, which brings new innovative technologies to support all aspect of the operation of the Company.
- Board that makes a difference strategy:** The Board of Directors follows the 'Board that makes a difference strategy' which is the best practice of directors that helps support IRPC to develop steadily and sustainably. This strategy consists of creating of effective corporate governance, reviewing the proper design of the board structure, creating mutual value between the Board and management team, having strategies that can guide executives, setting of roles and assessment of the President and creating good relationships between directors and the employees

Code of Conduct 3 : Promoting effective Board of Directors

- The structure and qualifications of directors:** The Board of Directors can perform their duties and use their discretion freely and with all their ability. The shareholders' meeting approved the structure of the Board of Directors to consist of between 5-15 members which is appropriate for the size and complexity of the Company's business to operate effectively. The Board has one executive member who is the President. An Independent Directors' meeting and a meeting without the attendance of the executive directors is also another way that allows directors to freely express their opinions and give suggestions to the Board of Directors and the Management to implement for the benefit of the Company. Structure and qualifications of directors can be found in the Annual Report in the section Directors, page 72-77 and scope of the duties and responsibilities, TheBoard of Directors' meetings, and Sub-Committee's meetings can be found in the section Management Structure, page 81-90 Director's remuneration is in Management Structure page 99.
- The Board of Directors selects a person that is suitable for being Chairman of the Board of Directors.** The Board of Director's meeting No. 8/2018 passed a resolution to select Mr. Chansin Treenuechagron, a director to be the Chairman of Board of Directors from 31 August 2018 onwards replacing Mr. Tevin Vongvanich who resigned due to his retirement from Chief Executive Officer and President of PTT Public Company Limited under the contract term. The decision is based on the knowledge, ability and experience in the business operation. Mr.Chansin Treenuechagron, currently holding Chief Executive Officer and President of PTT Public Company Limited - the major shareholder of the Company, is qualified to be the Chairman of the Board. In addition, with the views of the top Executives of PTT, consisting of petroleum and petrochemical companies within the industry similar to the company will benefit from the setting of the IRPC's direction and business strategy to grow with stability. It will bring about benefits to shareholders as well as when

Mr. Tevin Vongvanich, former Chairman of the Board of Directors held the position. Although both of them are not qualified as independent directors, the independent directors account for half of the total number of directors. Roles and duties of Chairman of the Board are shown in Management Structure, page 72 – 77, 81.

- **Holding positions in the listed companies:** The Board of Directors determines that directors cannot hold a directorship in more than 5 companies being listed in the Stock Exchange of Thailand (including IRPC) in order to have sufficient time to effectively perform their duties and be able to allocate time for attending the Board of Directors' meeting and Sub-Committees' meeting, to consider various agenda in an effective manner.
- **The Term of Office of directors:** The Board of Directors sets a term of office for directors and independent directors for no more than 3 consecutive terms (9 years).
- **Supervision of the operations of the Company, subsidiaries and associates:** The Board of Directors establishes guidelines for supervising of the business operation of the Company and 6 subsidiaries in a total of 6 entities, to be able to follow up with the progress and control significant operations through clear channels.
 - The Board of Directors must approve a representative of the IRPC who will work as a director or executives of the subsidiaries or associates. (Details of Business Structure and Shareholding, page 134)
 - A representative of the Company who is a shareholder of a subsidiary and associates shall exercise the right to vote in the shareholders' meeting in accordance with the rules and regulations of the subsidiaries, associates and under the authority framework approved by the Board of Directors.
 - Management mechanism of subsidiaries and associates: The business management must be consistent with the Company's primary policy; related transaction must proceed under marketing price and with fairness; the report of conflicts of interest must be accurate, complete, transparent and can be verified according to the principles of corporate governance.
- Critical business decisions must be approved by the Management Committee of IRPC Public Company Limited first. Then the President, as the Secretary to the Board of Directors will consider proposing to the Board of Directors the matter that fall under the authority of the directors or to be acknowledged by the Board of Directors.
- The announcement of various operating policies of IRPC shall apply to all subsidiaries including policy related to the Corporate Governance, Compliance, Anti-Corruption as well as the World Citizenship and Human Rights which is applied in all IRPC Group. The office of Corporate Affairs is responsible for presenting and receiving policies or recommendations from the Board of Directors to apply to IRPC's business operating efficiently.
- IRPC does not provide financial assistance to the companies that are not its subsidiaries. There is no cross-shareholding in the Company Group and there is no repurchasing the company shares.
- **Performance assessment of the Board of Directors:** The Company conducts a performance assessment for the Board of Directors to use the result in development planning. There are 2 types of assessment as follows.:
 1. Independent Assessment is conducted regularly every 3 years. In 2018, the independent assessment was conducted by KPMG (expected to be completed around May 2019).
 2. Internal Assessment: The Board of Directors and Sub-Committee conducted their performance assessment every year and report the result to the Corporate Governance Committee and the Board of Directors, respectively. The assessment result is used as a benchmark in monitoring the operation within a past year, whether it is adequate, following the scope of authority and in accordance with the principles of corporate governance. Consequently, the reference will be used for improving purpose in the following year. Summary of the assessment result are as follows:

1. Performance assessment of the Board of Directors for the year 2018, an average score was **96.55 %** (In 2017, an average score was 97.27%)

Assessment topic	score
Structure and Qualifications of the Board	97.35%
Roles and responsibilities of the Board in determining business policy	96.62 %
Practice guideline of the Board	95.36 %
Meeting of the Board	96.86 %

2. Individual assessment results

- Self-performance for 2018, an average score was **97.25 %** (In 2017, an average score was 97.73 %)
- Performance of other board members (crossover) in 2018, an average score of **99.23%** (In 2017, an average score of 98.48%)

Assessment topic	Self assessment score	Crossover assessment
Qualifications of directors	96.86 %	99.14 %
Responsibility for one's own decisions and actions, the ability to explain such decisions.	98.57 %	99.29 %
Responsibility for performing of duties through sufficient capability and efficiency	96.29 %	99.00 %
Equal and fair treatment to stakeholders and the ability to explain	97.14 %	99.52 %
Transparency in operation that can be checked and information has been disclosed	97.86 %	99.47 %
Having a vision in creating value-added for the business in the long term	94.29 %	98.34 %
Adhering to morality/ code of conducts	99.76 %	99.34 %

3. Performance Assessment of the Audit Committee

- 3.1 Performance Assessment of the Audit Committee by Chairman of the Board for the year 2018, an average score of **100 %** (in 2017, an average score of 100%)

Assessment topic	score
Independence in performing duties	100 %
Review of financial statements	100 %
Consideration of connected transactions	100 %
Review of internal control systems	100 %
Review to have the Company assess risks	100 %
Review of Compliance with SEC and SET Criteria IIa: ๓๓๓.	100 %
Performing other tasks as assigned	100 %
Reporting performance results to the Board of Directors regularly	100 %

3.2 Performance Assessment of the entire Audit Committee in 2018, an average score of **100%** (In 2017, an average score of 100%)

Assessment topic	score
Structure and composition of the Audit Committee	100 %
Roles and responsibilities	100 %
Relationship with internal auditors and the auditors	100 %
Relationship with Management	100 %
Reporting	100 %
Quality control	100 %

3.3 Performance Assessment of the Audit Committee member individually in 2018, an average score of **94.42%** (in 2017, an average score of 97.38%)

Assessment topic	score
Business knowledge	86.11 %
Expertise in performing duties	97.22 %
Authority and duties assigned	94.44 %
Independence and fairness	100 %
Understanding of duties and responsibilities	95.24 %
Performing work and meeting	93.52 %

4. Performance Assessment of Sub-Committees in 2018

- Nomination and Remuneration Committee, an average score of **98.23%** (in 2017, an average score of 98.54%)
- Corporate Governance Committee, an average score of **98.97 %** (in 2017, an average score of 96.44%)
- Risk Management Committee, an average score of **99.55 %** (in 2017, an average score of 99.27%)

Assessment topic	Nomination and Remuneration Committee	Corporate Governance Committee	Risk Management Committee
Board structure	96.67 %	100 %	100 %
Board policy	97.50 %	97.86 %	98.75 %
Practice guideline of the Board	98.75 %	99.29 %	99.44 %
Preparing and conducting meetings	100 %	98.25 %	100 %

5. Assessment of effectiveness in preparation of the Board meetings in 2018, an average score of **98.15%**, an increase from 2017, at 97.20 %

Assessment topic	score
Preparing the meeting	98.15 %
Meeting procedures	98.15 %

- **Orientation for new directors:** IRPC arranges an orientation for new directors to pass on knowledge and understanding of its business and rules to support effective performance. The orientation will be provided once the new directors take their position, before the next Board of Directors' meeting, which should not be more than one month. Details of the orientation consist of:

- The President provides a briefing of the Company's information by himself every time. That information includes a vision, policy, organizational structure, overview of the business operation, operating result and other relevant data to enhance knowledge and understanding about the business to the new directors. The briefing takes at least one hour and the new directors are allowed to raise questions at an unlimited time.
- The Company Secretary prepares the Director's handbook and documents for new directors, consisting of Director's handbook of the listed companies, book 1 – book 3 (Director's Handbook), Corporate Governance Handbook, Code of Conduct, Compliance Handbook, Certifications, Objectives and Regulations of the Company, list of directors' name, duties of Sub-Committees, minutes of the Annual General Meeting of Shareholders in 2018, Board of Directors' Meeting (the year 2018) and minutes of the Sub-Committees' meetings that the new director is a member of, Annual Registration Statement, (Form 56-1), Annual Report 2017, Sustainability Report 2017, Training Course of the Thai Institute of Directors Association (IOD), Schedule of Board of Directors' Meetings of 2018 and introduction on how to use the data from Website IRPC Board Portal which is the formal communication channel for Board of Directors.

- **Development knowledge for directors:** IRPC encourages directors and executives to participate in seminars that are useful in performing their duties either in business management, industry, corporate governance, anti-corruption, roles and responsibilities of directors and Sub-Committees. All directors attended the basic training course on the duties of directors, (details are appeared in the Directors profile, page 24 – 37).



- **The Company Secretary:** The Board of Directors appointed the Company Secretary to ensure that he or she has the necessary knowledge and experience to support the Board's operations and assure that the operation of the Board of Directors is going smoothly and the directors can have access to all information necessary for effective decision-making. However, before or during the meeting, if the directors need more information for consideration, the Company must have all that information ready.

In the meeting No. 9 /2018, the Board of Directors appointed Mrs. Peyada Chongpayuha as the Company Secretary from 1 October 2018 onward, to replace Miss Monwipa Choopiban who reaches her retirement age. Details of the Board of Directors' meeting can be found in the Management Structure, page 94 – 95.

Code of Conduct 4: Nomination and Development of Senior Executives and Personnel Management

- **Nomination of Senior Executives:** The Nomination and Remuneration Committee is responsible for recruiting individuals who possess suitable qualifications, knowledge, and skills to present to the Board of Directors to appoint as a President and the directors, according to Article 22 of Company's regulations. The nominated person must be experienced, with suitable knowledge and understanding in petroleum and petrochemical business, having a good image, leadership skill and behave under the corporate governance principles. Details can be found in Management Structure, page 72 – 73, 83 – 85. Nomination of Senior Executive Vice President and significant changes in the organizational structure must be approved by the Board of Directors.

- **Performance Assessment:** The Nomination and Remuneration Committee assesses and determines compensation of the President. The matter is proposed to the Board of Directors for consideration and approval of the assessment guidelines and methods of calculating the remuneration in January 2018. At the end of December 2018, the Nomination and Remuneration Committee summarized the assessment of the President's performance according to the defined guidelines as presented to the Board of Directors for approval. Details of the assessment can be found in the Management Structure, page 100 – 101.
- **Criteria for other positions of the Executives:** The Board of Directors determines that the President can hold a position at the other companies or academic or social positions of other institutions after the approval from the Board of Directors. Meanwhile, the Senior Executives must be approved by the President. However, this does not include the appointment of directors in the affiliated companies or joint ventures according to the number of shares held, as per the agreement between the shareholders, which is defined as the authority of the Board of Directors.
- **Succession Plan:** The Board oversees the HR Management plan and succession plan. In 2018, the Company improved the system of succession plan together with international consulting companies in order to make the planning process more efficient to prevent any gaps in the operations and affect the efficiency of operations.
- **The Board of Directors understands structure and relationship of the shareholders** as well as those with conflicts of interest, which may affect the business management and operation and also establishes a system for considering relevant matters clearly and in accordance with the laws. For example, connected transactions or guidelines for directors who abstain from voting or leaving the meeting room during the consideration of the agenda with interest. Details of the making connected transactions can be found in the section Connected Transactions, page 159 – 162.
- **Personnel management and development:** IRPC has in place an appropriate incentive process for employees in term of money, growth, recognition, expressing of opinion and participation in important projects, etc. and the also has intensive personnel development under the strategy 'Power of People' - one of the main GDP strategies for sustainable growth as follows:
 - **Aimed at building the capacity and engagement of personnel at all levels** by means that the entire organization following Integrated HR Management practice, create a corporate strategic plan 'Power of people' by bringing core competencies, challenges and strategic advantages to analyze and assess the needs for capacity and workforce including organizational structure, recruitment and personnel development process linked to the performance assessment process and progress in the career management process. In addition, there is a process to explore satisfaction and strengthen engagement with the organization and the method of enhancing corporate culture in which all operations are connected.
 - **Workplace Environment:** IRPC creates the work environment to ensure health, safety, and ease of access to the workplace of personnel as follows: 1) Establish policies by studying laws, regulations and government announcements as well as relevant international standards such as TIS/OHSAS 18001 accreditation, implementation of Operational Excellence Management System (OEMS) in management of security, safety, health and environment (Security, Safety, Health and Environment: SSHE Element) to use as management system. SSHE raises safety awareness to cultivate a good safety culture throughout the organization, establishes a health risk assessment (HRA) to assess the health risks of the personnel working in contact with risk factors that may be harmful to their health and brings this result of the risk assessment to plan for the controlling of the personnel's health risks. Also, the creation of preventive and communication

measures for those involved including reviewing health risks annually. In the management of security and emergency, there is an establishment of the Emergency Control Center (ECC) of the factory to be on guard 24 hours a day.

- **Build engagement and assess the performance of the personnel.** The Company defines the corporate culture with the objective to change the behavior of staff in the organization. It believes that if all personnel behave according to the values set by the organization, then this will be the driving force for the organization to have a management system that is geared towards excellence and achieve business goals.

The Company defines iSPIRIT as a value and determines IRPC DNA as a desirable behavior for the Executives (Vice President) to become the IRPC DNA Role Model for personnel, to implement and change behavior until it becomes a corporate culture which will affect good performance and the engagement of personnel. The Company determines that behavior assessment is part of the annual performance assessment; all staff must demonstrate excellent performance. For example, the Company gives a reward to those who reach the defined target, to stimulate behavior of focusing on results (R: Results Orientation), both in terms of money and praise as well as sincere behavior honest communication (N: No Bias). In addition, a communication channel is also provided to personnel, to encourage open dialogue by allowing personnel at all levels to have Feedback to the Company via the Team Mate system. Give opportunity for staff to provide suggestions, opinions and participate in goals setting through various activities, agency meetings as well as conveying the goals from the organization level to the individual level in the CEO Town Hall. Also, using behavior in keeping promise P: Promise and deliver to achieve good results and stimulate the engagement of personnel by requiring supervisors and subordinates to review their performance, acknowledge comments on improving performance and talk about career advancement opportunities in the style of One on One Dialogue at least 2 times per year.

- **Personnel and leader development:** The Company enhances knowledge and skills of personnel to be in line with core competencies, the need of organizations that response to strategic challenges, action plan and the needs of staff by dividing the set of knowledge and capacity of personnel into 3 parts, consisting of:

- 1) Knowledge about the organization and work standards (Organization Knowledge)
- 2) Professional knowledge (Work Competency) such as production, marketing, and engineering techniques etc.
- 3) Leadership and Business Knowledge (Leadership Competency) Consists of 4 crucial areas of knowledge such as Self-development, Business Administration, Leadership, and Change Management.

The Company also establishes Personnel Development Committee in their profession and the Executive Development Committee to prepare for future leaders and review the knowledge that is necessary for the organization and business and consider certifying the results of various competencies of personnel of all departments, as follows:

- **Knowledge management:** High-level Executives continue to drive process and organization improvements in accordance with the Operation Excellence Management System (Operation Excellence Management System: OMES) as well as the exchange of knowledge between personnel. By reviewing the knowledge management process (KM) and establishes a knowledge management unit (Knowledge Management) to increase efficiency and effectiveness of knowledge management which includes seeking of knowledge, gathering of knowledge both Explicit and Implicit Knowledge from various sources such as customers, suppliers and partners and emphasize the collection of knowledge from the personnel who are retiring as well.

Corporate leaders and executives in all levels have motivated and participated in knowledge development of personnel and the organization to disseminate and promote the knowledge in real practice and to improve, invent innovation and create value to the Company. The body of knowledge gathered from customers, suppliers and partners, for instance, new products, new technology and raw materials, researches and innovation are scrutinized by CoP Leader and Experts to analyze feasibility on how to create and enhance corporate potentiality and to define level of the body of knowledge. The Company has in place a way to encourage its personnel to take part in knowledge management by giving praise to those who have the highest performance score of creating and

sharing the body of knowledge in the presence of the entire organization to mark out a good example. The Company allows personnel to share the knowledge to the third party through Block-chain technology and stimulate the cumulation of knowledge for applying in real life and to develop into a new experience. The executives will be monitoring and encourage the person to use education to enhance work performance. For instance, rewarding those who carry out knowledge in a way that creates corporate value, e.g., in the steam and combined power plant (CHP1), the knowledge about power plan and steam power plant is passed on to CHP2 to select high efficient equipment, saving 203 million baht per year.



Code of Conduct 5 Promote innovation and business operation with responsibility

Promotion of innovation

Research and business development strategy

Creating value for business and society is the high priority of the Board of Directors. In order to set a corporate strategic plan, the business model is scrutinized from comprehensive studies, researches, and developments, as well as the situation of the world and in the country. In 2018, there were new business projects initiated under GDP strategy, in the Power of the Growth.

Production innovation

The Company invests and determines to develop product innovation, production practice, and related services continue to maintain the quality of consumers' life, to create a useful body of knowledge

and to make progress to industries and business under our supply chain which will eventually result as a positive impact on the society. In 2018, there were many essential innovation matters.

- the investment in innovation center to support personnel and modern equipment in response to the change of business scenario,
- a research on product development with an aim to add value and to make an environmental-friendly product
- an enhancement of energy utilization in production process to save natural resource, the control and preparation of integrated action plan using IT/Digital system to enhance production management efficiency and use of resources efficiently, the enhancement for competitiveness, the improvement in production process, also to raise awareness on responsibility toward society and environment and to add them as a part of GDP Strategy, in Power of Digital.

Details are shown in the annual report Research and Development for Excellence, page 187-191 and Performance Summary page 169-186.

Social Innovation

The Board of Directors promoted the invention of innovations to implement projects that are beneficial to society, community and environment where the society and community will take part together. For instance, Community Health Promotion Fund Project, the project background is as follows.

IRPC had discussed with the community and government agency in Rayong about direction of business operation and project scope that will generate the utmost benefit living in harmony with the community, mitigation of impacts on the community and environment as a result of the maintenance or production process from time to time and the benefits that the community will receive regarding comprehensive health care. The discussion resulted in a conclusion to establish “Community Health Promotion Fund Project, by the Community” for promoting community health for the resident living

within 5 kilometers around the IRPC Eco-Industrial Zone. The fund will be managed by the community through 20 members of a commission and maximum 9 consultants with term of office not over 2 year, maximum 2 consecutive terms. The officials and staff from the Company will be a consultant. The Company allocates budget to support the fund by 6 million baht annually.

In 2018, the Commission of Community Health Promotion Fund approved 41 projects, covering 8 locations, representing a benefit for approximately 100,000 people. For instance, the purchase of medical supplies and equipment to bed-ridden patient, chronic patients and terminal patients in the community of Tapong and Tagma sub-district, Risk Screening and Monitoring on Breast Cancer and Cervical Cancer, Obesity and Stroke for community of Ban Lang sub-district, Service Enhancement Project for Health Promotion Hospital of Ban Nong Tabaek Village, Takhan sub-district, and the purchase of Portable Electric Defibrillators (AED), Ban Laeng Sub-district. Details of the social innovation is shown in Corporate Social Responsibility Section, page 221-227.



Conduct business with responsibility

According to the Company's philosophy, the Board of Directors should promote the business operation that adheres to responsibility for stakeholders and society as a whole of which should be appended to the corporate strategic plan of all lines. The Board of Directors should also establish a policy of being a good corporation of the world, remaining neutral in politics, promoting rights in politics, international human rights, refraining from violating intellectual property with target to become a good corporation of the world following the concept of UN Global Company which consists of 4 major principles as follows.

Human rights

- The Board of Directors determined policy on human rights for practice guidance within the organization and IRPC Group. The human right policy is disclosed on the Company's website since 2017 to ensure that our business operation is free of human right violation in any activities, and we bear in mind responsibility for customers, competitors, partners. The process of selecting partners, creditors and guarantee conditions are fair. IRPC does not support the intellectual property violation (copyright, patents, trademarks) of the others and takes due maintenance on information technology, including rights and benefits related to the intellectual property.



- IRPC recognizes the importance of respect to human rights and adheres to the UN framework regarding the protection, respect and remedy in case of human right violation occurs in its business procedures which is consistent to the CSR concept of the Company 'Care, Share, Respect.' Particularly, the communities located around IRPC Eco Industrial Zone which considered as an important stakeholder of the Company is supported with our social innovation through Community Health Promotion Project. Another example is the Plastic Rights, the campaign that promote in various locations the use of plastic- the Company's products with responsibility and efficiency.
- IRPC protects and maintains rights of employees and contractors including compliance to labour law, provision of good working environment, promotion of proper welfares to employees under the Company's Code of Conduct, provision of training course and safety equally among its employees and contractors, preparation of safety handbook during the plant maintenance and supervision to ensure strict compliance. IRPC takes care of all external personnel who entering the plants by following safety rules. The Safety Unit must report safety situation both during working time and out of working time, including complaints from the communities concerning environment in the Management Committee's meeting on a weekly basis to ensure that the decision, remedy and prevention or mitigation will be proceeded on time and properly and to prevent against recurrence of situation.
- IRPC conducts Due Diligence to assess risk of human rights and also establish a measure to cope with such risk properly. Furthermore, there is an assessment and mitigation process set forth for taking care of communities and environment in case they will be affected by activities in the plants. For instance, IRPC establishes a 24-hour complaint channel, assigns staff to investigate an area, identify a cause and seek for a solution immediately, discloses information of an activity that may cause adverse impacts to the public both prior and during work.
- The President and senior executives recognize the importance to resolve all the complaints. In complaint processing, all significant complaint will have at least one step that the Internal Audit must propose the matter to the President to acknowledge and seek for solution. The procedures proceed with fairness and whistle-blowers are under good protection.
- The Company's Personnel regularly attended the lectures and activities related to human rights to learn, understand and pass on the knowledge to other employees, partners and stakeholders and eventually, to generate a concrete outcome that cover the entire loop and to ensure that

everyone practices correctly in line with international standard. For example, in 2017, our personnel attended the Announcement of National Agenda “Human Rights Driving Thailand 4.0 for Sustainable Development” by the Prime Minister; IRPC’s personnel joined the seminar with the ASEAN Intergovernmental Commission on Human Rights (AICHR) in the AICHR Training on Business and Human Right event. In 2018, IRPC took part in the government project and invited a human right expert to give a lecture for its directors, executives, employees and partners. Besides, in the opening ceremony of Lam Sai Yong Model 4th, Si Sa Ket, IRPC also invited justice court expert to give a lecture for the community about human rights and environment under the new constitution of the Kingdom of Thailand. Previously in 2017, the same lecture was arranged in Lam Sai Yong Model 2nd, in Buriram province. These arrangements reflect well of our sincere effort to make social benefits under international principles regarding human right.

Labor

- IRPC has 8 Labor Unions that represent the freedom of the labor in forming a group, and also authorize the right to negotiate in the meeting of the labor commission which will be chaired by the President. The changes of important rules, regulations and welfare for the employees were brought in the discussion stage for mutual understanding and acceptance. In 2018, there were many missions achieved and brought about benefits to employees. For more details, please see Report of Corporate Governance, Personnel Management and Development, page xx Besides, the IRPC has provided various communication channels for employees to acknowledge, express opinions, give suggestions and make a complaint, e.g., Intranet, Teammate Blog and PO Box 35, etc. IRPC does not accept child labor, compulsory labor, and refrains from discrimination in employment and occupation. The recruitment is based on the suitability of working conditions, positions, and safety.

Environment

- IRPC follows good practice on environmental issues, adhering to global standards and even performs more than the law stipulated. The details are shown in the Report of Safety, Occupational Health and Environment, page 228 – 235 and the Sustainability Management, page 236 – 241

Anti-corruption

- IRPC aims to create a culture of honesty and transparency and also focuses on the importance of anti-corruption that cover the entire organization by issuing policy and actual practice. In 2016, the Board of Directors established policy and practice guidance on an explicit anti-corruption namely Anti-Corruption and Bribery to apply to everyone in the entire organization and the Company Group, the No Gift Policy. The Board of Directors also arranged training course with a campaign to raise the right awareness among employees on various occasions.
- The Anti-Corruption is disclosed to the public on the Company’s website and other communication channels. Moreover, the Board of Directors has broadened out the Anti-Corruption network to stakeholders, e.g., the Company Group, joint partner, contractors. Code of practices is also disclosed to the Company’s partners since 2016–2017.
- The Audit Committee determines that the procedures for risk assessment and management is one of the topic for internal audit and the procedures must be controlled, monitored, assessed and reported to the Board of Directors on a regular basis.
- In 2017, the Company received a Re-Certification as a member of Thailand’s Private Sector Collective Action Coalition Against Corruption (CAC) after being certified as a member first time on 4 April 2014. IRPC carried out the direction of CAC strictly throughout the year 2018 and plans to continue the compliance to a long-term organizational strategy. As a result, IRPC received NACC Integrity Award for the year 2018 from the Office of the National Anti-Corruption Commission for the first time. Previously IRPC receives honorable mention for 2 consecutive years in 2016 and 2017.

- The companies in the IRPC Group which are Technology IRPC Co., Ltd. and IRPC Poly All Co., Ltd. were certified as a member of Thailand's Private Sector Collective Action Coalition Against Corruption (CAC) in 2017.

The Board of Directors sets the Whistle-blowing Policy with a channel for reporting clues and receiving complaints within and out of the organization concerning any illegal acts, unethical practice or any behavior that indicate corruption, misconduct of the personnel in all positions and other stakeholders. The Board of Directors also set forth clear, fair and transparent procedures for investigating and inspecting and adheres to the Whistle-Blowing Policy, a policy that set to protect whistle-blowers and relevant witness. The Internal Audit Unit is assigned to supervise procedures and monitoring result, collect information and report the Audit Committee and the Board of Directors on a monthly and quarterly basis respectively. In 2018, there was no violation of the ethical code. Details of complaints and the management are shown in the Sustainability Report

Channel for reporting clues and complaints

- Via electronic mail : auditor@irpc.co.th
- Via regular mail : Chairman of the Audit Committee IRPC Public Company Limited
No.555/2 Energy Complex
Building B 6th floor,
Vibhavadi Rangsit Road,
Chatuchak sub-district,
Chatuchak district,
Bangkok 10900
- Via PO Box. : PO Box 35, Sun Tower
Building Bangkok 10905

Taking into account the role of stakeholders: The Board of Directors places importance on conducting business with responsibility for communities, environment and societies, and therefore, sets in the Corporate Governance Handbook the explicit policy about stakeholders, shareholders, customers, communities, societies and environment. The Board also discloses all policies and good practice guidelines about all groups of stakeholders, e.g., personnel, safety, customers, partners, creditors, environment, shareholders and placing importance on social and environmental development including other groups of stakeholders which include

Shareholders: IRPC creates added value to the business in the long term with aim to generate return on investment, by way of seeking business opportunity, product and service innovation that are in line with the business growth, such as an investment in new projects and development of existing projects, joint venture with business partners in Thailand and abroad.

Community, environment, and society: The Board of Directors establishes as a corporate strategic plan regarding CSR Excellence and Sustainability, factual annual operation plan and clear target. The Board of Directors reports operation progress to the Corporate Governance Committee and the Board respectively on a quarterly basis. In 2018, the Board of Directors determined that the Company shall allocate the budget from 3% of the average profit of the past three years to ensure that the Company will be able to take care of society and environment continuously.

The Board of Directors places importance to the sustainable development under the Global Reporting Initiative (GRI) (please see details in the Sustainability Report 2018) and supports the efficient and cost-effective use of resources. Employees must pay attention and perform their work with awareness on safety and environment, and encourages stakeholders to take part in developing community and society while adhering to and improve the treatment to stakeholders continually. IRPC determines measures and indicators and assigns a unit to be responsible, monitor and report to the Management Committee on such matter on a regular basis to ensure the improvement will be proceeded timely, the unplanned shutdown may affect community environment. However, with the mitigation measures in place plus timely dissemination of the information to the government authority, the community and environmental officers and community relation officer will inspect the area and resolve the issue without delay. Moreover, the accident statistics, absenteeism rate and illness/injury rate of employees including contractors and temporary workers were disclosed in the Management Committee's meeting for safety and hygiene purpose.

Details of Corporate Social Responsibility is shown in the Annual Report, Corporate Social Responsibility Section, page 210 – 227, QSHE, page 228 – 235 and Sustainable Management Section, page 236 – 241.

Employees: The Company has set a fair employment condition for employees, with a policy that provides short and long term compensation, such as reasonable salary and bonus suit to work performance and operating result of the Company. IRPC provides the provident fund for its employees, personnel development plan, succession plan to allow potential employees in preparing themselves for the growth. Besides, IRPC arranges for its employees, the training course about savings management with an aim to improve their quality of life post-employment with the Company.

Customers/ Consumers: IRPC believes that the customers' maximum satisfaction and confidence are crucial. IRPC is therefore committed to offering products with quality and safety through innovations to develop excellent and environment friendly products based on international standards. IRPC is also committed to disclosing marketing data to its entirety with accuracy without holding back or distorting facts, as well as to developing efficient information technology in response to the needs of customers in a timely manner. Its IT system enables it to manage the entire chain of data from purchasing and order placement, payment, work order monitoring, to product delivery. Its obligation also includes services on providing consultation and recommendations, delivering technical solutions, as well as organizing customer relations activities.

Partners: IRPC has in place a policy regarding fair and equal treatment to partners and customers taking into account the utmost benefits of the Company, basing on morality for both parties, avoid a situation that may cause a conflict of interest, compliance with contract terms and conditions, providing true statement and accurate report, complying with conditions set forth with partners strictly. In case IRPC will not be able to comply with any conditions, it must notify partner in advance to seek for the mutual solution. IRPC has transparent criteria for selecting partners.

Competitors: IRPC manages its business under a code of conduct and ethics regarding the treatment of competitors. IRPC has established a control system to ensure that it will not use competitors' trade secret for its own benefit through any dishonest means. IRPC will not tarnish competitors' reputation without factual data and information.

Creditors: IRPC commits to comply with conditions, contract and obligations set forth with creditors strictly whether the objective is about the use of money, repayment, maintenance of collateral quality and any other matters agreed with its creditors. In case the Company is not able to comply with one of the conditions, the Company will notify its creditors immediately in order to seek a solution together based on reasonableness. IRPC commits to maintaining a positive and prolong relation with creditors.

- **Selecting business pattern that cost-effectively utilize the resources:** To prepare corporate strategy and to consider projects in the Board of Directors' meeting, the Board of Directors and the Management took into account the energy-saving, the cost-effective use of resources, selection of proper raw materials, range of production approach that generates high value while results minimal impact to the environment.
- **Adequate allocation of information technology resource:** The Power of Digital Strategic Plan indicates that the Company realizes the importance of the said matters. IRPC conducts risk management, provide data security, and reports progress in the Board of Directors' meeting weekly.

Code of Conduct 6 Oversee to ensure appropriate risk management and internal control

Risk management and internal control

The Board of Directors realizes that importance in raising awareness and recognition of its personnel on the vitality of corporate risk management. To ensure that there is management for the risk that may affect its business operation and achievement of strategic target, the Board of Directors assigns the Risk Management Committee which currently comprises of 4 members to determine policy and scope of risk management, to oversee to ensure that the risk management of IRPC is efficient and effective in acceptable level. The Risk Management Committee reports the result of risk management to the Board of Directors on a quarterly basis. The Board of Directors also assigns the Audit Committee to supervise the internal control system to be consistent to the international standard and good practice.

Hence, to ensure the efficient performance in each operation, the accuracy and transparency of reports, strict compliance with the law, rules and regulations, and to build trust among the Board of Directors, Sub-Committee, including stakeholders, the President have established the Risk Management Committee and Internal Control Unit to oversee to ensure that the risk management and internal control in corporate level, operative level and procedure level achieve the target set forth as specified in the “Risk Management” and “Internal Control”. For more details, please see the Annual Report, Performance Summary page 181 – 187 and the Report of Internal Control, page 57 – 59.

Supervision on the use of internal information:

The Board of Directors sets policy on a disclosure of information and good practice guidance regarding the confidentiality in the Corporate Governance Handbook which stresses that directors, executives and employees shall be caution in keeping confidential information of the Company, using internal information and providing the Company's information to the third party. The Board has in place confidentiality system for the Company which defines levels of confidentiality and restrict access to the Company's information, a policy that forbids that use of materiality of the internal information which has not yet been disclosed for benefit of one's self or the others, including for the securities trading purpose. The use of internal information is described in the Policy on Compliance with the Company's regulations announced effective in 2015.

IRPC determines that all executives and employees and affiliated companies must prepare a report disclosing transactions that may have a conflict of interest with the Company. The report is to submit through online system which has been used for 4 consecutive years. This requirement is additional from the requirement on the report of directors and executives as stipulated by SEC. However, IRPC expects to cultivate among its personnel the performance with transparency, preventing corruption. The result will be monitored to direct improvement approach and to reduce the action against morality. The performance report is submitted to the Corporate Governance for acknowledgment.

Code of Conduct 7 : Maintain financial reliability and information disclosure

Maintain the financial reliability: Realizing the importance of monitoring, planning and controlling financial liquidity to be in line with financial activities, the Company sets performance assessment procedures to prevent significant risks in all aspects under normal and crisis.

IRPC officially met and exchanged information with financial institutions, credit rating institutions three times, attended eight conference calls to define the direction of capital management, to strengthen the organization and to prevent the Company from falling into a situation that is difficult to repay loans to creditors and to set explicit repayment plan within schedule.

Investor Relations Activity, 2018		Times per year
Roadshow to meet investors – 17 times, namely:		
Meet foreign investors (International Roadshow)		6
Meet investors from Thailand (Domestic Roadshow)		11
IRPC Analyst Conference Call (quarterly)		4
IRPC Analyst Meeting (quarterly)		4
IRPC Opportunity Day, 4 times namely:		
With collaboration with the Stock Exchange of Thailand (quarterly)		4
Company Visit (Appointment) 32 times, namely		
Conference Call		6
Company Visit		26
2018 Analyst & Fund Site Visit, 1 time:		
IRPC Site Visit by Morgan Stanley's Client_7 September 2018		1
Set in the City) 1 time:		
“SET in the City 2016” 14# : 15-18 November 2018		1

Dividend policy: IRPC has the policy to pay dividend at least 25% of annual net profit after tax and all reserves as stipulated by the articles of association and by law. The dividend payment is depended on an investment plan, necessity and other reasons as considered appropriate by the Board of Directors. The shareholders' meeting in 2018 approved the dividend payment as proposed by the Board of Directors at the amount of 0.29 baht per share.

Information disclosure and transparency: IRPC emphasizes disclosing important information of the Company regarding the Thai version and correct transparent translation of English version within a reasonable time frame. For instance, Business Structure and Shareholding (in the Annual Report, page 134) Business Operation and Financial Result, Supervision of Business Operation Policy, Audit Procedures and Control are disclosed through the News system of the Stock Exchange of Thailand and the Company's website. The disclosure categorized by information details, following criteria and practice guidelines related to the law, regulations of the Stock Exchange of Thailand and the Securities and Exchange Commission, to ensure that all stakeholders can have access to the Company's information equally. Operations in 2018 are summarized below:

1. Submitted financial reports to the Securities and Exchange Commission/ Stock Exchange of Thailand within due time, without a transaction that the auditor express unqualified opinions.
2. Disclosed complete information in Form 56-1, Annual Report (56-2) and on the Company's website, e.g., financial statement, corporate governance policy and business ethics, social responsibility, annual report, annual information Annual Registration Statement, minutes of the shareholders' meeting, list of major shareholders, news to inform the SET, news from the newspapers, online news and others. Prepared these information into the Integrated Report and sent to shareholders together with the invitation letter to the meeting of shareholders. Investors can study further information on our website: www.irpc.co.th or directly contact our Investor Relation Unit.

E-mail : ir@irpc.co.th
 Tel. : 0 2765 7380
 Fax : 0 2765 7379

3. Disclosed clearly criteria for directors' and executives' compensation in the Annual Report.
4. Clearly disclosed information about shareholding of directors and executives and determined policy that requires directors and executive to make a report as stipulated by SEC and SET.
5. IRPC has no record of the order from the Stock Exchange of Thailand and Securities and Exchange Commission to amend the financial statement.
6. Appointed the auditors upon approval from the Annual General Meeting of shareholders 2018. The auditor's qualifications are not contrary to the criteria of the Stock Exchange of Thailand. The auditor's compensation for the year 2018 was 3,100,000 baht (excluding other expenses required as necessary amounted to 120,000 baht). As for other services the auditor provided to the Company (non-audit fee) in the year 2018 amounted to 4,883,085 baht. Such transaction is not related and/or involved with an interest of the Company, subsidiaries, executives, major shareholders or related person.
7. The Company's financial statement was certified without conditions by the auditor.
8. Disclosed information about directors and executives on the Company's website which include name, position, education, work experience, amount of shares holding in the Company, pictures, directorship in other listed companies and the date of taking the position.
9. Prepared Corporate Sustainability Report 2018 to share management direction and operating result regarding the economy, society and environment using Sustainability Reporting Guidelines of Global Reporting Initiative 4# (GRI G.4) to ensure the information disclosure is in line with international standard. Assessed the adequacy of the content which is consistent with the Core level. Reviewed the report by



hiring an external party to build reliability and sent the report to shareholders together with the Annual Report. Disclosed the report on the Company's website.

10. Prepare Communication on Progress (CoP) to UN Global Compact as a member. Being a member since 2011, IRPC is obliged by the contract to proceed and report operating result under UN Global Compact guidance. Since 2014, the IRPC leverage the report to GC Advanced Level - the highest level of the reports. The Company prepared and published the report on its website and sent the report in e-mail to UN Global Compact's website (www.unglobalcompact.org).
11. Electronic communication: The Company discloses important information on its website: www.irpc.co.th, to present up-to-date information about the company in both Thai and English, including visions, nature of business, financial statements, press releases, shareholding structure, organizational structure, business group structure, information about the Board of Directors and executives, Investor Relations, Company certificate, articles of association, memorandum of association, annual report (available for download), minutes of the shareholders' meeting (available for download), annual registration statement (Form 56-1), presentation document in Analyst Meeting, good corporate governance policy, other activities and information related to business, corporate responsibility, stakeholder care, and operations for sustainable growth.
12. Communicated through printed media, radio, television, activities with stakeholders and other publicity channels, e.g., regular sending of newsletter to shareholders to inform operating result and important activities of the Company.
13. Refrained from disclosing information related to the Company's operating result to investors and securities analysts. IRPC does not accept or provide information to analysts 7 days before the report of its operating effect to the Stock Exchange of Thailand.

Code of Conduct 8: Support the participation and communication with shareholders

Rights of shareholders:

IRPC has policy that supports, promote and facilitate all shareholders of all groups to exercise their right under the law and in compliance with the articles of association entirely by way of attending shareholders' meeting, making decision or vote on important matters, acknowledge operating result of the Company, express opinions and ask questions. In addition to fundamental rights, IRPC allows shareholders to exercise more rights as follows.

Before the meeting

- IRPC allowed that between 4 September 2017 – 31 January 2018, one or more shareholders holding shares of not less than 4 percent of the paid-up capital, can propose a matter to add as a meeting agenda and nominate a person to take director position or to send questions about the Company before the Annual General Meeting of Shareholders for the year 2018. The criteria and procedures of proposing agenda and nominating such person were published on website (www.irpc.co.th). In 2018, there was no shareholder proposed a matter or nominated a person as a meeting agenda.
- IRPC disclosed resolution of the Board of Directors' meeting No. 2/2561 held on 13 February 2018, specifying that 28 February 2018 is a date to list names of shareholders for the right to attend the Annual General Meeting of Shareholders for the year 2018 and for the right to receive dividend payment (record date) pursuant to Section 225 of the Securities and Stock Exchange Act. B.E. 2535 and the Annual General Meeting of Shareholders for 2018 is on 4 April 2018, at 14.30 hrs, Bangkok Convention Center, 5th floors, Central Plaza Ladprao.
- IRPC published an invitation letter for the meeting and supporting document in Thai and English on its website 30 days prior to the meeting date, from 2 March 2018. Also, the invitation letter to the meeting was sent to shareholders via posts 21 days prior to the meeting date.
- Quality of the invitation letter to the meeting of shareholders: IRPC set forth details on meeting agenda, classified clearly by total 9 agenda, with



objectives and reasons supported, opinions of directors and the number of votes as stipulated by law for each agenda to ensure that shareholders will have sufficient information to make a decision on each resolution.

- To appoint directors: The Company provided full information and qualifications of each directly which included name-surname, age, education background, work experience, a number of companies he/she holding position to ensure adequate information to shareholders.
- To approve directors' compensation: IRPC proposed policy of determining all forms of compensation which included monthly compensation, attending fee, bonuses and other benefits as well as criteria on compensation for each directorship.
- To appoint an auditor: IRPC specified details about the auditor which included name, the company, experience, and skills of the auditor, the matters related to the independence of the auditors and auditor's fee. The breakdown of auditor fee and other service fees (if any) were clarified clearly.
- To approve dividend payment: The Company disclosed its dividend payment policy, the dividend payment rate, payment date (19 April 2018 (15 days from the date of approval) together with precise reason and supporting documents as stated in the invitation letter.
- IRPC allows that a shareholder who cannot attend the meeting can vote through proxy holder. The Company nominated 5 independent directors as a choice for shareholders to select as a proxy holder. The proxy form was

sent together with the invitation letter, including clear details about the document, evidence, and advice of submitting proxy which is simple and in line with the law.

On the meeting date

- The Company held the Annual General Meeting of Shareholders on 4 April 2018 at 14.30 hrs. Bangkok Convention Center, 5th floors, Central Plaza Ladprao. The meeting place was convenient for shareholders to travel, whether by private transport or public transport.
- The registration was opened 2 hours before the meeting time. The bar code system was applied to the registration, counting votes and displaying the result to ensure the meeting was proceeded efficiently, timely, accurately and precisely. IRPC provided many facilities including duty stamps for shareholders who submit the proxy form without any charges, for the validity of the document as required by law.
- Chairman of the Board of Directors chaired the meeting, with attendance of all Sub-Committees, directors, and the President. Total of 15 members were attending, representing 100%. The Chairman conducted the meeting in accordance with the agenda set forth in the invitation letter. There was no additional agenda other than listed in the invitation letter. During the meeting, shareholders were allowed to ask questions and all answers were clearly replied. All details were recorded in the minutes of the shareholders' meeting.
- The Company requested an auditor from Deloitte Touche Tohmatsu Chaiyos Audit Company



Limited (Mr. Permsak Wongpatcharapakorn), a legal advisor, (Miss Peangpanor Boonklum), and senior management and the Company Secretary to attend the meeting in order to answer questions from shareholders in the matters related to their duties. The Company also assigned a person to review the counting of the vote in the meeting of shareholders. The two persons who volunteered from the shareholders attending the meeting (Miss Ratchada Klongprong and Mr. Pawaris Posarn). Before proceeding with the meeting agenda, the Chairman explicitly explained to the meeting the procedure of voting for each agenda. The right to vote is equal to the number of shares held with one vote for each share. The voting result was recorded in the minutes of the shareholders' meeting.

- Appoint a director to replace the director who vacates office by rotation: Before considering this agenda, the nominated directors were Mr. Tevin Vongvanich, Mr. Nuttachat Charuchinda, Mr. Chansin Treenuchagron, General Sasin Thongpakdee, General Theppong Tipayachan and Mr. Sukrit Surabotsophon. Shareholders who had interest in this agenda abstained from voting and left the meeting room until the consideration was completed and the resolution was passed, following the good corporate practice. The Chairman of the meeting assigned Mr. Woothisarn Tanchai, Chairman of the Nomination and Remuneration Committee to present detail of this agenda to the meeting and allowed shareholders to vote in electing each director. Each nominated name was presented to shareholders for voting purpose.

- During the meeting, Chairman of the meeting allowed all shareholders an equal right to ask or share opinions under proper time. The related directors answered and clarified to shareholders on each question. All questions and answers, suggestions and opinions were recorded in the minutes of the meeting to acknowledge absent shareholders the details of the meeting.
- The Company arranged the voting procedures, oversaw the ballots collected from shareholders, and reviewed the resolution and voting result from the ballots by using bar code system to process the scores for better performance and time frame. Then all agenda was reported to the meeting and resolutions were recorded precisely in the minutes of the meeting. The number of votes for each agenda were recorded in full details, e.g., agree, disagree or abstained.
- In the Annual General Meeting of Shareholders 2018, the Chairman of the meeting conducted the meeting in accordance with the agenda set forth in the invitation letter. There was no additional agenda other than listed in the invitation letter.

After the meeting

- The Company took the minutes of the meeting and details with accuracy and completeness. List of Chairman of the Board, Chairman of Sub-Committee and executives who attending the meeting, voting procedures, the use of ballots, counting votes, explanations which were materiality, answers and questions made during the meeting, list of shareholders and opinions expressed in the meeting and resolution of the meeting which divided into agree, disagree and

abstained for each agenda clearly, were also included in the minutes of the meeting.

- IRPC submitted the minutes of the shareholders' meeting in Thai and English version to The Stock Exchange of Thailand through SET Portal and also were publicized on its website after the meeting date.
- The Company prepared minutes of the meeting, with complete details as stated in 'On the meeting date' above and other details were described clearly and completely.
- The minutes of the shareholders' meeting which contained full details of the meeting were submitted to the Stock Exchange of Thailand within 14 days to conform with criteria of the Stock Exchange of Thailand and send to all shareholders (via post). The minutes of the meeting also stated that a shareholder who wishes to amend or oppose may response to the Company Secretary within 10 June 2018. Upon such date, if there was no shareholder response, it would deem that the meeting was certified. The Company also sent the minutes of the meeting to the Department of Business Development, Ministry of Commerce and amend the articles of association as per resolution of shareholders. The minutes of the meeting was also publicized on the Company's website.

Equitable treatment of shareholders:

IRPC respects the rights of shareholders and addresses the importance of each shareholder equally, no discrimination about genders, ages, color, races, nationalities, religions. The Company prioritizes the value of human rights, facilitating the disabled and the elderly during the meeting when receiving information and casting votes.

There is only one class of shares, with one share is equal to one vote, as per articles of association of IRPC. There is no policy to classify types of shares which will differ the right of shareholders. In 2018, the Board of Directors held the Company's securities in total not exceeding 25% of the issued and paid-up capital, representing 0.04930% (as of 31 December 2018).

IRPC issued a policy on information disclosure, guidance for storage and prevention against the use of written internal information. Then the said

policy has been announced to its employees for strict compliance. The Company assigned that the directors and executives must report their securities holding as stipulated by law of securities holding the report of changes of securities holding, to the Board of Directors' meeting.

IRPC is now studying the impact that may occur from the issuance of the said policy which states that directors and senior executives must report to the Board of Directors about the purchase-sell of shares at least one day in advance prior to the trading date. Such a requirement is to provide an information for setting direction and criteria for prudent and efficient practice.

According to the criteria of SET, the related transaction which is not a normal course of business and/or the procurement is compared with another company, the Audit Committee will primarily screen before submitting matter to the Board of Directors or shareholders for approval, based on types, size, financial balance to ensure compliance with the law and transparency and fairness for all related parties. The director who may have a conflict of interest will leave the meeting room and abstain from voting. The Board of Directors will approve the related transaction, connected transaction taking into account the utmost benefit of the Company. The said transaction is accurately and adequately reported/disclosed under information disclosure regulations of SET.

Any changes or taking the new office of the directors will be reported to the SEC to ensure shareholders receive up-to-date information of directors always.

The Board of Directors and executives and IRPC's staff who hold information under SEC criteria will be notified about the silent period pursuant to the good corporate governance, 45 days prior to the disclosure of financial statement and 2 days after the said disclosure. Throughout the past year and in 2018, the directors and executives strictly complied with the regulations. No members was accused or been warned by SEC regarding the insider trading.

The Board of Directors duly complied with the 8 Code of Conduct of the Stock Exchange of Thailand and applied all CG principles to perform their duties and to oversee the Company and affiliated companies comprehensively, effectively regarding mission, policy, strategic plan and operating plan of IRPC.





BUSINESS STRUCTURE

Business Structure and Shareholding

Nature of Business

Integrated Refinery and Petrochemical
Complex Flow Chart

Products

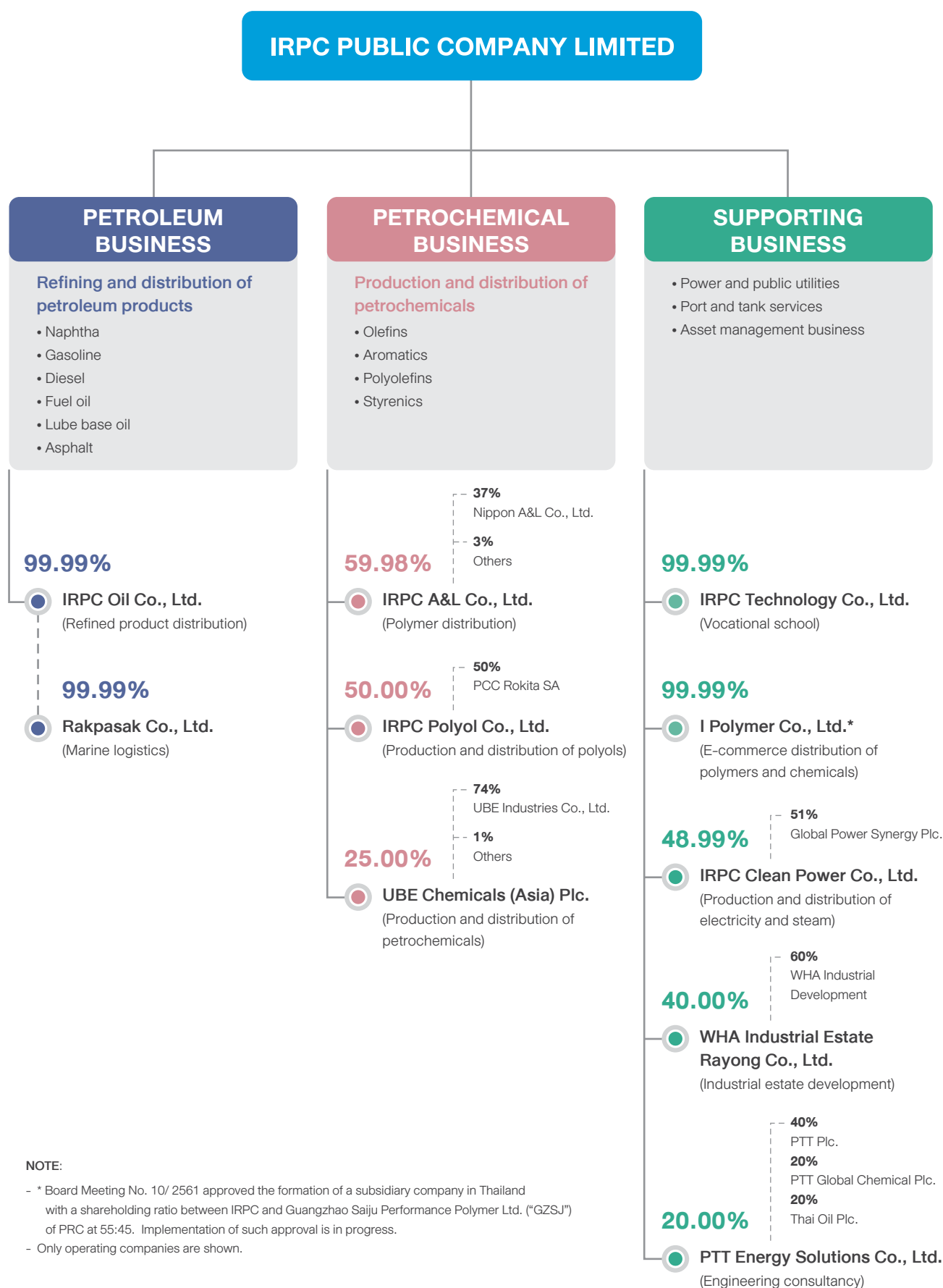
Market Overview and Industry Outlook

Revenue Structure

Connected Transaction



BUSINESS STRUCTURE AND SHAREHOLDING



Nature of Business



A Southeast Asian integrated petrochemical pioneer, IRPC owns a refinery and petrochemical complexes located in its own Rayong industrial zone. The zone fully contains infrastructure and basic utilities supporting industries, including a deep sea terminal, oil tank farm, and a power plant. Below is a business description: petroleum, petrochemical, and supporting businesses.

Petroleum business

Consisting of ADU1 (65,000 bpd) and ADU2 (150,000 bpd), IRPC's oil refining unit commands a total capacity of 215,000 bpd. The third-largest refinery in Thailand, it yields LPG, naphtha, gasoline, diesel, and fuel oil. IRPC's Lube Base Oil Group 1 plant commands a total capacity of 320 KTA, whereas an associated asphalt plant's total capacity is 600 KTA—the largest domestic capacities.

IRPC is also a producer of raw materials for well-known rubber process oil, whose quality has won international quality acceptance under the Terramaxx brand.

Petrochemical business

IRPC's upstream products consist of olefins (Propylene, Acetylene and Butadiene) and aromatics (Toluene, Mixed Xylene, Benzene) and Styrene monomer with capacity of 1,221 KTA, 367 KTA, and 260 KTA respectively, those serving as downstream feedstock. Sold under the POLIMAXX brand to domestic and international plastic manufacturers, polyolefins consist of HDPE (140 KTA capacity) and PP (775 KTA capacity), and styrenics (ABS, SAN, EPS, PS, and Nano) (352 KTA capacity).

IRPC's petrochemical business strives for growth and keeping pace with global change, developing the quality of life, together with enhancement of international competitiveness by inventing and creating innovative styrenics products, namely Green ABS, ABS powder, impact modifier—MBS, anti-dripping additives, and anti-bacterial products, and innovative polyolefins, namely UMHW-PE, polyolefins catalyst, baby-bottle polypropylene, and antimicrobial compounds (Bio - Maxx L - Cement).

Supporting Businesses

Power and public utilities

IRPC provides electricity, steam, and basic public utility services along with other public utility systems, including sale and lease of land for industrial purposes, and other land.

IRPC produces, sells, and provides services for electrical and public utility systems as described below:

1. Electrical: Outputs consist of 22-kV, 115-kV electrical systems, 25-Bar, and 45-Bar steam systems. Power plants consist of a gas-fired combined heat and power plant and a 307-MW coal-fired power plant. An energy dispatch center controls power and steam distribution for maximum stability, and a loop-line transmission system constantly boosts power consumption system security during turnarounds. IRPC has distributed power for more than 1,700 days with zero blackout since April 19, 2012.
2. Water: This consists of filtered, demineralized, cooling, raw, and firefighting water for industrial purposes. IRPC has a raw-water quota from the Royal Irrigation Department together with its own 5-million-cubic-meter reservoir along with two water filtration works at Amphoe Ban Khai and IRPC Industrial Zone for the security of industries through continued supply.

3. Pneumatic: This means IRPC's own production of nitrogen, instrument air, and plant air for industrial purposes. IRPC also direct allies with leading pneumatic industry producers.

4. Waste Water treatment: Under a stable system, the membrane bioreactor plus activated carbon adsorption (MBR Plus AC) system contains very efficient bioreaction processes. Treated water therefore commands quality that regularly passes standards, boosting the confidence of communities and the environment in a sustainable way.

Port and tank services

These services consist of ports or terminals for transfer of domestic and international cargoes. Located at Amphoe Muang, Rayong, and featuring infrastructure, facilities, and international-standard dock services, this is a deep sea area of the Eastern Region. Available services include liquid Tank farms for petroleum products and petrochemicals along with modern, efficient, and safe management systems. Tank farm facilities in Rayong Oil Depot, Phra Pradaeng Oil Depot, Ayutthaya Oil Depot, and Chumphon Oil Depot accommodate customers' needs, hiking the competitiveness of the industrial markets in Thailand.

1. Bulk & container terminal (BCT): At 900 meters long and 44 meters wide, the six sub-wharfs handle vessels ranging from 800 to 150,000 DWT, serving general cargoes, including iron ores, palm shells, coal, granite, fertilizers, and infrastructural items. The current annual cargo volumes exceed 1.5 million tons, and the terminal handles over 240 vessels a year.
2. Liquid & chemical terminal (LCT): This petrochemical-liquid & petroleum terminal handles petrochemicals, liquid petroleum, and gaseous cargoes. At 1,623 meters long, the port features six sub-wharfs, handling vessels ranging from 1,000 to 250,000 DWT. The annual cargo volume is about 16.5 million tons. LCT handles more than 2,100 vessels a year.

3. Tank farm service: Service is provided through more than 300 tanks for liquid petroleum and petrochemical products with a storage capacity of 2.9 million tons, designed to accommodate IPRC's oil product distribution and third parties alike under IPRC's efficient management systems of international standards and experienced team. Four IPRC oil depots are located in Rayong (Eastern Region), Phra Padaeng (Bangkok), Phra Nakhon Si Ayutthaya (Central Region), and Chumphon (Southern Region). Each depot's jetties accommodate cargo transfers for efficient operation and merchandise distribution, saving costs and shortening transport time.

Asset management business

IPRC manages high-potential land in Rayong and other provinces with a total acreage of some 12,000 rai to develop such land into EIZ (Eco-Industrial Zone) projects, including land for industries and high-potential land supporting industrial economic sector expansion that accommodates the Eastern Economic Corridor Development Project (EEC)—an investment promotion scheme under public policy. Three groups make up this business.

1. Industrial zone project: IPRC Eco-Industrial Zone, Amphoe Muang, Rayong: This project is currently full of infrastructural and public utility systems, focused on becoming the hub linking the ecology and production chains of upstream

materials or products. From an integrated refining and petrochemical industry, the products enter the downstream petrochemical industry and direct downstream industry—the heart of modern industries accommodating advanced technological industrial groups.

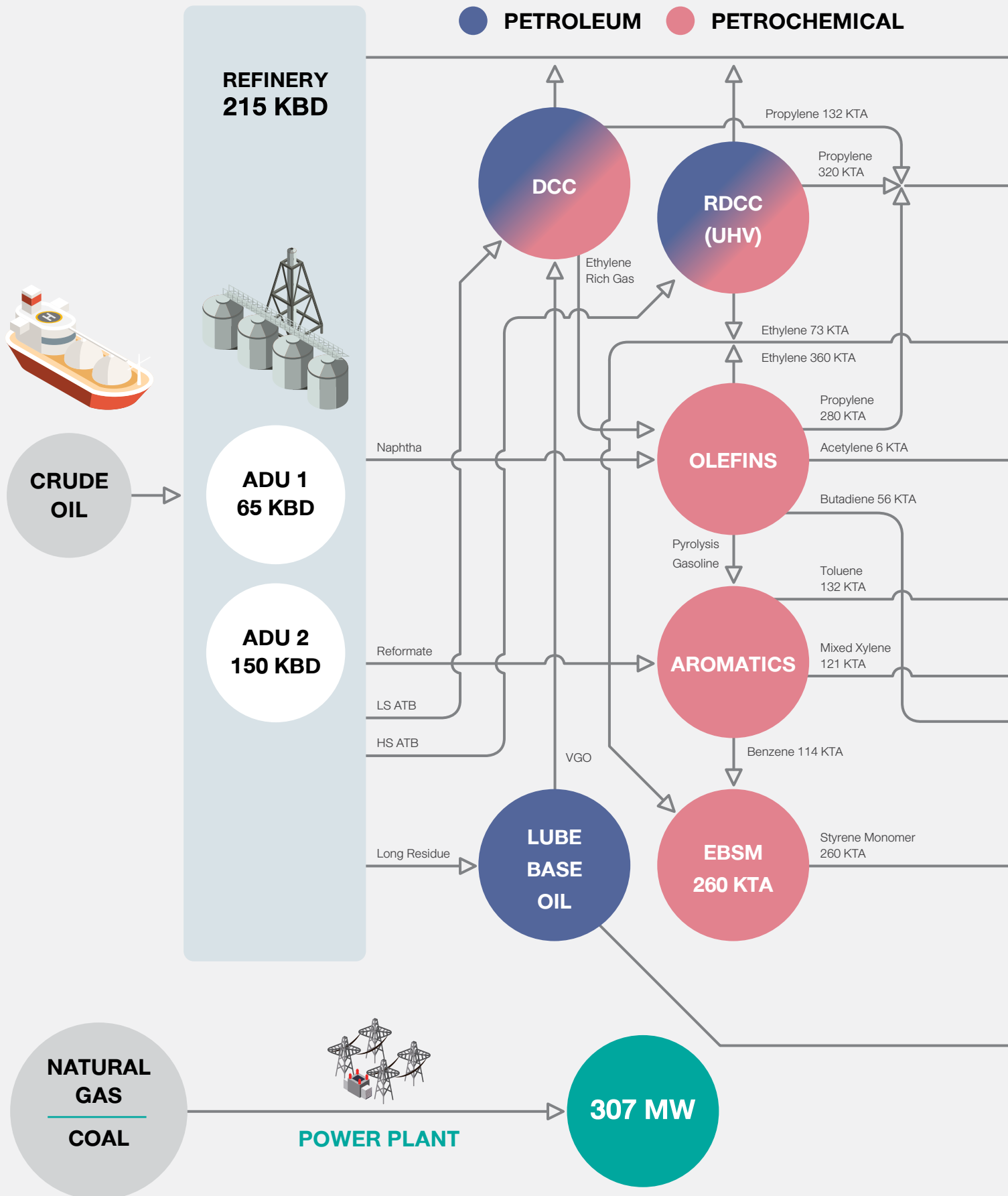
2. Industrial estate project: WHA Industrial Estate, Amphoe Ban Khai, Rayong: IPRC won approval for joint development of this industrial estate project, a joint investment between IPRC (40%) and WHA Industrial Development PLC (WHAID) (60%). This business synergy seeks to accommodate future investment in the Eastern Economic Corridor (EEC) with emphasis on target industries under Thailand 4.0 policy.

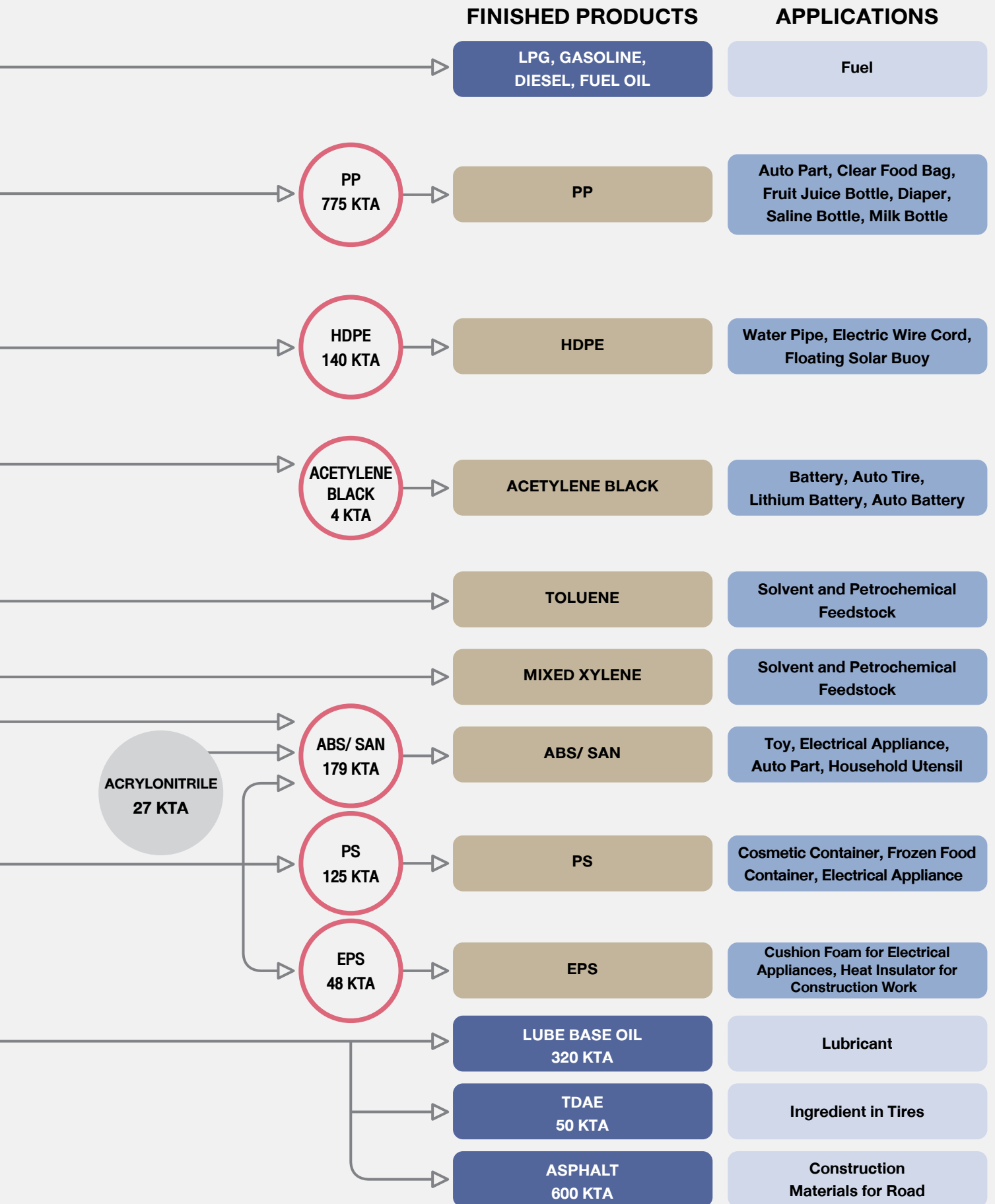
3. High-potential land: Large plots of development-potential land, Amphoe Chana, Songkhla, of about 2,200 rai, with a potential for development into areas supporting industries and into commercial areas, accommodate enlargement of the deep-sea port development project and public-sector power plants. This land includes other high-potential land in Rayong, Chiang Mai, and Lamphun, which are of smaller acreage and where development plans are upcoming to grow their values through sale or through lease for agricultural purposes, commercial buildings, housing estates, and management for land tax purposes.





INTEGRATED REFINERY AND PETROCHEMICAL COMPLEX FLOW CHART





Products



IRPC and its subsidiaries produce and distribute petroleum and petrochemical products as detailed below.

Petroleum Products

1. Fuels

- **Gasoline**-Fueling gasoline-engine vehicles, gasoline is classified by octane number, which indicates resistance to engine knocking. Under government regulations, gasoline consists of ULG91, GSH95, GSH91, and gasohol base — the base oil for gasohol and E20.
- **Diesel**-Fueling high-speed diesel engines in the industrial sector, diesel is also common in vehicles like cars, trucks, fishing trawlers, passenger boats, and tractors. At present, a blend of 5-7% of biodiesel is required by government policy to promote alternative energy.
- **Fuel Oil**-Fuel oil, the portion of crude with a high boiling point, is commonly used in the industrial and transport sectors as well as in power generation.
- **LPG**-Liquefied petroleum gas (LPG) is a compound of hydrocarbons, mainly propane and butane, and is commonly found in household kitchens and various industries, and can also replace gasoline in gasoline engines.

2. Lube Base Oil

- **Lube Base Oil**-consists of heavy distillates used for producing different grades of lubricants. At present, IRPC produces various grades for different purposes:

150 SN is a raw material for lubricants for the manufacturing industry, such as automotive and transport

500 SN is a raw material for lubricants in most vehicles.

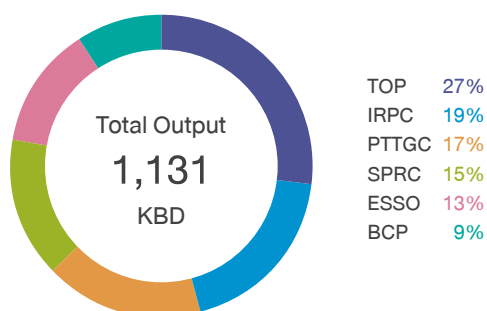
150 BS is used in industries and heavy-duty engines with high friction, such as engines of trucks, trains, and marine vessels.

In addition to these products, IRPC features innovative lube base oil, namely Treated Distillate Aromatic Extract (TDAE) and Residue Aromatic Extract (RAE). These serve as raw materials for automotive tires with reduced polycyclic aromatic hydrocarbons (PAHs), a carcinogen, to demonstrate concerns for consumers' health.

3. Other Petroleum Products

- Naphtha—meaning light distillates obtained from oil refining processes, is major petrochemical feedstock.
- Asphalt—is a compound of hydrocarbons and other organic substances collectively called bitumen. Thick and viscous, asphalt is the heaviest portion obtained from refining processes, used for road pavement and waterproof materials.

Local Refineries' Capacities (2018)



*IRPC ranked second in domestic refineries' capacity
Source: Department of Energy Business (January – December 2018)

Petrochemical Products

1. Olefins

Olefin products, namely ethylene, propylene, and butadiene, are feedstock for polymers, namely polyethylene (PE) and polypropylene (PP). IRPC produces 1,221 KTA of olefins, comprising 433 KTA of ethylene, 732 KTA of propylene, and 56 KTA of butadiene. Most of these olefin products serve as feedstock for various plants in IRPC Group.

Moreover, a by-product from the olefins plant, acetylene black — black powder with outstanding purity and high electrical conductivity — is commonly used as a raw material for batteries, polymers, and rubber products. At present, IRPC has a capacity of 4 KTA.

2. Aromatics

Aromatic products (BTX), namely benzene, toluene, and xylenes, are feedstock for styrenic polymers. At present, IRPC has a capacity of 367 KTA of aromatics, which basically serve as feedstock for other plants in IRPC Group. Part of the output is for sale to other industries.

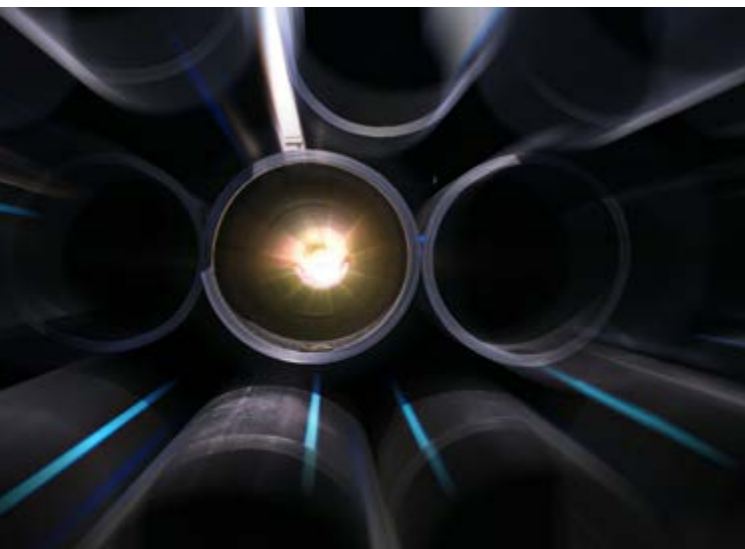


3. Polymers

IRPC produces polymer products under the 'POLIMAXX' brand. Categorized as a downstream petrochemical, polymers yield various plastic products. IRPC's polymers fall into the polyolefins group, comprising HDPE and PP, and the styrenics group, comprising ABS, PS, and EPS. Each polymer type possesses distinct properties, serving different purposes:

3.1 High-Density Polyethylene (HDPE)

HDPE is a polyethylene product with high density. In-line compounding makes HDPE in black, suitable for molding, such as pipe extrusion, especially for making water pipes and electrical conduits due to its high resistance to traction and impact. HDPE also boasts high flexibility and high resistance to changing ambience conditions.



3.2 Polypropylene (PP)

PP is strikingly similar to HDPE and can often replace it. However, PP is tough and strong, with higher resistance to heat. IRPC produces PP homopolymers and PP block copolymers that are more impact-resistant and PP random copolymers that are extra-clear for the following conversion methods:

- **Film-PP** is used for producing extra clear plastic sheets for heat-resistant bags, packaging film or food-packaging film.
- **Filament/ Yarn-PP** is used for woven sacks, onion and garlic bags, and canvas. PP filament comes in two forms: mono-filament, used for heavy-duty ropes such as giant ropes, and multi-filament, used for making belts and bag holders.
- **Spunbond/ Non-woven-PP** is used for diapers, sanitary masks, clothes bags, caps, including other sanitary and medical products.
- **Injection Molding-PP** is used for household products, kitchen utensils, car parts, electrical appliance parts, battery covers, paint kegs, and outdoor furniture.
- **Blow Molding-PP** is suitable for conversion into clear products which need a hard surface that can resist acids and alkalis. PP is clean and highly safe for making bottles for food and cosmetic products.
- **Sheet Extrusion-PP** is widely used because it provides good form after molding, is food-safe and has a lower price. It is often used to produce document files and food packaging, for example, drinking water cups and trays by thermoforming.

3.3 Acrylonitrile-Butadiene-Styrene (ABS)

IRPC's ABS has many grades with outstanding properties, for example, high impact and super high impact grades, high gloss grade, and high heat-resistant grade. It can undergo injection molding and sheet extrusion. ABS is commonly used for:

- **Electrical Appliances** such as parts of rice cookers, irons, telephone sets, electric fans, computer keyboards and refrigerator walls. Its outstanding properties include thermal resistance, high gloss, chemical resistance, metal plat-ability, and ability to increase electro-resistivity.

- **Automotive parts** these include side mirrors, glove compartments, dashboards, and motorcycle parts, for example, dashboards, masks, mud guards and safety helmets. This is because of its high strength, durability, heat resistance, impact resistance, adhesion to color, chemical resistance and resistance to solvents like thinner, and a glossy surface.
- **Household Appliances** such as furniture parts and sanitary ware because of its high gloss, high impact strength, heat resistance, and high chemical resistance.
- **Toys** Since ABS is strong and not brittle, even when broken, it makes no sharp point that harms children. It also has high gloss and high dyeability providing bright colorful materials.

3.4 Acrylonitrile Styrene (SAN)

Transparent, strong, rigid, and tough, SAN (or AS) is heat-resistant and more chemical-resistant than PS and is commonly used for injection molding, such as:

- **Automotive Parts**-such as headlight lenses, tail lights, and parts of turning signals. Due to its lower cost, SAN often replaces PMMA.
- **Household Appliances**-Thanks to its unique properties, SAN is commonly used for household appliances such as sanitaryware, lighters, and containers.
- **Electrical Appliances**-such as fan blades, air-conditioner covers, and fruit juice blenders due to its properties of gloss, stable form, heat resistance, chemical resistance, and particularly shear resistance.

3.5 Polystyrene (PS)

PS is made up of two categories based on its properties:

- **GPPS (General Purpose Polystyrene)**
GPPS is present in PS polymers with high clarity and rigidity, easily molded into various forms. However, it has low impact strength. GPPS is commonly used for making products

that need extra clarity and a rigid form, such as electrical appliances, air condition masks, and kitchen utensils.

- **HIPS (High Impact Polystyrene)**

HIPS is present in PS polymers with higher impact strength than GPPS as a result of blended butadiene rubber in product development.

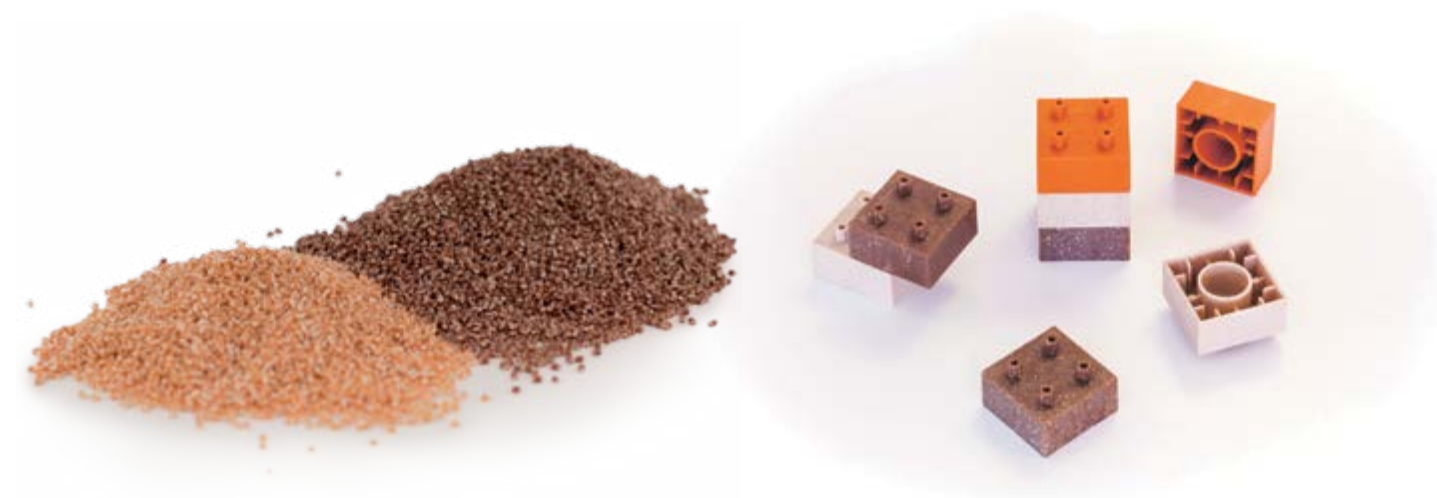
GPPS and HIPS can undergo injection molding and sheet extrusion.

3.6 Expandable Polystyrene (EPS)

IRPC's EPS is present in white, round polymers using styrene monomer as the main feedstock and pentane gas as a blowing agent without using CFCs, which are not ozone-friendly, in its production process. EPS can be used in the following ways:

- **Packaging** such as shock-absorbing foam used in electrical appliances packaging.
- **Block** such as heat insulation in the fishery industry's cold storage, construction work, yielding energy saving in cooling and reducing the construction cost, including decorative work.





Wood Plastic Composite

4. Specialties and innovative products

IRPC highly values constant R&D through the self-development approach to meet customers' diverse needs and dynamic environment. It can therefore best fulfill customers' expectations while taking care of the environment. Specialties comprise the following:

- **Green ABS** is a product innovation based on IRPC's environmentally and socially responsible business philosophy. IRPC is the world's first and only Green ABS producer, which is made from natural rubber, not synthetic rubber. Currently it can substitute the use of synthetic rubber by up to 10-40%. This initiative is one way to add value to domestic natural rubber.
- **Anti-dripping Additive** IRPC's nanotechnology is applied to the development of this additive, which prevents polymers from dripping when heated. The additive can disperse well in polymers and can be kept at the ambient temperature so as to lower the cost of product storage and distribution. The additive is suitable for mixing in various polymers to enhance flame retardation under UL-94 (V.0) standards. IRPC has now employed the additive in quality improvement of ABS-Flame Retardant Grade polymers.
- **Anti-bacteria Agent** This new product is also developed by means of nanotechnology. Stunting growth of and killing bacteria, the agent can serve as an additive in various plastics (ABS, PS, or PP) to check the growth of bacteria in the products while doing no harm to the properties of polymers.
- **ABS Powder** ABS Powder is a powdery polymer suitable for manufacturers who want polymers with better dispersion than conventional plastics. ABS powder can be used with PVC, PC, or PC/ABS to enhance impact strength and heat resistance.
- **Ultra High Molecular Weight Polyethylene (UHMW-PE)** UHMW-PE resembles cloudy white, opaque powder with as much as 10 times higher molecular density than other PE varieties. It can be converted through various methods, such as compression, RAM extrusion, and gel spinning. Thanks to superior properties to those of iron joints and gear, UHMW-PE suits assorted work that needs toughness, strength, and resistance to abrasion and chemical erosion.

- **Chlorine Resistance Pipe** This polymer with a chlorine-resistant property, is used to produce high-pressure tap water pipes. Its property increases the longevity of pipes, reduces maintenance costs, and ensure no contaminant from erosion.
- **Pim-L** This is special-grade Acetylene Black, developed by IRPC in collaboration with the National Science, Technology and Development Agency (NSTDA). It is used as a carbon conductive additive specifically for Li-ion battery.
- **Natural Color Compound** This polymer has a mixture of natural extract colors in place of synthetic colors, such as green from spinach, brown from caramel, and yellow from turmeric

to reduce problems from toxic and heavy-metal residues and provide long-lasting natural looks.

- **Wood Plastic Composite** Valuing natural conservation, IRPC blends natural wood powder into the process of alkaline plastics. The mixture is then converted into new products that retain the outstanding properties of both plastics and wood and can fill in for natural materials. This promotes cost-effective use of resources.
- **Bio-Maxx-L-Cement** This product is an innovation from 70% natural rubber liquid and cement mixed with polymers. It is converted by injection molding. It boasts recyclability and re-molding ability.

Domestic polymer producers and domestic production capacities (2018)

(Unit: KTA)

Product	Company	Capacity	%
HDPE	IRPC Plc	140	7
	Thai Polyethylene Co., Ltd.	960	51
	Bangkok Polyethylene Plc	500	26
	PTT Global Chemical Plc	300	16
	Total	1,900	100
PP	IRPC Plc	775	34
	HMC Polymers Co., Ltd.	810	35
	Thai Polypropylene Co., Ltd.	720	31
	Total	2,305	100
ABS	IRPC Plc	179	65
	Ineos ABS (Thailand) Co., Ltd.	95	35
	Total	274	100
EPS	IRPC Plc	48	62
	Ming Dih Chemical Co., Ltd.	30	38
	Total	78	100
PS	IRPC Plc	125	34
	Siam Polystyrene Co., Ltd.	150	41
	Thai Styrenics Co., Ltd.	90	25
	Total	365	100



Market Overview and Industry Outlook



1. Petroleum Market and Competition

Crude Oil and Refined Product Market

The 2018 overall domestic energy consumption rose in all sectors: 2.2% for gasoline, 1% for diesel, and 2.3% for electricity and power. The rise in gasoline and diesel consumption was due to 4.2% GDP growth driving more use of vehicles and transport. Higher private consumption and expansion of the tourism industry were the main drivers for higher power consumption.

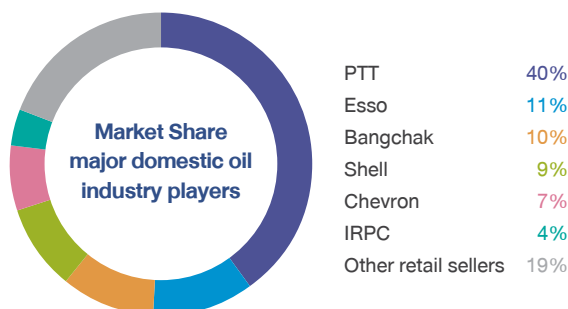
Within the 2.2% rise of gasoline consumption, 41.4% was gasohol 95, the largest proportion of gasoline. Gasohol 95 consumption rose by 7.2% and gasohol E85, by 12.3% to 1.16 million liters per day.

Diesel consumption rose by 1%. Under the government's subsidy of Baht 3 per liter for B20 diesel for trucks, buses and passenger boats beginning July 2018, the sale during the first 5-month

period totaled 14 million liters from 55 participated transport operators, including 1,692 vehicles and 62 boats.

The 2018 major domestic oil industry players were PTT, Esso, Bangchak, Shell, Chevron and others, with the following market share.

Domestic Market Share



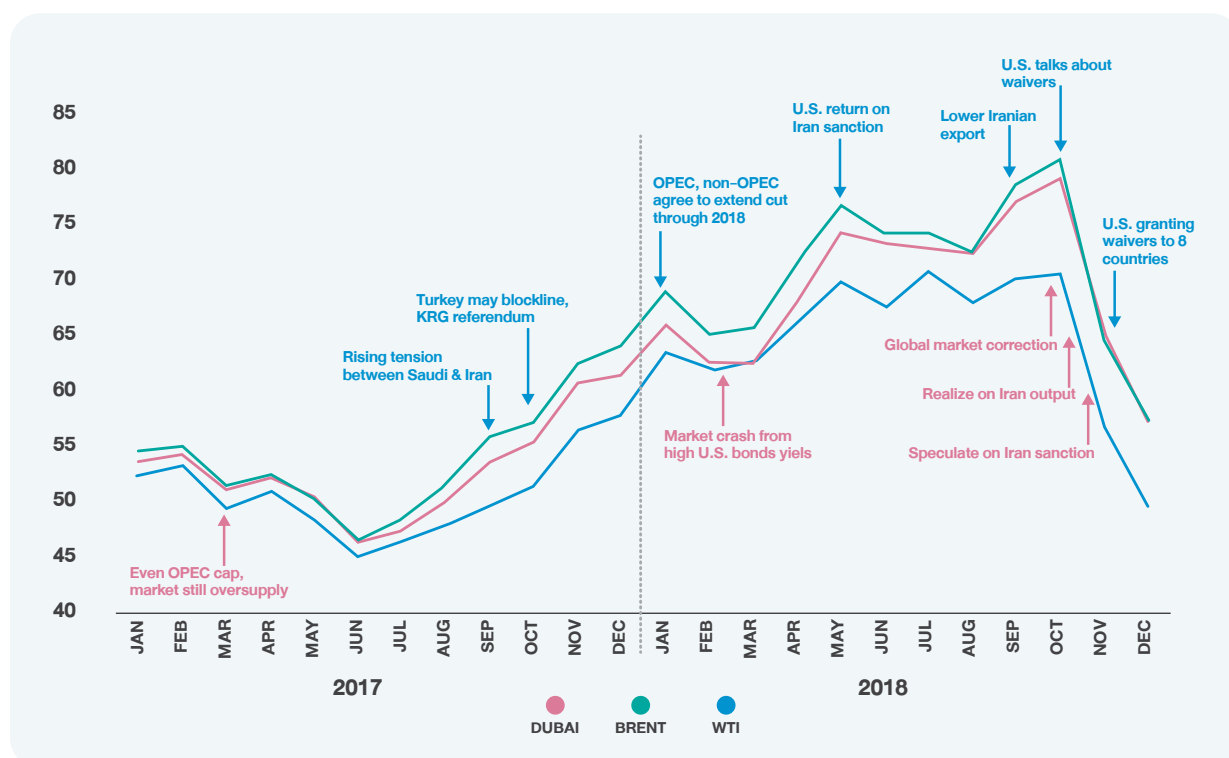
Source: Department of Energy Business (data for Jan – Dec 2018)

Crude Oil Market and Situation

The 2018 crude oil price moved within the USD 49-48/ bbl range, with an average of USD69/ bbl, increasing from USD53/ bbl in the previous year. The increase began early in the year, reflecting the rising demand for crude oil driven by solid economic expansion worldwide and the agreement between members of the OPEC and non-OPEC bloc, including Russia and Oman, for an output cut. The oil market was, however, under pressure from the U.S. economic sanction on Iran and the escalation of trade war between the U.S. and China. The continuous growth in oil production from the U.S. shale oil and the U.S. inventory was the main cause

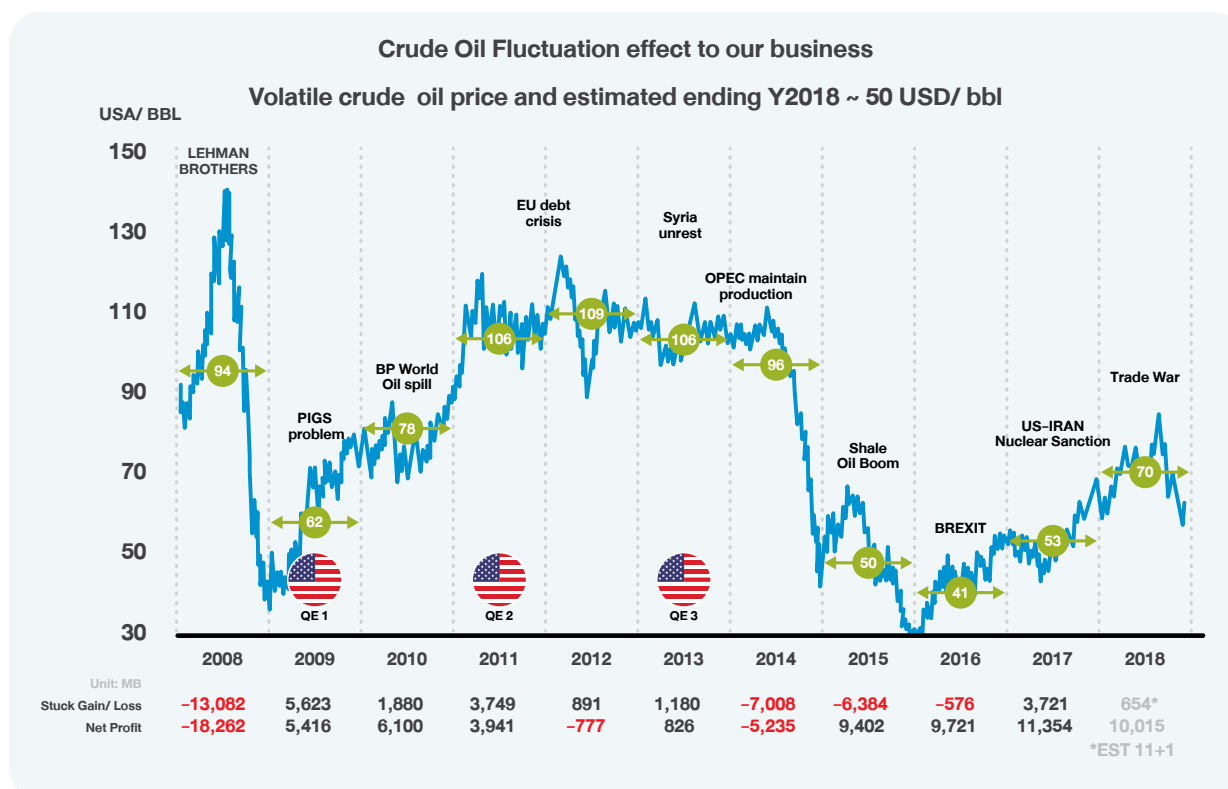
of the drop in the crude oil price during the year. The dramatic drop began on November 4 when the market turned into panic with fear of considerable oversupply after the U.S. announcement of economic sanctions on Iran with a relaxation term to allow exports from Iran to China, India, South Korea, Turkey, United Arab Emirates, Japan and Taiwan for the first 180-day period. The price nosedived further to USD57/ bbl at the end of 2018, when additional supply was added from Russian production increase and the return of crude oil exports from Iraq after the one-year frozen period.

Crude Oil Prices Movement 2017 – 2018



Source: Platts & Reuters

Graphic display factors affecting the world crude oil price



Source: Platts & Reuters

Crude Oil Price Outlook

With the current global GDP growth of 3.7%, the 2019 crude oil market is expected to grow by 1.1-1.3 million bbl/ day. The main factor driving the oil price downward will be the trade war between the U.S. and its global trade partners. The supply is predicted to be tight due to geopolitical and economic concerns within the OPEC producing countries. The PRISM Expert team of PTT predicts the Dubai crude oil price to swing within the USD70-80/ bbl range during 2019. Other long-term factors contributing to the global crude price are the Green policy and digital technology, which will transform the entire industrial supply chain and eventually alter consumers' behavior and the demand pattern of energy.

Customers and Distribution Channels

IRPC is fully committed to controlling and maintaining the highest quality of its refined products to comply with all standards defined by the Ministry of Energy. This quality commitment goes into the selection of distribution channels, adjustment of retail prices to correspond with the market movement and optimize the synergy with all subsidiaries to maximize the sales strategy. Customers and distribution channels of IRPC are as follows:

- **Industry group under direct sales**, including companies with road transport, buses, ship cargoes, construction work and others, including sales to affiliates.
- **Wholesales/ jobber** group of small and large ones for wholesaling to direct sales and retail sales traders.

- **Group of traders under Article 7**, including medium-scale and large-scale oil traders with their own storage tanks. Oil products are distributed through the network for resale to end-users or downstream consumers.
- **Export** to international traders via tankers, including traders in Singapore, Cambodia and Vietnam, and via truck transport, including Indochina traders in South China, Cambodia, Laos and Myanmar. Export sales in 2018 accounted for 34% of the total sales.
- **Bunker**, or Automotive Diesel Oil (ADO), to ships berthing at IRPC terminals.
- **Fishery**, members of the fishing associations with a product known as green diesel. IRPC commanded 50% of the market share in 2018.

IRPC's Proportion of Product Sales

IRPC's proportion of fuel sales in 2018

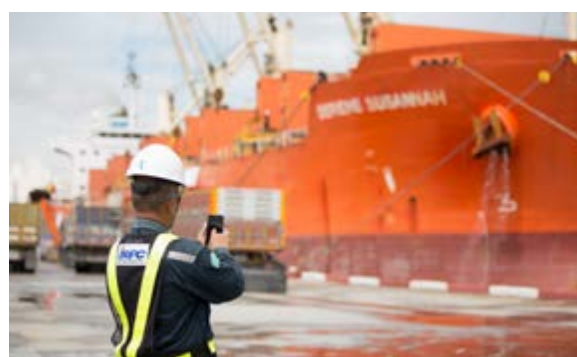
Type of Sale	Proportion
1. Wholesales	22%
2. Export including fishery	41%
3. Sales to traders under Article 7	35%
4. Sales to industry groups	2%

Source: IRPC Petroleum Business Division

Competitive Strategies

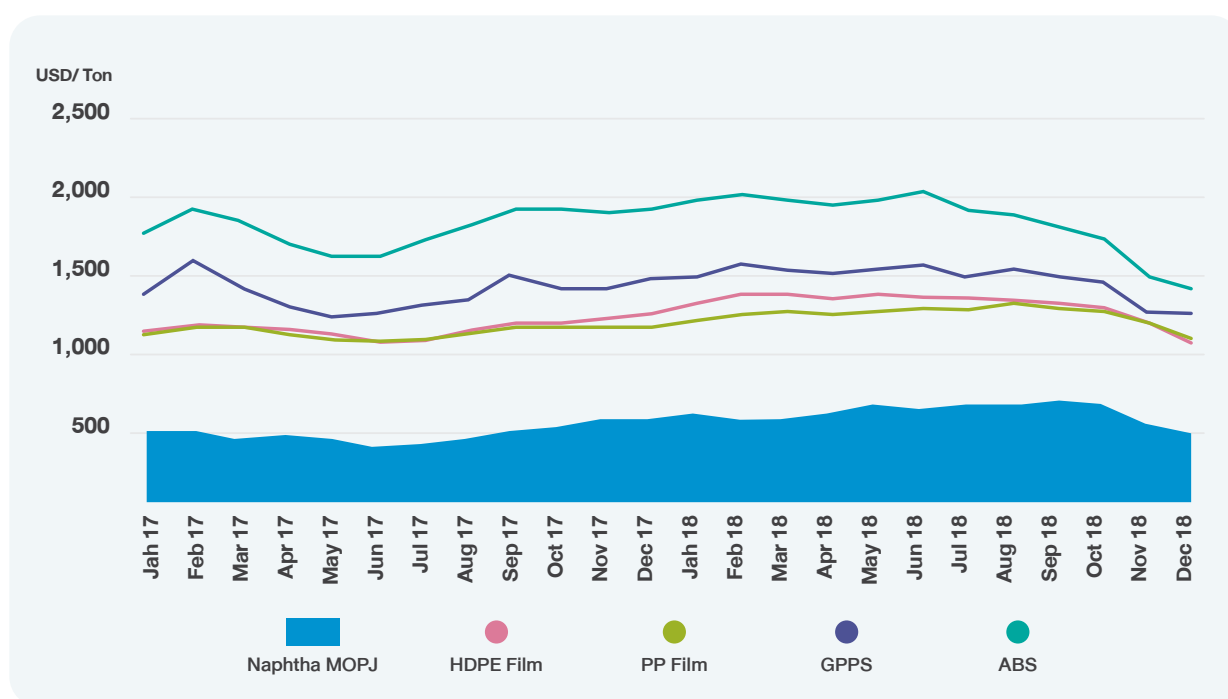
IRPC's sales strategy is to maintain the highest quality of its products with clean and standard processes from the refinery to the entire chain of services, through the pioneering and most advanced purchasing system in the region. The IRON purchasing system interfaces with the mobile PDA, leading to a continuously increasing number of customers and volume of sales while maintaining suitable marketing margins. Services of IRPC can be described as follows:

- **Depots:** runs five depots covering all regions. The Rayong depot runs around the clock. The Mae Klong depot in Samut Songkhram was added recently to serve customers in the West and the upper South.
- **Transport:** IRPC provides transport services with oil trucks throughout the country together with marine vessels and berthing terminals for marine customers.



- **Service Personnel:** Sale agents, sales coordinators including customer service sales and ticketing services for sales orders of IRPC are all connected through an enterprise-wide SAP system. The system provides on-line and real-time data interaction with the highest accuracy under a single-standard platform, providing efficiency and redundancy elimination, as well as specific data set for further analyses and decision-making by management executives and operating staff. The IRPC Oil on Net, IRON, is an integrated system providing electronic interaction with all interfaces, including sales and distribution of all products and supply chain management. When combined with the Total Business Solution system developed by IRPC, the company can better response to customers' transactions and increase business efficiency, as well as maintaining system operability to support other phases of system development and distribution of other channels in the future.
- **Quality Inspection:** IRPC provides technical personnel to solve problems and share knowledge with customers. These personnel are also tasked to inspect the quality of products and services at all stations and depots to ensure quality standard for customers.

Graphic display prices of raw materials/feedstock and petrochemical products



Source: ICIS

2. Petrochemical Product Market and Competition

Competition Overview

The 2018 petrochemical market was expected to grow in line with the national GDP and the expansion of the industry sector. The National Economic and Social Development Board reported their projection of the 2018 Thai GDP at 4.2-4.7%, driven by private consumption and total investments. It is noted that the 4.8% economic expansion recorded for the first quarter of 2018, a jump from 4.0% in the previous quarter, was the record jump of Thai GDP for the last 20 consecutive quarters.

With support of the economic expansion following continuous growth in domestic consumption, government spending and recovery of exports, the 2018 petrochemical market continued to grow. However, the market growth was pressured by the capacity limitation of only 1-2% growth and higher import of downstream products. The 2018 domestic demand for petrochemical products grew by 3.0-4.5%, driven by consumption amid higher export to countries where the manufacturing sector recovered.

The growth can, however, be limited due to trade policies imposed by Thai trade partners, particularly China, Indonesia and Vietnam, who have expanded their petrochemical capacities while reducing import. The export of Thai polymers is set to grow only 1-3% per year, but the export value is set to grow 5-10% per year, corresponding to the increase in petrochemical prices. Because of higher demand over supply, capacity utilization is higher, with an average of 96% in 2020, from 94% in 2017.

The 2018 prices of monomers and polymers were pressured to become volatile in line with the raw materials, namely crude oil and naphtha. The prices of polypropylene rose 16.87% to average USD1,324/ton, high-density polyethylene (HDPE) increased 17.21% to average USD1,351/ton, polystyrene jumped 8.89% to average USD1,324/ton, and ABS grew 16.87% to average USD1,882/ton. The prices of monomers moved in the same direction: ethylene rose 7% to average USD1,147/ton, propylene jumped 20% to average USD979/ton, and styrene monomers increased 5% to average USD1,307/ton.

Petrochemical Growth Outlook

The Thai economy in 2018 grew in line with the continuous expansion of investments by the public and private sectors, and trade expansion. However, certain risks are to be closely monitored, including fluctuating commodity prices driven by volatile crude prices, rises in inflation and interest rates, and weakening Asian currencies affecting imports and exports of Thailand. Moreover, the Thai trade was affected by the trade war between the U.S. and China, beginning with the tariff rises by 10-25% by U.S. President Trump on Chinese imports, increasing industrial products value by USD34 billion in total. With similar retaliation by the Chinese government at the equivalent value, the trade war came into full force. The total tariff adjustment imposed on Chinese products by the U.S. was USD200 billion. The risk from this trade war has made the global economy more fragile. The IMF prediction for the 2018 global GDP is 4.2%.

The Office of the National Economic and Social Development Board reported on November 19 this year that the 2018 Thai economy would grow by 3.5-4.5%, supported by household spending and higher investments by the government and private sectors. All other indicators are also positive, including growth in tourism, economic expansion by international trade, which in turn supports more exports; trade negotiation and manufacturing and cross-border investments.

Despite the positive indicators, impacts of the trade war, the economic fragility of certain countries and the continual by tightening money market, the IMF issued a new economic projection on October 9 to lower the global GDP from the July 2018 original 3.9% to 3.7%. The lower growth was mainly assigned to countries in the Eurozone and emerging market (EM) group.

For 2019, economic growth projection for the U.S. and China are set to be 2.5% and 6.2%, somewhat limited due to impacts of the trade war. Economic growth for the Eurozone and Japan would likely grow by 1.9% and 0.9%, and for countries in the emerging market, it will vary, led by the Asian EM at 6.5% and 6.3%.

The IMF made a further projection indicating a slowdown of the U.S. economy after the fading of fiscal policy impacts and the return of the normal monetary policy. The 2019 economic growth of China will also slow down from 6.4% to 6.2% due to impacts from the escalating trade war with the U.S., tighter control of the banking sector and certain debts. This slowdown has already been noticed in several sectors, including domestic consumption, investments, industrial manufacturing and exports. The export from China to the U.S. will face a tariff rate of 25%, effective from January 1, 2019, rising from the 10% original rate. The tariff rate increase was part of the U.S. trade measure with a target to collect up to USD200 billion from Chinese imports in total. The U.S., however, postponed the measure for a 90-day period after the resolution made on December 2 at the G20 Summit. This 90-day period was set for bilateral negotiation. Since then, investors' confidence in the Chinese RMB currency has declined, driving the RMB to fall further amid economic uncertainty of the trade war.

In general, even with strong macroeconomic structures with reasonably good economic growth, members of the emerging market (EM), particularly those in Asia, will face more hurdle in 2019. Because of the U.S.-China trade war, members of the ASEAN-5 group, including Malaysia, Indonesia, Philippines, Singapore and Thailand, will be under more pressure, which could drop its growth of 5.3% in 2018 to 5.2% in 2019. In addition to the trade war, lower global liquidity caused by the Fed's announcement of the increasing fund rate and monetary crisis in Turkey and Argentina will limit the level of investors' confidence and constrained growth of the EM members, and may drive the



fund flow constantly from the Asian emerging markets. Those with high current account deficits and negative trade balances such as Indonesia will face an outflow of foreign funds and a weakening currency.

Effects from the trade war will be more pronounced in 2019 to both the U.S. and China. The U.S. trade measure against China includes tariff rate increases of 10% on steel and 25% on aluminum imports from China, with targets of USD50 billion on 25% tariff increase and another of USD200 billion on a 10% tariff increase. The Chinese government retaliated with the same trade targets with an exception of the last round, where the target was lowered to a 7% tariff increase with the target of USD60 billion. From an IMF report, the U.S., in addition to the previously announced measure, will likely impose another 25% tariff increase on the remaining USD267 billion trade value from China, bringing the total trade value subject to tariff increases to around USD500 billion. The retaliated trade value imposed by China will likely be around USD130 billion. The trade war is most likely to pressure the economic growth of the U.S. and China by 0.2% and 1.16% in 2019, and 0.27% and 0.95% in 2020, respectively.

The world will inevitably face a series of economic hurdles in 2019, including trade disputes and tariff increases between the U.S. and China, which affect global trade, lower liquidity and fund outflow in the emerging markets, economic slowdowns in the Eurozone, Japan and England, as well as fund outflows caused by higher domestic interest rates in Argentina, Brazil, Turkey and South Africa.

The petrochemical industry in 2019 will fluctuate with the world crude price. Volatility will be driven by a negative projection on oil demand in 2019 by the OPEC for four months in a row. Down by 70,000 bpd, OPEC's latest projection of demand will grow only by 1.29 million bpd. Production from the non-OPEC bloc will likely increase by 120,000 bpd to 2.23 million bpd. Analysts have predicted that Thailand will not be able to avoid impacts from the trade war. As the Chinese RMB currency becoming weak, currencies of the EM will become softer, limiting the purchasing power of the EM.

With a prediction that the U.S. Fed will increase the interest rate one more time in 2018 and three more times in 2019 to cool the rapidly growing economy in the U.S., the baht will become volatile amid a

stronger USD currency. Under this assumption, Thai petrochemical export is likely to increase by USD1 billion and import by USD1.4 billion. The most important factors affecting the petrochemical industry are the world price movement, trade economy in the Asian region, and the global economy, as well as the geopolitical security of producers in many parts of the world, and various disasters.

Competitive Strategies

With a commitment to deliver products with balanced values, IRPC has consistently reviewed the demand and expectations of all stakeholders and duly made changes to products and work processes:

- (1) For products, increasing the PPE capacity and differentiating their products with quality higher than that of competitors through the PPC project to cope with higher market competition and commodity price volatility.
- (2) For work processes, proceeding with the Everest strategy to increase IRPC's operating efficiency and organizational health, which will eventually increase the profit. These changes will help sustain IRPC's profitability and competitiveness in production, supply chain, marketing and sales, procurement, human resource services, and organizational management, as well as the GDP strategy. The GDP strategy aims for sustainable growth competitive with world-class corporations:

G – for **Power of Growth** meaning investment expansion through cooperation with business partners, product development and innovation-driven mutual profitability;

D – for **Power of Digital** meaning operating process transformation to become more modern and cope with digital changes; and

P – for **Power of People** meaning work agility, new management talents and nurturing of organizational core values to correspond to the growth of IRPC through the enlargement of work potential and work and management efficiency.

Prices

Polymers are products whose prices are driven by many external factors ranging from costs of feedstock including crude, naphtha, and monomers,

to domestic and regional market factors, global market mechanisms, cost structures, product characteristics, product life-cycles, demand and supply factors, the economy, market competition, laws, trade rules and regulations, government policies, and ethics of business owners and operators.

IRPC has therefore cautiously defined its pricing strategies to correspond to the market competitiveness and positions of specific products, as well as market distribution and specific timing, with a focus on product features to respond to customers' needs, uniqueness of its products, and benefit to the customers.

Product Quality

Since IRPC was the first pioneer of the Thai petrochemical operator full of R&D experience and long-term, close relationship with customers, a full spectrum of plastic products and ISO 9001 standard certification, IRPC possesses solid potential to generate consumers' confidence with high quality standard products, efficient allocation and development of new plastic products to specifically respond to the needs of domestic and international customers. With a full spectrum of polymers, including natural, color compounds and composites, IRPC can address specific needs of customers, such as electrical appliance spares and automotive parts. These compounding and composites factories are located within the same cluster as other polymer plants, and are all managed by the IRPC Group, creating convenience and flexibility for tailor-made manufacturing for all customers. IRPC also provides technical services including technical advice on selection of polymers before sale, and technical advice and troubleshooting after sale.

Management of environmental issues, occupational health and safety is always taken into consideration with work processes. IRPC has well-defined policies on the protection of the environment and the safety of its employees and people in the communities, concretely imprinted in all its products. This can be illustrated by ISO 14001 and TISI 18001 certification for all polymers. Facilities producing ethylene, polyethylene, polypropylene, and polystyrene are all certified with the Standard for Corporate Social Responsibility from the Department of Industrial Works (CSR-DIW).

Product Variety

Companies under the IRPC Group have a combined polymer capacity of more than 1.2 million tons per year. The product spectrum includes HDPE, PP, EPS, PS, ABS and SAN for suitable convenience and flexibility to the needs of all customers. Certain types are interchangeable, for example, PP can be substituted by HDPE for certain molding for household products, weaving bags and canvases. Polymer selection therefore depends not only on the specifications, but also prices and availability in the market. With this variety, more business opportunities are given to IRPC and its local and international distributors to offer to customers products specifically needed and reduction of the sales cost per unit for marketing efforts.

Service Strategies

Several sales campaigns were organized in 2018, as in previous years. For example, an eco-tourism activity by bicycle was organized in June for POLIMAXX customers under the “TASTE OF BANGKACHAO — full of virtue and full of foods at Bangkachao” campaign at Phra Pradaeng, Samut Prakan. IRPC also participated in exhibitions such as China Plas 2018 Exhibition in Shanghai, China; National Science and Technology Week in June; and APLAS 2018 in September. These activities publicized product brands and strengthen relationship with customers. For international sales, IRPC organized Vietnam Road Show in September in Hanoi, Vietnam.



IRPC is fully dedicated to operations with a focus on energy and innovation with adherence to principles of environmental management towards excellence and sustainability. With an intention to share knowledge of the best uses of plastic and value of recycling, the



POLIMAXX RUN3R program was initiated by IRPC as an operator of the petrochemical and refining industry with environmentally and socially friendly and innovative products. The program also developed responsibility of the users, good health and grouping of fitness society, nurturing awareness and knowledge of the correct uses of plastic, and proper ways to reduce plastic waste. The Plastic Right concept was introduced including 3R: Reduce, Reuse and Recycle. Reduce means use only needed and not more than necessary. Reuse means using again wherever possible. Recycle means separation of the parts which can be recycled for reuse. The concept demonstrates that plastics can provide convenience for living with no impact on the environment if used with responsibility. In conjunction with the Faculty of Mass Communication, Chiang Mai University, IRPC organized a “For You, For the World” program with awards and prizes given to students with outstanding short movies and video-clips arousing awareness of the use of plastics on November 22, 2018, at the main hall of the faculty. The program, initiated since September 2018, invited Chiang Mai University students to create and submit work with two distinctive concepts: short movies on Care Share Respect, creating and motivating society to care, share and respect for a better society, and video clips on Small Step Everyday, showing how to properly use plastics with full awareness of one’s responsibility. The program was another example of many initiated by IRPC to repay society with a focus on better education, and opportunities for the younger generation to demonstrate their abilities and knowledge to generate awareness of society to live together constructively and creating awareness of plastic consumption with responsibility. The program became a motivation tool for better teamwork among university students and an opportunity for them to best harness their knowledge.



In addition, IRPC unceasingly continues the innovation and development of Green Products under the Green Concept, one of which was a joint-venture project with Café Amazon at the CRC branch at PTT Headquarters. IRPC installed all furniture and appliance items made of plastics mixed with natural materials and hence environmentally friendly. The shop's reopening was made on November 26, 2018. This plastic-natural mixture is widely known as Green ABS, a mixture of plastics with natural rubber with a 10-40% rubber content, introduced by IRPC as the world's first product of its kind. IRPC also introduced Wood Plastics Composite or plastic with a natural wood mixture for the making of household furniture, appliance or decorating items. The natural wood materials are wooden scrap or the leftover of woods from industrial works. The Wood Plastics Composite is a substitute product for natural wood and can be used to preserve natural wood. Bio-Maxx L-Cement is another innovative product of IRPC. It is a mixture of plastics and cement that is very durable, hard and provides a feel of cement. The molding process of this mixture can blend with various colors and other materials. The end products are mostly for decoration. With a venture with PTTOR, IRPC has consistently created awareness of creative values toward sustainability of business, community and the environment. With its world's pioneering position and core policy toward R&D of environmentally-friendly

product specialties, IRPC can best respond to the needs of customers and create more value for their products.



Nature of Customers

For speed and flexibility of product distribution with varieties to better serve the needs of customers, especially those with high volumes of orders, IRPC sells all plastic products through agents, distributors and traders with nationwide coverage. IRPC also sells directly to plastic molding factories, brand owners of plastic products, and end-users of industrial supply chain operators, including those in packaging, automotive and parts, electrical appliances and electronics, as well as other downstream factories which are part of the petrochemical cluster. IRPC therefore has customers in all sectors of the industry.



Sales and Distribution Channels

Domestic Sale

With a corporate intention to support national development and recognition that plastic is a strategic raw material for innumerable consumer products, IRPC set out its 2018 sale target that 51% of total sales must be for domestic sale, driven by the demand of domestic customers. To achieve this target, IRPC has sales agreements with 21 agents, distributors and traders, most with more than 20 years direct work relationship with IRPC. With a full spectrum of product variety and production capability in the entire petrochemical chain, IRPC can significantly help save costs on sales, marketing and administration of their agents, distributors and traders, leading to stronger business relationship. IRPC also offers direct sales with credible customers who can facilitate payment on good terms.

Export

IRPC continued its 2018 international sales through long-term and good relationship agents. The international market strategy focused on the high quality and variety of products, technical services, and consultancy services to customers on product selection and product development. The IRPC international agent network is closely connected with industry-wide end-users in all major markets with high volumes of plastic products in China, Indonesia, Turkey, Vietnam and Australia. Exports have been expanded into other markets, including Africa, Europe, the U.S., the Middle East and Australia. IRPC products are now distributed in more than 100 countries worldwide.

3. Market Overview and Competition: Power and Utility Businesses

IRPC deployed two main strategies in 2018: strengthening relationship with existing customers through year-round marketing campaigns and activities, and cost-control to maximize the efficiency of power generation and steam production.

An additional 54 MW of power and 170 tons per hour of steam were generated by IRPC's joint venture IRPC Clean Power Company Limited. This power generation and steam production have significantly increased security and stability of the utility system for IRPC and all its customers whose facilities are located within IRPC Industrial Zone.

4. Market Overview and Competition: Port and Tank Businesses

IRPC deployed strategies to attract new customers and generate more revenue from major customers in the bulk cargo group, including steel, palm shell, coal, granite, sand, fertilizers and building materials. Out of 1.5 million tons of bulk cargoes, 750,000 tons were steel products. Steel accounted for 50% of the total bulk cargoes. Moreover, IRPC made improvement in the port for petrochemicals and liquefied petroleum gas (LPG) to support shipment of its new products generated from various projects, including the UHV Project, PPE Project, PPC Project, and from external projects. These products accounted for 16.5 million tons. For the tank services, more than 760,000 tons was delivered through pipes in 2018, an increase of

12% or 124,000 tons from 2017. The increase was made possible by expansion of the tank system; additional products were mostly ethanol and methanol, with some crude oil and refined products.

Outlook

With growth projection of 3.5 – 4.5% from the Office of National Economic and Social Development Board reported on November 19, 2018, the economic growth of Thailand will be driven by:

- Higher private consumption
- Higher public and private investments
- Recovery of the tourism sector
- Continued global economic expansion supporting Thai exports
- Clearer directions of global trade, production and investment.

The overall export is set to rise by 4.6%, and private consumption and investment are also set to rise by 4.2% and 5.1% respectively. The general inflation is expected to move within a range of 0.7% – 1.7%, and the current account deficit will be around 5.8% of GDP.

The overall economy will likely be boosted by several mega-projects, most of which are initiated by the government. These sizeable projects will subsequently drive growth in the steel industry, the main customer group of IRPC's port services. Higher volumes of port activities are therefore expected.

- **Bulk & container terminal:** IRPC will focus on offshore services, fabrication projects and marine commodity transport, to support the government-initiated Eastern Economic Corridor (EEC) mega-project.
- **Liquid & chemical terminal:** For port services for petrochemical and liquified petroleum products, IRPC focuses on maintaining its development and expansion plan in 2019 to cope with more activities, in addition to business opportunity identification in the southern area, particularly in Chana District, Songkhla.

5. Market Overview and Competition: Asset Management Business

Under a joint-venture agreement with WHA Industrial Development Public Company Limited (WHAID), IRPC founded a new company with 40% equity, with the rest held by WHAID, to prepare for asset management business opportunities in the Eastern Economic Corridor (EEC) mega-project. Projects under the EEC scheme which could provide opportunities for IRPC include the high-speed rail linking three airports, the double-tracked rail lines connecting three ports, and the motorway network linking cities within the EEC area. The Eastern Special Development Zone Act was promulgated on May 14, 2018, stipulating purposes and procedures of land use, providing a legal structure to allow landowners of any area within the EEC to seek licenses of the special economic zone, and a 99-year land lease.

Several land properties of IRPC have been upgraded for more value, including the annexation of land property in Pa Yup Nai Subdistrict, Wang Chan District, Rayong, to the EECi (Eastern Economic Corridor of Innovation) to be managed by PTT Public Company Limited, to support the national strategy. The EECi is a project to advance national competitiveness and promote development of the township, a town with a full Smart City concept, where the environment is preserved, with land use planning for commercial, residential and schools. The EECi is hoped to generate more business opportunities and a framework for future development projects. IRPC, in addition, plans to develop one of their land properties in Chana District, Songkhla. The 2,200-rai land plot is to be developed for an industrial park and commercial services to support future expansion of a deep-sea port and a power plant under the Southern Economic Corridor scheme (SEC), driven by the government.



Revenue Structure

IRPC and its subsidiaries generated revenues from distribution of petroleum and petrochemical products at 71% and 28% respectively. Petroleum products consist of diesel, gasoline, fuel oil, lube base, and asphalt whereas petrochemical products consist of olefins, aromatics, and polymers. In addition, IRPC earned income from other businesses, accounting for 1%, mainly from power and public utilities. IRPC's net sales in 2018 were at Baht 258,919 billion as described below:

Type of Business	Operations/ % of shares held by IRPC	2016		2017		2018	
		Million Baht	%	Million Baht	%	Million Baht	%
1. Petroleum	IRPC Plc IRPC Oil Co., Ltd. (99.99%)	113,152	67%	135,125	68%	182,953	71%
2. Petrochemical	IRPC Plc IRPC A&L Co., Ltd. IRPC Polyol Co., Ltd. ⁽¹⁾	52,115	31%	59,728	30%	72,740	28%
3. Other business ⁽²⁾	IRPC Plc	3,082	2%	2,741	2%	3,226	1%
Total net sales revenue		168,349	100%	197,594	100%	258,919	100%
Profit (loss) sharing from investment in associated companies and shareholding in joint-venture companies		125		388		679	
Percentage of revenue Domestic : Overseas		58% : 42%		57% : 43%		57% : 43%	

Note :

- On January 1, 2018, IRPC held 74.99% shares in IRPC Polyol Co., Ltd., and on April 30, 2018, it diluted 25% of its investment to PCC Rokita SA, making IRPC and PCC Rokita hold 50% each in the company, whose status then changed from a subsidiary to a joint venture.
- Other businesses are power and public utilities.

Connected Transactions



For fiscal year 2018, IRPC and 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 of agreements at reasonable prices and fair conditions. The relationship and connected transactions are described below:

No.	Connected Party/ Relationship	Transaction	2018	2017	Nature and Condition
1.	PTT Plc (PTT) Relationship: IRPC's major shareholder with 48.05% - Common director Mr. Chansin Treenuchagron - PTT Management on IRPC Board: Mr. Kris Imsang Mr. Preecha Pocatanaawat Mr. Worawat Pitayasiri Mr. Sukrit Surabotsopon	- Sale of goods - Purchase of goods - Other revenue - Sales and administrative expenses - Interest payables - Account receivables - Account payables - Other receivables - Other payables	14,973 180,340 280 56 - 3 22,782 6 3	21,495 130,474 7 39 22 1,477 22,675 - -	IRPC sold petroleum products to PTT IRPC bought crude and natural gas from PTT IRPC sold a plot of land at Amphoe Wang Chan, Rayong, and received logistics compensation from PTT IRPC paid personnel expenses to PTT IRPC paid short-term interest (ICBL) to PTT
2.	PTT Oil and Retail Business Plc (PTTOR) Relationship: 99.99% shares held by PTT Plc	- Sale of goods - Purchase of goods - Account receivables - Account payables	15,390 7 1,455 2	- - - -	IRPC sold petroleum products to PTTOR, such as gasoline and high-speed diesel IRPC bought lubricants from PTTOR
3.	Thai Oil Plc (TOP) Relationship: 48.03% shares held by PTT Plc	- Sale of goods - Revenue from dividends - Account receivables	346 - 18	94 70 8	IRPC provided tank storage service and sold crude oil to TOP IRPC received dividends from TOP shares
4.	Thai Lube Base Plc (TLB) Relationship: 99.99% shares held by TOP	- Sale of goods - Purchase of goods	140 -	327 20	IRPC sold aromatics to TLB IRPC bought asphalt and lube base oil from TLB
5.	Thai Paraxylene Co., Ltd. (TPX) Relationship: 99.99% shares held by TOP	- Sale of goods - Purchase of goods - Account payables	165 1,299 (45)	- 1,178 134	IRPC sold aromatics to TPX IRPC bought aromatics from TPX Debit note for product price difference
6.	Thai Oil Marine Co., Ltd. (TOM) Relationship: 99.99% shares held by TOP	- Service revenue - Account receivables	33 4	17 3	IRPC provided port services to TOM
7.	TOP Solvent Co., Ltd. (TS) Relationship: 99.99% shares held by Thai Oil Solvent Co., Ltd.	- Sale of goods - Purchase of goods - Account receivables - Account payables	1,448 107 104 8	1,259 81 116 8	IRPC sold aromatics to TS IRPC bought solvents from TS
8.	TOP Solvent (Vietnam) Co., Ltd. Relationship: 99.99% shares held by TOP Solvent Co., Ltd.	- Sale of goods - Account receivables	791 29	446 22	IRPC sold aromatics to TOP Solvent (Vietnam))

No.	Connected Party/ Relationship	Transaction	2018	2017	Nature and Condition
9.	Sak Chaisidhi Co., Ltd. (SAKC) Relationship: 80.52% shares held by TOP Solvent Co., Ltd.	- Sale of goods - Account receivables	287 5	314 10	IRPC sold aromatics to SAKC
10.	PTT Energy Solutions Co., Ltd. (PTTES) Relationship: 40.00% shares held by PTT Plc 20.00% shares held by IRPC Plc - Common director: Mr. Sukrit Surabotsopon	- Sales and administrative expenses	115	135	IRPC paid PTES for technical services
11.	Energy Complex Co., Ltd. (EnCo) Relationship: 50.00% shares held by PTT Plc - Common directors: Mr. Kris Imsang Mr. Preecha Pocatanawat	- Sales and administrative expenses	95	95	IRPC rented offices and facilities from EnCo
12.	PTT International Trading Pte. Ltd. (PTTT) Relationship: 99.99% shares held by PTT Plc	- Sale of goods - Purchase of goods - Sales and administrative expenses - Revenue (expenses) from oil futures contracts - Account receivables - Other receivables - Other payables	23,052 331 - 12 1,207 5 -	14,782 - 10 (107) 1,505 - 87	IRPC sold petroleum products to PTTT IRPC bought petroleum products from PTTT IRPC paid PTTT for marine shipping services Expenses from oil futures contracts entered with PTTT
13.	Dhipaya Insurance Plc (TIP) Relationship: 13.33% shares held by PTT Plc	- Sales and administrative expenses - Other payables	259 2	285 -	IRPC paid premiums for plants and accident insurance to TIP
14.	PTT Tank Terminal Co., Ltd. (PTTANK) Relationship: 99.99% shares held by PTT Plc	- Other revenue - Other receivables	3 1	4 1	IRPC received personnel wages from PTTTANK
15.	Business Services Alliance Co. Ltd. (BSA) Relationship: 25.00% shares held by PTT Plc - Common director: Mr. Preecha Pocatanawat	- Other revenue - Sales and administrative expenses - Other payables	3 261 2	3 266 2	IRPC earned revenue for store administrative services from BSA IRPC paid personnel wages to BSA
16.	Sport Services Alliance Co., Ltd. (SSA) Relationship: 99.99% shares held by BSA - IRPC Management on SSA Board: Mr. Phothiwat Paopongchuang	- Sales and administrative expenses	5	5	IRPC funded publicity for the PTT Rayong soccer team for SSA
17.	PTT Exploration and Production Plc (PTTEP) Relationship: 65.29% shares held by PTT Plc - Common director: Mr. Chansin Treenuchagron	- Other revenue	-	1	IRPC provided training services to PTTEP

No.	Connected Party/ Relationship	Transaction	2018	2017	Nature and Condition
18.	PTT Global Chemical Plc (GC) Relationship: 48.18% shares held by PTT Plc	- Sale of goods - Purchase of goods - Other revenue - Sales and administrative expenses - Account receivables - Account payables - Other receivables	19,954 25,809 2 7 1,517 1,941 -	13,850 19,547 7 - 1,303 1,911 2	IRPC sold petroleum products to GC IRPC bought petroleum products from GC IRPC provided research services to GC IRPC paid personnel wages to GC
19.	GC Marketing Solutions Co., Ltd. (GCM) * Relationship: 99.00% shares held by GC	- Sale of goods - Purchase of goods - Account receivables - Account payables	249 571 15 33	124 594 8 40	IRPC sold polymers to GCM IRPC bought polymers from GCM
20.	GC Logistics Solutions Co., Ltd. (GCL) * Relationship: 99.00% shares held by GC	- Sales and administrative expenses	3	2	IRPC paid GCL for transportation services
21.	GC Styrenics Co., Ltd. * Relationship: 99.99% shares held by GC	- Sale of goods - Account receivables	231 50	2 -	IRPC sold aromatics to GC Styrenics
22.	GC Glycol Co., Ltd. * Relationship: 99.99% shares held by GC	- Purchase of goods - Account payables	13 2	40 11	IRPC bought petrochemicals from GC Glycol
23.	GC Maintenance and Engineering Co., Ltd. (GCME) * Relationship: 99.99% shares held by GC	- Sales and administrative expenses - Other payables	2 2	42 5	IRPC paid GCME personnel wages and for engineering services
24.	PTT Asahi Chemicals Co., Ltd. (PTTAC) Relationship: 50.00% shares held by GC	- Purchase of goods - Other payables	2,241 185	1,693 198	IRPC bought acrylonitrile (AN) from PTTAC
25.	PTT Digital Solution Co., Ltd. Relationship: 40.00% shares held by GC 20.00% shares held by PTT Plc	- Sales and administrative expenses - Other payables	31 1	32 26	IRPC paid PTT Digital for IT services
26.	NPC Safety and Environmental Service Co., Ltd. (NPC & SE) Relationship: 99.99% shares held by GC	- Purchase of goods - Sales and administrative expenses	1 2	- 2	IRPC bought safety equipment from NPC S&E IRPC paid NPC S&E for safety equipment rent
27.	Global Green Chemicals Plc (GGC) Relationship: 72.29% shares held by GC	- Purchase of goods - Account payables	255 62	- -	IRPC bought petroleum products from GGC
28.	Polymer Marketing DMCC Co., Ltd. (PMDMCC) Relationship: 99.99% shares held by GC Marketing Solutions Co., Ltd.	- Sale of goods - Account receivables	72 8	104 -	IRPC sold polymers to PMDMCC

No.	Connected Party/ Relationship	Transaction	2018	2017	Nature and Condition
29.	IRPC Clean Power Co., Ltd. (IRPC-CP)	- Sale of goods and services	62	69	IRPC sold power and water and provided engineering services to IRPC-CP
	Relationship:	- Purchase of goods	2,308	1,660	IRPC bought power and steam from IRPC-CP
	51.00% shares held by Global Power Synergy Plc	- Other revenue	28	6	IRPC received maintenance services fees and personnel wages from IRPC-CP
	48.99% shares held by IRPC Plc	- Account receivables	6	10	
	- IRPC Management on IRPC-CP Board:	- Account payables	342	103	
	Ms. Nidcha Jirametthanakij	- Other receivables	5	-	
	Ms. Wanida Utaisomnapa	- Other payables	226	197	

Note:

* In December 2018, the following related companies had been renamed:

- PTT Polymer Marketing Co., Ltd., renamed as GC Marketing Solutions Co., Ltd.
- PTT Polymer Logistics Co., Ltd., renamed as GC Logistics Solutions Co., Ltd.
- Thai Styrenics Co., Ltd., renamed as GC Styrenics Co., Ltd.
- TOC Glycol Co., Ltd., renamed as GC Glycol Co., Ltd.
- PTT Maintenance and Engineering Co., Ltd., renamed as GC Maintenance and Engineering Co., Ltd.

Connected Transactions Policy and Requirements

Since IRPC and its subsidiaries operate fully integrated refining and petrochemical businesses, similar to the operations of PTT Group companies, connected transactions between IRPC, its subsidiaries, and PTT affiliates are inevitable and therefore regarded as normal business operations. These transactions included purchases and sales of oil products and related services, as well as other normal business-supporting transactions, which were executed at arm's length with the same pricing and conditions as those executed with a third party and without transfer of benefits between the concerned parties. IRPC has made prudent, sensible, and independent consideration of these connected transactions in its best interests.

Connected Transaction Measures

IRPC complied with SEC's and SET's requirements for connected transactions. The Board has prudently considered the transactions with possible conflicts of interests to ensure that they were executed in a fair, transparent, and sensible manner. Any directors, employees, or related parties with potential conflicts of interest must leave a given meeting and must not vote on the agenda item in question.

Moreover, each quarter the Audit Committee reviews IRPC's and its subsidiaries' connected transactions with related companies or parties to avoid conflicts of interest and ensure maximum benefit for IRPC.

Policy on Future Connected Transactions

IRPC's future connected transactions will be conducted in the normal course of business in adherence to suitable conditions and fair market prices. This practice is meant to ensure the best interests of all shareholders and stakeholders while ensuring strict conformity to the corporate governance policy as well as SEC's 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, based on suitable reference market prices, with the same pricing and conditions as those executed with a third party, and in conformity to the corporate governance policy, as well as SEC's and SET's regulatory requirements.



PERFORMANCE SUMMARY & MANAGEMENT ANALYSIS

Message from the President

Business Strategy

Performance Summary

Research and Development for Excellence

Management Discussion and Analysis



MESSAGE FROM THE PRESIDENT

“

I wish to take this opportunity to thank the shareholders and all stakeholders for their continued support to our business execution and would like to assure you of the competency and potential of the new President who will undoubtedly lead IRPC to sustainable growth and in the best interests of shareholders, society and all stakeholders.

”

Mr. Sukrit Surabotsopon
President

(Appointed: 1 Oct 2013 - 30 Jan 2019)



Dear Shareholders,

IRPC's performance for 2018 was lower than the target due to the drastic drop of oil prices toward the end of the year from the increased oil supply, in particular from the US, and the lower-than-expected global economic expansion, which resulted in stock losses in the fourth quarter. Nevertheless, IRPC has generated profits from other investment projects, including the Upstream Project for Hygiene and Value-Added Products (UHV), which has increased the efficiency of UHV units for further value addition by increasing gasoline capacity to over 25 million liters per month; the Fully Integrated Polypropylene Expansion Project and the Polypropylene Compounding Project (PPE/PPC) to increase polypropylene capacity by operating commercially throughout the year for the first time; and other significant projects under the strategic plans—the EVEREST Forever (E4E) Project, a continuation of the Everest Project to increase efficiency as well as additional profits for the company, and IRPC 4.0, which applied state-of-the-art digital systems and technologies to enhance corporate performance efficiency. All these projects rendered IRPC THB 18.344 billion in EBITDA and Baht 7.735 billion in net profit.

The year 2019 will be extremely challenging, as IRPC has set a target for a higher profit than previous years, with the GDP strategic plan as the driver covering EVEREST Forever, MARS, Galaxy, and R&D Excellence under the Digital strategy, and HR Excellence under the People strategy, with IRPC DNA as the driving force. As such, I am confident that we will achieve the goal.

IRPC has defined a vision to be the “Leading Integrated Petrochemical Complex in Asia by 2020”, a grave challenge that needs the collaboration of all across the company. IRPC has refined its HR management system to perfection in all aspects so as to pursue “HR Excellence” through appropriate organization restructuring for flexible management, while cultivating essential corporate values of the workforce to enhance their capability, recruiting qualified personnel, creating career motivation, and developing leadership, all of which will lead to a good corporate culture in line with corporate growth.

Besides business value addition for the utmost satisfaction of the shareholders, IRPC adheres to the philosophy for sustainable growth with the right balance between the economy, society, community and the environment. This year IRPC set a policy to set aside a budget of 3% of the past three years' average profits for social and environmental projects nationwide to foster confidence among communities and society.

The success of this past year signified implementation under a clear vision, goals, policies and strategies, together with the commitment and dedication of the Board, executives and the workforce in their duties. As I retire as President on January 30, 2019, I wish to take this opportunity to thank the shareholders and all stakeholders for their continued support to our business execution and would like to assure you of the competency and potential of the new President, Mr. Noppadol Pinsupa, who will undoubtedly lead IRPC to sustainable growth and in the best interests of shareholders, society and all stakeholders.



“

Please accept my deep gratitude for your trust and be assured of my commitment to performing the tasks assigned to me as director and President with utmost efficiency, honesty, integrity and in an ethical and transparent manner to ensure that IRPC can create added value for business growth in the long run.

”

Mr. Noppadol Pinsupa
President

(Appointed: 1 Feb 2019 – Present)

Dear Shareholders,

IRPC has defined an investment plan to drive the corporation under three powers, or “GDP”. For the first element, G: Power of Growth, IRPC has invested in key projects such as aromatics capacity expansion or MARS (Maximum Aromatics Project), which is expected to see increases in paraxylene capacity to 1.3 million tons a year. The project is scheduled to be completed and commercially operated in 2023: the continuing EVEREST FOREVER (E4E) Project to increase efficiency and revenue for the entire IRPC together with corporate health, and Galaxy to expand the business to cover upstream and downstream. Concerning the second element, D: Power of Digital, or power of technology, we aim to achieve this by employing state-of-the-art digital systems and technologies to enhance the efficiency of production and management operating processes, save costs and time, as a way to manage risk for maximum efficiency through IRPC 4.0. Finally, P: Power of People, we seek to achieve this through human resource development of international standards, to make the most of the potential of all executives and employees for the maximum benefit of the company.

Besides setting the vision to become the “Leading Integrated Petrochemical Complex in Asia by 2020”, IRPC has focused on product R&D for a better quality of life and environment, and strive to raise the proportion of special product processing to enhance its competitiveness and seek new long-term business opportunities leading to the upgrading of R&D competency to be on a par with leading international companies. In 2018 IRPC’s innovation

“Convert HDPE Plant to Specialty Pipe-Grade” won the “Best Innovative Company Awards” from the SET Awards and the “Innovative Organization Award” from the National Innovation Agency (Public Organization) (NIA).

IRPC is committed to business conduct under corporate governance principles together with social responsibility, the core pillars of corporate governance, to drive IRPC to become a firm and sustainable Leading Integrated Petrochemical Complex in Asia. This earned IRPC the Best Sustainability Awards from SET for two consecutive years and the NACC Integrity Award 2018, presented by the Office of the National Anti-Corruption Commission. IRPC was also one of the 13 organizations from the public, private and state enterprise sectors awarded with the Thailand Quality Class (TQC) Award 2018. These remarkable awards represent IRPC’s sustainable growth that everyone at the company should be proud of.

May I take this opportunity to express my sincere appreciation to the shareholders and the Board of Directors and our customers, business partners, financial institutions, communities, and the workforce as well as all related parties for the support to and confidence in IRPC’s business conduct. Please accept my deep gratitude for your trust and be assured of my commitment to performing the tasks assigned to me as director and President with utmost efficiency, honesty, integrity and in an ethical and transparent manner to ensure that IRPC can create added value for business growth in the long run in the best interests of all stakeholders and uphold the faith and social value expected from IRPC.



BUSINESS STRATEGIES



LEADING INTEGRATED PETROCHEMICAL COMPLEX IN ASIA BY 2020



2010

2014



- Operational Efficiency Improvement
- Asset Utilization Enhancement
- Product and Service Improvement
- Capacity and Products Expansion

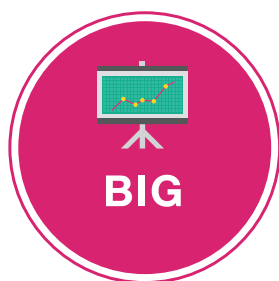
Margin Improvement

- Operational Excellence
- Commercial Excellence
- Procurement Excellence
- HR Excellence

Other Projects Completion

CAPACITY	BEFORE	AFTER
CHP I		
• Electricity	108 MW	307 MW
• Steam	200 T/hr	664 T/hr
PRP	312 KTA	412 KTA
EBSM	200 KTA	260 KTA

Benefit **+135** MUSD



Revenue Growth of 5%
EBITDA Growth of 10%



1st Quartile ROIC
in Petroleum and
Petrochemical Industry



Member of DJSI
Emerging Markets
Universe

2016



2018



Incremental Margin and Organization Health

- Capability Building
- Owner mindset & Performance Orientation
- Cultural Changes

CAPACITY	BEFORE	AFTER
PROPYLENE (UHV)	412 KTA	732 KTA

Fully Integrated PP

CAPACITY	BEFORE	AFTER
PP (PPE-PPC)	475 KTA	775 KTA

POWER GDP

- G** Power of Growth
- D** Power of Digital
- P** Power of People



INDIVIDUAL OWNERSHIP
SYNERGY
PERFORMANCE EXCELLENCE
INNOVATION
RESPONSIBILITY FOR SOCIETY
INTEGRITY & ETHICS
TRUST & RESPECT



Performance Summary

IRPC's business strategies focused on establishing its capability and strengths for sustainable growth into a "Leading Integrated Petrochemical Complex in Asia by 2020" while maintaining its standards and developing products and services to meet market demand.

Here are the performance highlights for the year.



Economic

More intensified business competition due to external factors caused IRPC to focus on strengthening its core business and devised strategies that focused on establishing flexibility under prevailing circumstances. This year world GDP growth was 3.5% (IMF, January 2019), thanks to the recovery of several regions' labor markets along with continued rising consumers' and the private sector's confidence. Yet, risk factors remained, including the monetary policies of developed countries; volatility of money markets and money values of emerging nations with weak financial fundamentals and high inflation like Turkey, Argentina, South Africa, and Brazil; international political issues involving the US, Iran, and Saudi Arabia; and trade protectionistic measures of the US and major trading partners, in particular China. These factors caused economic growth to slow down.

Meanwhile, the key economies (the US, EU, and China) tended to pick up. The US boasted healthier growth thanks to consumption, private investment, and rising employment; negative factors resulted from political issues and fragile government stability, as seen in economic and political policies toward key trading partners. On the other hand, EU continued its growth, thanks to private investment that had risen with exports, lower unemployment, and continued relaxed monetary policies. Nevertheless, risks remained in Brexit negotiations, which still proved inconclusive, along with lower productivity. For China, growth was substantial despite the trend to slow down due to external factors

and stricter monetary control. As far as impacts of the US trade measures were concerned, China could partly compensate by its government policy to stimulate the economy and domestic demand.

Thailand's GDP growth this year was about 4.6% (IMF, January 2019), contributed by extremely healthy export growth, particularly that of agricultural produce, food, and electronics products, all thanks to the economic recovery of trading partners and rising world commodity prices; ongoing expansion in the tourism sector; relatively resilient private consumption; foreign investment under the EEC, forging ahead with clearer promotional measures; and transport infrastructure in areas with more tangible development plans.

Due to the above, the first half of the year saw higher oil prices than the previous year, hovering at a high level buoyed by OPEC and other producers, which had reached an agreement on output cuts; the US-Iran political issues; trade protectionistic measures between the US and notably China; and the US inventory of goods. These key factors resulted in Dubai's average price of US\$69 per barrel this year.

Below are the highlights of IRPC's performance 2018.

Production Operations

Below are the highlights of production operations.

1. Implementation of process stability maintenance plan

IRPC underwent the annual major turnaround, including the Inspection Roadmap and the Plant Health Check Projects to inspect the strength of assorted machinery and measurement tools. Also, the application of the Integrated Database Management System (idMS) helped analyze all incidents and monitored operation to prevent recurrence. This year's plant reliability posted 99.86% performance against the goal of 99.5%.

2. Energy management

IRPC's ability to systematically manage energy was proved through an energy efficiency project. Specifically, more natural gas replaced fuel oil in processes, and a management software helped improve internal processes for better process efficiency. Also, by efficiently controlling and monitoring outcomes, IRPC successfully controlled hydrocarbon compound losses in processes and cut pollutant emissions. As proof, the energy intensity index (EII) met the goal of 89%, equivalent to energy reduction of 939,206 gigajoules, or THB 364 million's saving.

3. QSHE management

- **Quality:** IRPC applied quality tools, including QCC (Quality Control Circle) and TPM (Total Productive Maintenance and Management) to grow productivity for operators while supporting performance on plant confidence through integration with the IRPC OEMS for value chain management to address and satisfy all stakeholders' needs and expectations.
- **Safety and occupational health:** IRPC values safety first for personal and process safety by operating with international safety standards under its OEMS with a focus on SSHE (Security, Safety, Health, and Environment) management.

- **Environment:** IRPC values environmental stewardship through green process improvement, and promotion of clean energy, and applied 3Rs (reduce, reuse, recycle) to the management of water, air, and waste. Details of our execution of QSHE appear under QSHE on page 228-235.

Key strategic project operation for business growth

Here are key strategic moves of this year:

POWER OF



1. Power of GDP:

The Power of GDP strategy contains directions and plans underlined by three following key power foundations in parallel with socio-environmental-governance balance:



POWER OF GROWTH

Power of Growth: IRPC's approach to extend its investment scope for relentless growth is to focus on raising the productivity of petrochemicals, improvement of capability and production efficiency, cooperation with partners for incremental interests, and development of high-value products with innovation excellence. The four key projects are as follows:



EVEREST Forever (E4E) Project: This project extends the successes of the Everest Project, designed to improve efficiency, forge incremental profits from operations, strengthen the organization health and maintain competitiveness in area of operations, integrated supply chain, commercial, procurement, HR, and corporate areas. This year IRPC reaped the benefit of THB 9.367 billion (38% up from the previous year), as detailed below.

- **Operations area**, focusing on raising efficiency and process stability, contributed to THB 4.643 billion against the goal of THB 4.736 billion, consisting of
 - Unit operation and energy improvement through a focus on process efficiency improvement, energy consumption reduction or switching to lower-cost energy forms together with loss-on the process reduction to make it reusable in parallel with model plant operation to change employees' attitudes and behavior and efficient teamwork management.

- Maintenance and reliability improvement by lowering risks of unplanned shutdowns and executing process improvement to ensure planned execution. This year's availability was about 97.5% as planned.



EVEREST + E4E Reaped

9.367

Billion Baht



Process Stability

97.5%

- **Integrated supply chain** through improving process planning tools for higher efficiency and precision of outcome analysis, together with the application of new tools accepted by leading companies, including Advanced Optimized PIMS (PIMS-AO), P-PIMS, ORION, and Multi-Blending Optimization (MBO) for crude oil purchase planning as needed by IRPC, which successfully produced THB 2.101 billion in EBIT against the THB 2.456 billion goal.
- **Commercial area**, focusing on raising commercial operating efficiency and raising incremental profits from routine operation, development for higher team capability with a commitment to pursue ways to make profits through brainstorming for new projects while nurturing ownership awareness and enhancing problem-solving skills. Teams coordinated to achieve goals. This year, a total of THB 2.054 billion in EBIT was booked as opposed to the THB 1.870 billion goal.
- **Procurement area**, focusing on the management of material procurement together with strategic services and on enhancing procurement teams' caliber to

adopt strategic attitudes and operating efficiency by leveraging new tools to up bargaining power with explicit regard for ethics, transparency, and fairness in business dealings, increased by THB 31 million in EBIT from THB 234 million in 2017 together with the adoption of new international-standard tools, including e-Auction, e-Catalog, and e-Buyer to upgrade its practices to digital procurement cut our procurement costs of goods and services.

- **HR area**, focusing on the management of human resources for maximum capability, the encouragement of their utmost showcasing of their capability and responsibility, and efficient outsourcing. As a result, this year IRPC increased THB 1 million in EBIT as compared to THB 18 million in 2017.
- **Corporate area**, with a focus on functional excellence across functions, a fundamental for developing cross-functional excellence, including the reduction of expenses for IT equipment, reduction of financial and administration expenses, and budget management. This year IRPC posted THB 537 million in EBIT as opposed to the goal of THB 275 million.



Maximum Aromatics (MARS) Project: This is a paraxylene production of 1.3 million tons per year (TPA) and benzene production of 500 KTA (thousand tons per year), value addition to IRPC's feedstock through advanced processing technology. It hikes IRPC's competitiveness by increasing the proportion of petrochemicals from 17% to 27% by weight. The project is currently under engineering design and investment cost-effectiveness assessment. Commercial operation is due by the end of 2023.



Galaxy Project: This project establishes cooperation with business allies to extend and create incremental profits by investing and co-investing to forge synergy leading to growth.



R&D Excellence Project: This projects seeks to develop high-value products through innovation excellence by focusing on products involved with IRPC's core business, including PP and ABS, and New S-Curve opportunities, including Li-S, transparent conductive film, and OLED.



POWER OF DIGITAL

Power of Digital: The digitalization and application of advanced technology enhance business efficiency and develop customer services, known as the IRPC 4.0 Project, created added value over THB 3.3 billion in 20 months, which is made up of:



OPS 4.0: Smart Operation (AI) for production control and planning, leveraging artificial intelligence.



ISC 4.0: Analysis of customers' buying behavior and business partners' readiness to deliver feedstock in IRPC's supply chain management.



CCM 4.0: Solution to Customer-Centric Digital needs by penetrating customers' needs and addressing them swiftly.



PRO 4.0: Striving for Lean Procurement, eliminating work process redundancies, and improving procurement planning efficiency to improve cost competitiveness.



ERP 4.0: Emphasis on changing data management methods and corporate IT infrastructure toward excellence.



Created added value over

3.3

Billion Baht in 20 Months

POWER OF PEOPLE

Power of People: IRPC's approach for human resource management entails a suitable corporate structure for flexible administration, cultivation of a corporate culture to grow employees' capability, selection of proper personnel, inspiration of people to work, and development of leadership to galvanize these into a new corporate culture in line with IRPC's growth. Three key projects make up this effort:



Truly embed and Live the IRPC DNA: This year IRPC sought to cultivate understanding among employees and continually measure responses and behavior display under IRPC DNA.



Develop Next Generation of Top 30 Leaders: The project analyzes corporate needs and prepares development plans to recruit personnel to sustain future changes in the corporation.



Continue to Establish Lean, Fit-for-Purpose Organization: The project designs the organizational structure and plans HR allocation for the long term; digitalization is to be introduced to work processes for knowledge transfer and extension of success.

2. Other key investment projects

Besides projects under GDP strategies, IRPC commands other projects, UHV (Upstream Project for Hygiene and Value-Added Products): This project improves the quality of low-value heavy oil and add value to it, thus elevating and honing capability for IRPC. Key products consist of propylene and heavy naphtha, with propylene as feedstock for the PPE and PPC projects, whereas heavy naphtha is feedstock for paraxylene under the MARS Project. The UHV Project, wrapped up in 2015, went commercial in 2016. For optimal benefit, IRPC extended work on UHV as described below:

- **The Gasoline Maximization Project:** This undertaking raised the gasoline capacity from 95 million to 120 million liters a month in response to the domestic gasoline market, in turn raising IRPC's market share and income by about THB 870 million a year.
- **The RDCC Catalyst Reformulation Project:** This project raised propylene output from 18% to 20%, wrapped up in August 2018.
- **The UHV Catalyst Cooler Project:** This project grows production capability by using heavy oil as a raw material while doing away with temperature constraints in the catalyst regenerator. It is currently under engineering design, due for completion in the first quarter of 2019.
- **Fully Integrated Polypropylene Project:** This project improves and expands the PP capacity to 300 KTA, giving IRPC a total capacity of 775 KTA to meet the needs of current customers while accommodating the growth of domestic and AEC markets, particularly high-growth industries, namely automotive, electric appliances, and food containers. Two mini-projects make up this project:

- **PPE (PP Expansion Project):** This project grows capacity by 160 KTA to a total of 635 KTA. It is currently on full-steam production.
- **PPC (PP Compounding Project):** High-efficiency "In-line Compounding" technology is used here for the 140-KTA operation. The propylene compound licensor and producer command the top market share in Japan, supplying products to leading automobile companies like Toyota, Mitsubishi, Honda, and Nissan. Thanks to this process, production was streamlined in response to auto-makers' strategies for cost reduction each year. Project construction is currently on full-steam production.





Business operation

IRPC is committed to becoming Asia's leading petrochemical company. This year its EBITDA amounted to THB 18.344 billion and a net profit THB 7.735 billion. Below are the highlights of key business moves made this year.

1. Petroleum business

IRPC strives to keep domestic customers while growing its petroleum product exports to Indochinese countries with high demand. This year the business grossed THB 182.953 billion in sales revenue, whereas EBITDA came to THB 5.496 billion. Below are strategic implementation highlights.

- Pricing strategy: IRPC sells through channels of maximum profits, setting fuel prices that fit market situations and coordinating cooperation with affiliates, with a focus on competitive prices to maintain IRPC's market shares, growing both the number of customers and the sales volumes. Finally, it develops price analytical tools that lead to novel sales strategy development.
- Product quality strategy: IRPC focuses on maintaining product quality standards for value addition.
- Service strategy: IRPC boasts purchase ordering with a most advanced system, the first company in the regional petroleum business to do so. To elaborate, transactions are done on PDA on mobile phones on the IRPC Oil on Net (IRON) platform.

2. Petrochemical business

To profit through incremental spreads, IRPC focuses on relentlessly promoting and supporting R&D of special-grade products, deciding the sales proportions of these products at 60% by 2020. This year the

petrochemical business generated THB 72.739 billion in sales revenue; domestic sales accounted for 56%; exports, 44%. EBITDA totaled THB 10.728 billion. Below are key strategies:

- Pricing: IRPC focuses on being a low-cost producer in an integrated petrochemical business, equipped with a complete production support system. Included are properties and outstanding characteristics of products that meet customers' needs. Customers' benefit is IRPC's main consideration.
- Product quality and diversity strategy: As Thailand's petrochemical pioneer, IRPC commands experience in product R&D, conducted closely and continually jointly with customers over a long period. As a result, all its polymers have achieved ISO 9001 certification, giving it tremendous capability for boosting customers' confidence in international-standard quality. A wide variety of polymers are produced, including HDPE, PP, EPS, PS, ABS, and SAN, broadening customers' business opportunities and meeting customers' needs.
- Sales promotion strategy: Year-round, IRPC holds sales promotional activities in Thailand and abroad, popularizing its products while fostering relations with customers, thus adding business opportunities.

3. Other support businesses

IRPC runs other businesses in support of its core business, adding income as follows:

- 1. Power and utilities** IRPC focuses on providing quality and integrated services for power, steam, public utilities, and others, including water and air systems, and wastewater systems in support

of and for the continuity of industrial customers' businesses as well as other business services, with due regard for communities, society, and the environment.

This year saw THB 3.227 billion made in revenue, 18% up from the previous year, thanks to higher sales volumes and profit increase through the EVEREST Forever (E4E) project. IRPC also partnered IRPC-CP, which supplies 54 MW of power and 170 tons per hour of steam, thus adding to the business continuity of customers and companies located in IRPC Industrial Zone.



2. Port and tank farm Relentlessly, IRPC has improved the quality of its product tanks and port services with a focus on advanced, international-standard, and safe management systems together with highly experienced personnel to meet customers' diverse needs — all of which add to the competitiveness of Thailand's industrial markets. This year the business generated THB 876 million, 21% up from the previous year. The port business accounted for 43%; the tank farm businesses, 57%. The latter's rising income this year was due to new tank facilities and a higher volume of cargoes through the port. Below are highlights of the port and tank farm business this year.

- Broadened the customer database and generated additional revenue from key customers (bulk and container terminal), including iron ores, palm shells, coal, granite,

sand, fertilizers, and structural goods. The year saw some 1.5 million tons, mostly in the iron ores group of the bulk and container group processed at the port, or about 50%.

- Improvement of liquid petroleum and petrochemical port facilities to accommodate new products from the UHV, PPE, and PPC projects and from other customers, with a turnover of some 16.5 million tons of cargoes.
- The tank services saw some 760,000 tons of cargoes processed at the terminal, a 19% rise from last year, with growth in new services, including ethanol and methanol, together with tank storage of crude oil and refined products.

3. Asset management

IRPC has land in Rayong and other provinces totaling some 12,000 rai, with a goal to manage, study, and develop commercial land in Rayong and other provinces into eco-industrial zones (EIZs)—including industrial estates, industrial zones, and high-potential land—to supplement value to assets, while surveying land to verify ownership, transfer title deeds, and allocate public utilities to customers in the IRPC Industrial Zone. This year it generated THB 269 million, which was closed to the previous year of THB 268 million. The income came from new customers and from related services, while THB 302 million came from sale of land and asset with no potential.

Below are the highlights this year.

- IRPC Industrial Zone: This zone of Rayong (in Amphoe Muang) has today fully developed its infrastructure and public utilities in the hope of serving as the hub linking upstream products (refined products and integrated petrochemicals) to the downstream petrochemical sector to accommodate the needs of high technological industries.
- Industrial Estate Project: IRPC and WHA Industrial Development Plc (WHAID) set up a new joint-venture company, with IRPC holding 40%, under a cooperative strategy to get ready for the expanded industrial economic sector under EEC.

- Chana area: IRPC plans to develop about 2,200 rai of land in Amphoe Chana, Songkhla, in support of industries. The land is to be developed into commercial areas accommodating the expansion of the deepsea port and power plant development project under the government's Southern Economic Corridor (SEC) plan. In addition, IRPC added value to other plots of "potential" land, including annexing land in Tambon Pa Yup Nai, Amphoe Wang Chan, Rayong, into part of EEC under the management of PTT Plc, in full support of the country's strategic project.



Research and Development Operation

Leveraging the R&D Excellence strategy, IRPC aims to upgrade its capability on a par with world-class corporations by focusing on product R&D to increase its competitiveness to retain and grow its market share. Its strategy also includes horizontal and vertical integration, creating more value-added specialty products, and generating a New S-Curve by constantly seeking new long-term business development to achieve business sustainability. The highlights of key R&D operation are as follows:

- Introducing digitalization (innovation process) in project management, enabling systematic monitoring by preparing an R&D Dashboard. Resulting then is administration transparency, while products can efficiently get to market.
- Modification of the Product Development Committee meeting format and procedures to signify mutual decision-making among all business units involved. The change ensures alignment of goals toward new product launch in the market and to jointly and proactively develop solutions to all problems for the optimum benefits to IRPC.
- Seeking new S-Curve and business opportunities through the De Novo Research R&D program focusing on electronic materials, energy storage, and nano-materials. Currently this is under the research operation planning and business plan stage; work will likely start as planned in 2019.
- Supporting new research efforts jointly conducted with leading domestic and international academic institutions, as well as leading corporations, through an open innovation mechanism, including Vidyasirimedhi Institute of Science and Technology (VISTEC), National Science and Technology Development Agency (NSTDA), Japan Advanced Institute of Science and Technology (JAIST), and Haydale Technologies Thailand. The aim is to shorten research time and commercial production risks.
- Construction of the New IRPC Innovation Center to accommodate its personnel and product R&D equipment, set to rise in the future, with a completion date in 2019.

More work details concerning innovation appear in the annual report under Innovation, page 187-191.



Information Technology Operation

IRPC's goal is to become a digital company. For enhanced operating efficiency, it has supported projects designed to improve and develop IT aspects of work by improving the IT infrastructure and network efficiency, with priority given to advanced security, and promotion of technology application to work in support of sound, international-standard management.

IRPC proceeded with the IRPC Data Governance Project to manage and compile Big Data, marked by large volumes, fast changes, and diverse data to aid analysis, decision-making, and business direction-setting. This year it developed internal control and audit with the help of the Governance Risk and Compliance (GRC) Project to track and control its operations compliance with IRPC's policies, rules and regulations. This Continuous Control Monitoring System (CCMS) offers a proactive approach to ensure maximum internal control efficiency and effectiveness.



Financial Operation

To efficiently manage liquidity to duly support its operations and capital projects with a suitable cost of funds, and to manage its financial risks, IRPC has routinely disclosed all due financial data to analysts, investors, and financial institutions.

Key financial operations are highlighted below:

1. Fitch Ratings (Thailand) maintained IRPC's financial credibility at A-(tha) with a "stable" outlook.
2. Standard & Poor's maintained IRPC's financial credibility at BB+ and promoted the outlook to "positive" due to its improved performance.
3. Moody's Investors Service maintained IRPC's financial credibility at Ba1 and improved the outlook to "positive" due to its improved performance.
4. Secured short-term loans:
 - Renewed the loan agreement with PTT Plc. to extend business cooperation and extend the credit line for crude oil payment to 60 days.
 - Renewed the ICBL under which IRPC (the borrower of THB 10 billion in credit line) and IRPC (the lender of THB 1.5 billion in credit line)
5. Activities for shareholders and investors, and securities analysts:
 - Regular meetings with domestic and international shareholders and investors, stock analysts, and fund managers to provide data, directions, and policies, as well as business performance.
 - Seminar participation at SET at "Money Talk@ SET" under the "Outstanding Stocks In-Depth" topic along with executives of Thailand's leading business enterprises so as to assure investors.
 - With PTT Group, staged a booth display of integrated energy and petrochemical business operations at the "SET in the City 2018" under the "Achieving a Brighter Future for Investment" theme.
 - Seminar participation in SET's "Young Financial Star Competition (YFS) 2018" under the SET Corporate Financial Star category under the "Key Information Sources to Get to Know the Company" topic, designed to educate new-generation youths and groom them for technical career paths with listed companies.
 - An IRPC's Knowledge Sharing (KM) seminar under the "Who Gains, Who Pains from IMO 2020" topic for analysts and institutional investors to support performance analysis and fundamentals of IRPC affecting stock prices.

- Joint participation as lecturer under the “Certificate in Investor Relations 2018” training course, designed to educate people about efficient communication and data presentation, organized by the Thai Listed Companies Association (TLCA), TIRC, and CFA Society Thailand.

6. Application of the Blockchain technology, a modern Fintech, to relentlessly improve work efficiency in various projects under the IRPC 4.0 strategic plan.

- International money transfer through the Interledger system on Blockchain In 2017, IRPC in cooperation with Bank of Ayudhya Plc tested the international US dollar transfer system through the Interledger system on Blockchain. Such real-time transfer enabled IRPC to instantly receive payment from customers without the need for corresponding banks and clearing houses in New York as currently done, which takes 3 – 5 days for IRPC to receive payment due to time-zone differences between banks, apart from Bank holidays. This is one of four projects under the Bank of Thailand’s Regulatory Sandbox. The first money transfer success took place on September 5, 2017.
- Electronic letter of guarantee on Blockchain (e-LG) This year IRPC developed a system for managing electronic letters of guarantee on Blockchain (e-LG) by taking part in such technological development with a major bank under the Bank of Thailand’s policy. Today the Bank of Thailand has permitted such system implementation. An e-LG issued on Blockchain carries the same legal obligations as the old hard-copy form, shortening the work period from an average of two weeks to just minutes, thus raising management and control efficiency. IRPC received the first e-LG through Blockchain on November 16, 2018; it is expected that a total of 21 banks will be participating in this project.
- Application of Blockchain to HR management under the B.VER Project In 2019 IRPC applied the B.VER (Blockchain Solution for Academic

Document Verification) to its selection of prospective job applicants. B.VER is Thailand’s first real-time digital platform for transcript verification that can prevent forged educational qualifications. It was developed by Digital Ventures Co., Ltd., a financial innovator affiliated to Siam Commercial Bank, with support from the Ministry of Digital Economy and Society (DE) and leading domestic universities. B.VER will raise work efficiency among all related parties in universities, job applicants, and IRPC. Beginning in January 2019, universities will upload transcripts for academic year 2017 on the service platform.

Legal operation

IRPC’s goal is to administer its legal work in adherence to good governance principles and corporate governance practices. This year’s legal highlights appear below:

1. Legal performance under various investment projects. Domestically, a joint investment project to found WHA Industrial Estate Rayong Co., Ltd., with WHA Industrial Development Plc to develop the WHA Industrial Estate Rayong. Internationally, the Maximum Aromatics (MARS) Project and investment in the e-commerce business or online commerce (PLUS). The focus is on transparency, legitimacy, and the best interests for IRPC and its shareholders.
2. Award of permission from the Marine Department as the first private port licensed to treat waste obtained from berthing vessels. Today work is being accelerated under the plan, which adds some THB 100 million a year in service fees.
3. Actions concerning business licenses related to IRPC’s businesses in a proper, complete, and seamless way.



Human Resources Development

This year's HR development highlights are presented by three key projects:

1. Culture transformation: All through the year, employees played a key role in performing their jobs through the IRPC DNA, a set of behavior promoting business competitiveness, including the mindset change to more of an ownership mindset. Cultivation of values and work culture is ongoing together with performance measurement, resulting in substantial effectiveness.
2. Capability building: Everyone's roles and missions were modified, as was leadership compatible with business strategies. Allying with several institutes engaging in capability building in developing systematic personnel systems, IRPC instituted

learning management systems linking personnel capability building with the development contents of the 10:20:70 approach—meaning learning, counseling, and doing jobs in that proportion. At the same time, employees were allowed to learn online by themselves with SkillLane, a training company, among others. Such development forms a basis for IRPC's rotation of employees to upskill and reskill. This will also groom employees for continually operating at full steam.

IRPC also developed succession planning in parallel with development and recruitment of talents from inside and outside the corporation so as to land executive teams that are poised to drive IRPC into the next era.

3. Lean and Agile Organization IRPC has devised strategic plans for its organization structure and workforce by promoting cross-functional work, flattening organizational layers, shortening the line of command, and applying digital systems to work, among others. Such devised plans aim for productivity based on the present workforce and those due to retire, coupled with challenges posed by less supply in the future labor market.





IRPC has offered PET bottle crushing machine to Wat Pluakket school.



Social

IRPC is committed to running its businesses while highly valuing responsibility to society, communities, and the environment. It cultivates a sense of volunteerism among employees, who should command awareness of doing business with responsibility, transparency, and fair benefit-sharing with all stakeholders to consistently raise the quality of life and improve society.

To show its business intention with true, tangible social responsibility, this year the Board's policy is for IRPC to allocate 3% of its three years' average net profit as the budget for social projects every year on education project community and environmental projects, and project to benefit Thailand at large.

Below are the highlights of CSR projects this year:

1. Promotion of environmental conditions: Key projects included one to resolve flooding around the industrial zone and another (Plastic Rights) on promotion of the responsible use of plastic products.
2. Hygiene and quality of lives: Key projects included a royal prostheses project, Pun Nam Jai Clinic, Mobile Clinic, a project for physical check-ups of the public, a fund for health promotion of communities around the industrial zone, and a project for communities' drinking water.
3. Social improvement: Key projects included the Lam Sai Yong Model Project, a project on community enterprise promotion, a project on volunteers' hearts for community development, and a project on public facilities construction and development.

4. Education: Key projects included scholarships for communities, IRPC Cubic Academy, a Rayong school for the elderly, and a community network learning center.

5. Religion, arts, and culture: Key projects included the annual Kathin Samakkee ceremony, Buddhist robe and candle offering, and Thai shadow puppet theater (Nang Yai, Ban Don Temple).

6. Community relations: Key projects included the annual Open House to allow stakeholders to become aware of IRPC's business and environmental management efforts.

Details of social operation appear in the annual report under CSR, page 210 – 227.



Environmental

IRPC particularly values environmental stewardship through its strategy of efficient resource consumption management, prevention of environmental impacts, improvement of environmentally friendly processes, promotion of clean energy, and the application of the 3Rs principle in the management of water, air, and waste.

The highlights this year were the Pollution Release and Transfer Registers (PRTR) preparation, greenhouse gas emission reduction, VOCs management in the industrial zone, emission control and air quality vigilance, development of the Eco-Industrial Zone, waste management, and reduction of waste to landfill.

Details of environmental operation appear in the annual report under Environment, page 228 – 235.



Corporate Governance

IRPC values ongoing improvement of corporate governance in line with international standards and SET.

Major accomplishments of corporate governance were as follows:

1. Assessment of the Board: This year KPMG Phoomchai Audit Ltd. undertook the task, due for completion in the second quarter of 2019. This action falls under the director development plan (every three years); the first assessment was done in 2015.

2. The 2018 AGM approved the amendment of its articles of association in line with the Order of NCPO No. 21/ 2560, as proposed by the Board.

3. Revision of the CG manual in line with IRPC's articles of association, SET's corporate governance code for listed companies, ASEAN CG Scorecard, anti-corruption, and other international requirements applied to IRPC, including the UN Global Compact, particularly business with due respect for applicable, key human rights aspects.

4. Promotion of knowledge and understanding of laws and regulations that had undergone amendment or new ones: Executives and employees underwent training at external agencies, whereas others attended in-house training on the likes of an international law on anti-dumping and Article 123/ 5 of the organic law on fraud prevention and suppression of 1999.

5. E-Ethics preparation of conflicts of interest reports: This year IRPC issued an announcement on "Preventive Measures for Conflicts of Interest" to nurture understanding and reiterate strict compliance.

6. Participation in "Anti-Corruption Day" activities and other year-round promotional activities for corporate governance at IRPC and PTT Group.

7. Participation as one of the 15 founders of Global Compact Network Thailand (GCNT): The group filed for an association to promote and drive private businesses with adherence to the four aspects of UNGC (labor, human rights, environment, and



IRPC was ranked in the Top Quartile in ASEAN CG Scorecard.

anti-corruption). The association held an inaugural press conference on December 14, 2018.

Details on corporate governance tasks appear in the annual report under Corporate Governance, page 107 – 131.



Risk Management

IRPC is committed to forging awareness among the Board, management, employees, and stakeholders of the importance of applying enterprise risk management to their duties by developing a risk management system that is efficient and effective for IRPC to handle internal and external uncertainties, lower the chances and negative impacts arising from risks, and seek opportunities as well as sustainable business growth. This year IRPC restructured its risk management for greater inclusiveness by adding roles and responsibilities and appointing a Risk Management and Internal Control Committee. Three committees also appointed to be responsible for enterprise risk management as follows.



President attended to rehearse Business Continuity Practice

1. The Board appointed a Risk Management Committee, in charge of setting a policy for corporate risk management oversight to keep risks manageable and bolstering confidence among stakeholders in goal achievement.

2. Risk Management and Internal Control Committee, headed by the President, with senior management as members.

3. Hedging Committee, also headed by the President, to monitor market situations, engage in risk management of prices and volumes of crude oil, feedstock, and petroleum/petrochemicals, logistics prices, and financial transactions.



Summarizing performance of risk management in this year;

Price Volatility Risk

Mitigation approach is as follows.

- Closely monitored and analyzed price situations, together with projecting prices, and weekly reported to the management for preparedness promptly by executives and applicable units.
- Constantly found new grades of crude oil to give IRPC greater flexibility in choosing diverse grades with lower costs. IRPC harnessed LP (linear programming) tools to achieve optimal choices.
- Cut product costs by managing energy and fuel consumption for maximum efficiency, including improved efficiency by trapping heat

in industrial furnaces and managing surplus fuel gas, which saved several million baht a year.

- Managed the inventories of crude oil, petroleum and petrochemical products such that there were minimum impacts from stock gains or stock losses
- Engaged in contracts on derivative trading with defined targets for prices, volumes, and periods for suitable risk management in keeping with business plans.
- Assessed and reviewed related crude oil purchasing processes to raise efficiency and lower risks arising from operating processes by developing RCM (Risk Control Matrix).

Operations Risk

Below are mitigation measures.

- Promote the safety culture by making it a policy and undertaking various activities under the OEMS strategic plan, including the application of OHSAS-18001, Process Safety Management, idMS (Incident Management System) to develop databases and investigate the root causes of various incidents; education and fostering of safety awareness among all employees, contractor employees, and workers; Outsource Safety Man Project; and Goal Zero 365 Days Project to campaign for accident reduction.
- Systematize a production stability management system for continuity and efficiency for seamless production with zero unplanned shutdown. Also, plant health checks are needed at all risky points, as are plans for entire machinery inspection.
- Focus on integrated enterprise environmental management under the likes of ISO 14001 and ISO 5001; and monitor and strictly comply with changes in applicable legal provisions, requirements, and standards.
- Establish understanding and cordial relations in pursuit of the confidence and trust of surrounding communities and preservation of

a sound public image. IRPC proceeds under the management approach, including CSR in process, social impact assessment (SIA), and social return on investment (SROI) through the Lam Sai Yong Project.

- Apply OEMS fully to ensure that various aspects of work are always efficient and effective. IRPC also invite experts from PTT Group to assess its OEMS to identify development and improvement aspects.
- Implement BCM (Business Continuity Management Standard) by first developing a BCP (business continuity plan) to handle crises and emergencies, including plan drills, by applying ISO 22301 (Business Continuity Management System)

fully to guide preparation for such crises at the Bangkok Head Office and various plants in the industrial zone.

- In place is the management of water resources to assure water availability, with water demand growing in the industrial sector and agricultural sector, growing urban communities, and the tourism sector. Conflicts over water resources are inevitable. Therefore, to reduce such conflicts, IRPC has implemented the 3Rs (reduce, reuse, recycle), including digging a 5-million-cubic-meter reserve pond for water reserve for processes during a period of water shortage from natural sources.



Figure OEMS: IRPC OEMS



Financial Risk

Below are mitigation measures.

- **Foreign currency exchange risks:** Changes in the value of the baht versus the dollar directly and indirectly affect IRPC's revenue and expenditure because its petroleum and petrochemical products as well as feedstock, most of which is crude oil, are paid in baht but are still tied to world market prices, which are US dollar-linked. The same is true for project loans. Therefore, to ease the impacts of foreign currency exchange risks, IRPC structures its loans and debentures in foreign currencies to offset the revenue that is linked to foreign currencies under the so-called natural hedge, which relies on the management of dollar-denominated loans proportionally to revenue. This risk management practice comes under the oversight, approval, and monitoring of the Risk Management Committee to conform to the policy and ease impacts to manageable levels.
- **Funding risks:** IRPC has devised a capital spending plan for ongoing business growth and incurred a repayment burden for loans and matured debentures, and so it needs to secure adequate capital in a timely way and at a suitable cost of funds. These enable IRPC to secure capital as planned at a suitable cost of

funds. Note that IRPC commands a credit line from financial institutions for working capital of about THB 25 billion together with a credit line under a loan agreement with PTT of about THB 10 billion and a loan ceiling of THB 1.5 billion to efficiently manage the liquidity inside PTT Group.

Capital Projects Risk

IRPC has prepared for the project and commands the following mitigation measures:

- Prepared assorted resources to support and efficiently drive the project toward its goals, including personnel and financial support, and prepared various public utilities systems.
- Developed systems and processes for closely monitoring business updates and remedying problems swiftly to ensure that the project could achieve all its goals, namely project operation timeframe, budget management, project quality, safety, and ongoing cooperation with public agencies and communities.
- Established marketing and sales plans to accommodate the volumes of new products to ensure that all produced goods are saleable and have enough markets.

Organizational Capability Risk

Below are IRPC's risk management moves.

- Cultivate a corporate culture for work through the IRPC DNA so that the workforce may enhance the efficiency and effectiveness of their duties.
- Define a suitable approach for IRPC corporate restructuring for competition with companies in the same industry.
- Define succession plans for key positions and define systematic performance appraisal processes to accommodate retiring executives and enable job transfers to go smoothly without affecting business.
- Systematize knowledge management, particularly knowledge in key professions that may vanish once people resign or retire, including that of machinery control and maintenance.

Policy and Regulatory Risk

Below are IRPC's risk management moves.

- Monitor public-sector news and intelligence that may affect business or operations; be fully prepared and map out action plans or approaches for dealing with risks arising from such changes in policies, laws, and regulations to avoid business repercussions.
- Develop regulation database for dissemination on the corporate computer database, with a focus on compilation of regulations so that compliance with laws and regulations may become more efficient.
- Joined CAC in anti-corruption efforts, assess all corruption risks, and develop risk mitigation approaches. IRPC values transparent administration and introduces the anti-bribery approaches for the private sector and juristic persons when engaging public officers; an eight-point principle of the Office of National Anti-Corruption Commission (NACC) has been relayed to executives and employees for corporate implementation.
- Followed the procedures of the land code in revoking roads and canals, as well as change in public places lying on the extended industrial zone to ensure that IRPC's actions are legitimate and minimize conflicts with communities as well as litigation. To this end, a task force was formed to take action and minimize potential impacts in an integrated way.

IT Security Risk

Below are IRPC's risk management moves:

- Manage a Security Operation Center (SOC) and continually improve it in software, hardware, and personnel to supervise and audit access to various corporate systems and quickly and efficiently detect anomalies should there be an attack from outside IRPC with a response process. Also, responsible personnel are trained on efficient prevention.

- Educate and teach security officers skills by enrolling them in training, seminars, and knowledge-sharing with external agencies, as well as testing their knowledge with ComTIA Institute to apply for ICT Security Certificates.
- Acquire ISO 27001 (Information Security Management System) certification to boost confidence in the effectiveness and efficiency of corporate IT security together with steps taken to comply with applicable requirements, provisions, and regulations.
- Undergo an annual drill under the Disaster Recovery Plan, which may involve attacks from the outside, damaged equipment, or assorted disasters.
- Educate and forge awareness among the workforce of safe use of computers and software, as well as avoidance of viruses, malware, or attacks in various forms. To this end, dedicated teams counsel, train, warn, and solve problems for the workforce.

Emerging Risk

IRPC analyzes the environment and external trends that could impact IRPC in the long term (5 – 10 years) by assorted external factors, including political, economic, social, environmental, legal, and technological ones. These risks must be assessed. Below are IRPC's risk management moves:

- The world oil output capacity to respond to consumers' demand is currently at its peak (Peak Oil), after which outputs are likely to decline with the oil demand volumes. Energy academicians and various agencies have paid attention to such projection and agreed this Peak Oil would coincide with 2030 – 2040, mainly caused by technological changes, much improved engine efficiency (causing less fuel consumption), and the growing popularity of EV cars. Today many countries' policies are to clearly promote EV cars, which has plunged IRPC's fuel and lubricant sales. Therefore, IRPC has drawn up a long-term management



approach by defining strategies for conversion of petroleum into petrochemical products, implemented in 2014 – 2023. A case in point is the UHV Project, under which fuel oil is converted into propylene, which is in turn converted into polypropylene and polypropylene compounds. Plant construction was completed, and commercial operation has begun. In future, heavy naphtha and aromatics (which are components of gasoline) will undergo conversion into paraxylene; this is due for completion in 2023.

- Climate change risks: Today the world is witnessing more and more natural catastrophes, with increasing severity—whether drought or floods. Part of these phenomena have resulted from global climate change, which affects natural resources and all lives in every region of the world. Man is a key culprit through his use of automobiles, air conditioners, heaters, or combustion of coal, oil, and gas; all these activities release greenhouse gases into the atmosphere. So, IRPC has devised measures

to prevent and mitigate these risks by investigating the application of carbon pricing in assessing future project viability; defined a measure to lower the intensity of greenhouse gas emissions, including raising energy efficiency in production processes via the introduction of ISO 50001 to cut fuel combustion by 2% yearly; prepared the corporate carbon footprint by piloting voluntary assessment under its Carbon Footprint Organization (CFO) with the Department of Industrial Works and the Thailand Greenhouse Gas Management Organization (Public Organization); promoted alternative/ renewable energy through the likes of providing electric commuter buses jointly with PTT Group and a project involving solar cells in power generation. Finally, IRPC has eased the impacts of drought and flooding through its sustainable water management plan; cases in point are its water resource management project under the 321RPSD principle and the community water management project.

RESEARCH AND DEVELOPMENT EXCELLENCE

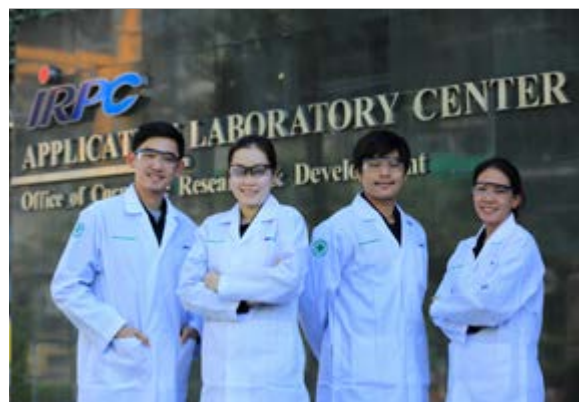


From Goal-Setting to Reality

IRPC highly values R&D that will create knowledge and new products that are beneficial to consumers and create leapfrogging business growth for the corporation.

This year IRPC Innovation Center designed a new management process and expanded the product R&D capability to become a “world-class fast follower” in innovation, the ultimate goal, by implementing strategies for R&D excellence.

IRPC Innovation Center aligned its R&D with short-term, medium-term, and long-term business growth strategy by focusing on product R&D to

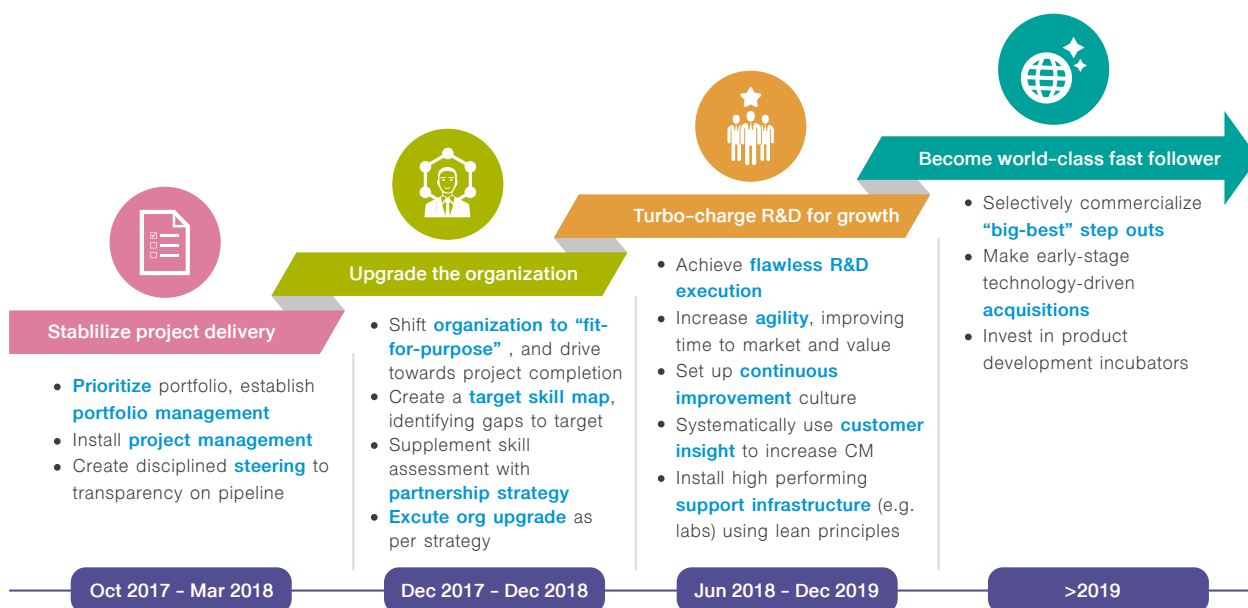


enhance the core business competitiveness, maintain and expand the market shares of products, and promote R&D to leverage them for adjacent businesses and value-added products, including seeking new business opportunities and creating a new S-curve for business sustainability.

The path to become a world-class fast follower is divided into

- 1) Stabilize Project Delivery
- 2) Upgrade the Organization
- 3) Turbo-charge R&D for Growth
- 4) Become World-class Fast Follower

“ This year the Board approved a budget of 1.5% of petrochemical sales to support R&D activities and the infrastructure as well. ”



This year the center completed phase 1 and 2 through the implementation of eight scopes.

1. Product Portfolio and Technology Roadmap

Management and R&D strategies successfully increased product R&D output as planned in both the core business and research expansion for new products so that IRPC could offer a new business. Current research projects included 60 projects relevant to core and adjacent businesses, distributed in a balanced fashion over time. This year IRPC had 15 research projects that brought new products to the market worth THB 223 million. IRPC continued proposing more new research projects so that R&D efforts can add value to constantly meet targets. Projects currently in the R&D Portfolio are worth THB 940 million.

The pursuit of new business opportunities and creating the New S-curve are also important because they sustain the corporation. IRPC managed this objective through the use of an R&D program named De Novo Research, which focuses on three technology platforms: electronic materials, energy storage and nano-materials. This year the center completed research planning and business planning for the “3 Platforms” through studies of both market and technology. All three platforms will be operational next year.

2. Steering and Management

IRPC adopted a new managerial model that has created clear progress monitoring of research projects. This included daily researcher-manager check-in meetings and weekly monitoring of all projects in the R&D portfolio through a mechanism called the “Everest Forever Transformation Office”. There is also a weekly product development steering committee meeting, chaired by the President, with other relevant departmental representatives as members. As a result, the monitoring and follow-up are more systematic and seamless. Research projects were carried out in accordance with plans and were responsive to changes in business scenarios. Furthermore, the new project monitoring system created better understanding and cooperation among departments or work units.

3. Core Processes

This framework is about management processes of research projects by using the Innovation Process System, a more consistent digital system. Importing all projects into the system enabled systematic monitoring, transparent and efficient development of products to market. In addition, IRPC Innovation Center initiated the development of an R&D Dashboard to facilitate systematic monitoring of projects.

4. Tools and Infrastructure

This year the center won an approval for funding to improve and expand the current R&D building and the Application Lab building. In addition, funding of THB 732 million was granted to construct a New IRPC Innovation Center to improve quality, safety, support research personnel, research equipment and product development tools that will increase in the future in accordance with plans. In addition, the center has been conducting a feasibility study to erect a PP Pilot Plant to increase ongoing research capability.

5. Open Innovation and Technology

Investment Through the Open Innovation mechanism, IRPC supported new research projects through its collaboration with domestic and international academic institutions and leading companies such as VISTEC, the National Science and Technology Development Agency (NSTDA), Japan Advanced Institute of Science and Technology (JAIST), and Haydale Technologies Thailand. These organizations have expertise in specific areas. The Open Innovation will reduce the research time and the risk of product commercialization. IRPC has also planned to invest in new technology to seek emerging business opportunities as well.

6. Skills and Competency

The development of personnel capabilities under the i-SPIRIT corporate value was carried out through IRPC DNA. The center is committed to training researchers at both domestic and international institutions, including sharing of knowledge within a team. There are continual exchange of information and collaboration work with academic institutions and leading companies as well.

“

Level up the R&D and Innovation Capability to Become World-class Fast Follower by 2020



Increase R&D budget by

1.5%
of revenue



Increase R&D personnel employment to carry out product research by

4 people / 1 new product



Increase the proportion of doctoral personnel by

30% of R&D Team



Budget of THB

732 million
for the construction of the
**New IRPC
Innovation Center**

”

7. Research and Development Resources

Currently R&D has 120 staff with doctoral degrees, or 12% of the total headcount. It is expected that staff at the doctoral level will account for 30% by 2025.

This year the Board approved a budget of 1.5% of petrochemical sales to support R&D activities and the infrastructure as well.

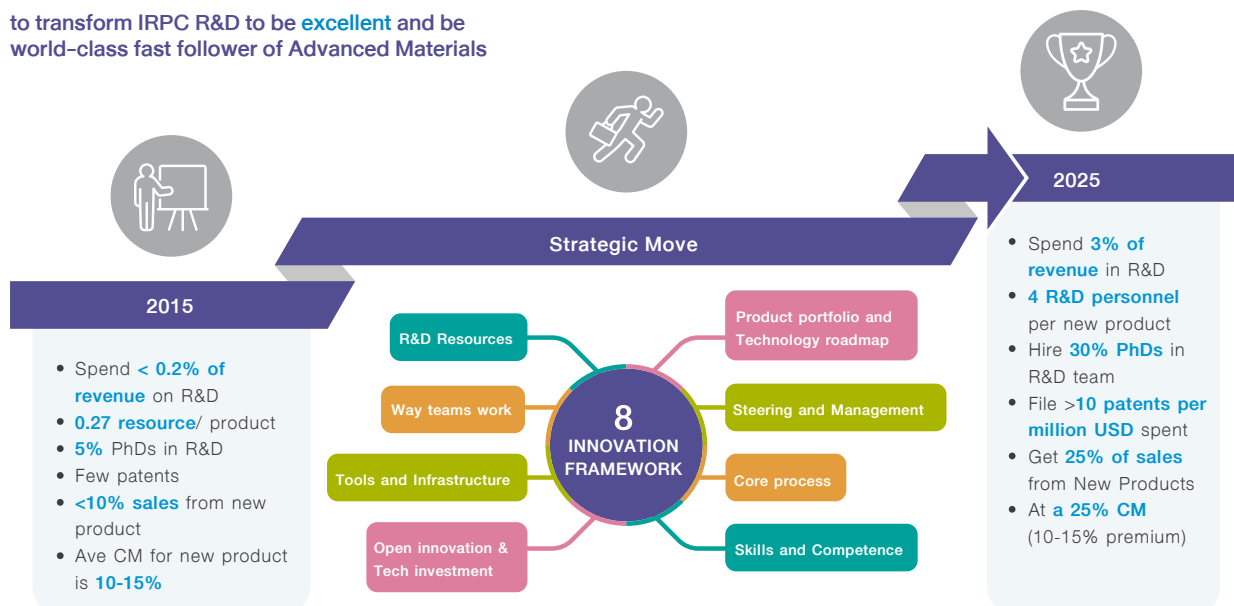
8. Way Teams Work

The system of work that promotes cooperation both within functional teams and cross-functional teams, for example, marketing and production, created mutual understanding and sharing goals, with a well-coordinated driving force for new products to market. After completion of phase 1 and 2, IRPC Innovation Center has instilled an efficient and well-integrated system of work. It is poised to add value and leap the organization to become a world-class fast follower in accordance with its aspiration.

“R&D Excellence”

to transform IRPC R&D to be **excellent** and be world-class fast follower of Advanced Materials

Advanced material champion



Outstanding Company in Innovation



IRPC recognizes the importance of R&D and the promotion of innovation into a corporate value so that it may address Thailand's need for R&D to reduce technological dependency from abroad.

This year IRPC was honored with a Best Innovative Company Award at the SET Award 2018 for its innovation named "Convert HDPE Plant to Specialty Pipe Grade", High Density Polyethylene Pipe (HDPE) PE100 is engineering plastic pipes that are pressure resistant, impact resistant and crack resistant. It has superior quality to other plastic pipes, including more than 50 years' longevity, sunlight resistance, environmental stress resistance, easy installation both inside and outside buildings, hydraulically smooth operation with no strain, pressure resistance with zero leak, ductility and self-restraint. In addition, HDPE PE 100 is better than cast-iron steel pipe and cement pipe in that it is easily installed, flexible and coil-able, requiring fewer joints and its longevity. HDPE PE 100 is highly popular and in high demand. The quality of polymers and pipes are controlled by international standards such as ISO/DIS 9080 and ISO 4427. In addition, IRPC has won an award from the National Innovation Institute.

Commercially Innovative products

IRPC has innovative products from R&D efforts that can be commercialized to meet customers' needs due to suitability for a variety of applications.



1. Bio-Maxx L-Cement: The New Direction for Cement Product Designs

Bio-Maxx, a bioplastic synthesized from natural rubber, was developed to compete and replace other bioplastics, for example, PLA, PBS and PHA. The synthesis process used to produce Bio-Maxx creates properties close to other bioplastics, including non-polar solvent resistant, compatibility with other fillers, especially other polar typed fillers. Using Bio-Maxx with cement reduces cement limitations, namely applicability for molding casting, less time required for work piece production, more product yields, and suitability for production of complex work pieces. Using Bio-Maxx L-Cement allows simple injection molding like other plastics derived from compound preparation between Bio-Maxx and cement powder; Bio-Maxx interlocks other cement components all together. Yet, one outstanding property is that it produces lighter-weighted work pieces, increases production efficiency and reduces production time when compared with that of cement usage alone. Finally, it enables recyclability.

2. High Thermal Conductivity Acetylene Black for Tire Bladder

Acetylene black carbon powder is applied as a thermal conductor filler in rubber compounds to produce tire bladders, enabling efficient heat transfer from the mold to the rubber compound that is being molded to become tire. The powder has a feature that increases thermal conductivity efficiency and shortens the curing process of rubber compounds, resulting in increased production efficiency as well as maintaining the balance of reinforcement. Good thermal conductivity of tire bladders enhances tire life and reduces production costs.

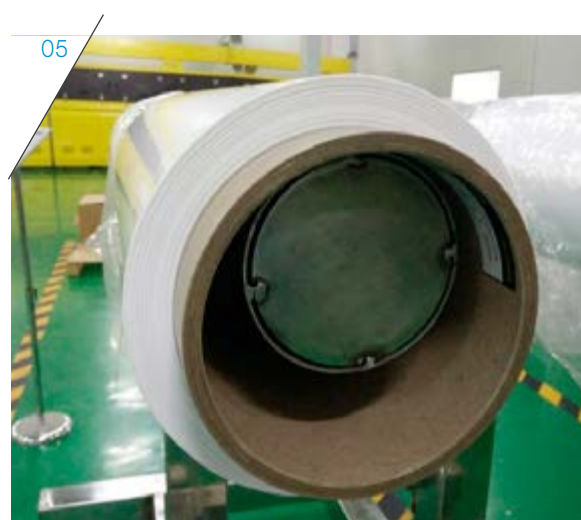


3. High-Speed Polypropylene Yarn

This product was developed for high-speed bag production that is more popular nowadays because it reduces the production cost with a high production rate. In addition, this product maintains good strength and stretching, suitable for production of various types of bag.

4. Free Expanded Polystyrene (EPS) DIN 4102 Class B2 for Building and Construction

Expanded Polystyrene (EPS) has good and long-lasting insulation properties. Therefore, it is suitable as insulation to save energy in buildings, resulting in reduction of global warming. Meanwhile, the designated EPS must have the property of a fire retardant. When burned, it must generate less smoke. In addition, the chemicals used as raw materials must be non-hazardous. IRPC uses environmentally friendly chemicals to produce flame retardant that prevents fire spread in accordance with Fire Retardant Standards of Polymer Foam DIN 4102 Class B2.



5. Ultra High Molecular Weight Polyethylene (UHMWPE) Powder for Li-ion Battery Separator

IRPC initiated the production of Ultra High Molecular Weight Polyethylene (UHMWPE) Powder to produce micro-porous membrane with thickness less than 30 micrometers for use as a separator in lithium-ion batteries in mobile phones, laptop computer sets and energy storage in electric vehicles in accordance with the United States Advanced Battery Consortium (USABC). The micro-porous membrane separates the anode from contacting with the cathode while enable free ionic transport. By sealing the micro-pores, the membrane also serves to prevent fires and explosion of batteries if the temperature of the batteries is higher.



Management Discussion and Analysis (MD&A)

Executive Summary

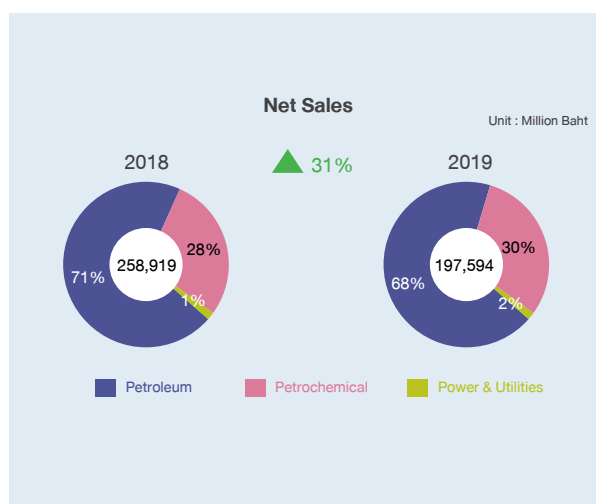
Executive Summary	Unit	2018	2017	Change
Crude Intake	Million bbl	76.05	65.54	16%
Sales ^[1]	Million Baht	280,551	214,101	31%
Net Sales ^[2]	Million Baht	258,919	197,594	31%
Market GIM	Million Baht	33,607	32,370	4%
	USD/bbl ^[3]	13.60	14.48	(6%)
Accounting GIM	Million Baht	32,370	34,638	(7%)
	USD/bbl	13.10	15.49	(15%)
EBITDA	Million Baht	18,344	20,420	(10%)
Net Profit	Million Baht	7,735	11,354	(32%)

Note : ^[1] **Sales** includes (1) Petroleum Sales (2) Petrochemical Sales (3) Power and Utilities Sales (4) Sales of tank farm and port service, etc.
^[2] **Net Sales** includes (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]

In 2018, the Company generated net sales of THB 258,919 million, increased by 31% when compared to 2017, YoY, which attributed to the increase in sales volume and products prices. The refinery utilization rate was 208,000 barrels per day of crude intake, rose 16% due to increasing efficiency of the refinery plant after major turnaround during 1Q17.

The Market GIM was THB 33,607 million (USD 13.60 per barrel), increased 4% from last year mainly due to an increase in sales volume following the higher utilization rate. However, crude oil price had sharply declined as a result of supply surge especially from the U.S. as well as the lower-than-expected economic growth through a prolonged trade war between China and the United State. This resulted in the net stock loss of THB 1,238 million, the Accounting GIM of THB 32,370 million, down 7%, and earnings before interest, tax, depreciation and amortization ("EBITDA") of THB 18,344 million, decrease 10%. The Company reported the depreciation amounting to THB 8,237 million, rose 17% according to an increase in depreciation from

PPE and PPC projects which started commercial operation since late 2017. Likewise, the financial costs of THB 2,227 million, increased 12% caused by the lower gain from Cross Currency Swap ("CCS") by THB 334 million together with the lower of gain from impairment and disposal of fixed assets amounting to THB 296 million, decreased by 64% mainly owing to Non-recurring item in 2017 which was gains from



reversal of impairment from disposal of investment property amounting to THB 794 million. The corporate income tax of THB 1,147 million, dropped 47% as a decrease in operating profit and an increase benefit from investment promotion (BOI), especially for environmental projects. As a result, the Company had a net profit of THB 7,735 million, a 32% decline when compare to the previous year.

Key Incidents in 2018

- Disposal of Investment of IRPC Polyol Company Limited** On April 30, 2018, the Company disposed the 25% stake holding in IRPC Polyol Company Limited (IRPCP) to PCC Rokita Spolka Akcyjna ("PCC Rokita"). After the disposal, IRPC and PCC Rokita jointly held 50% stake holding each in IRPCP. As a result, the IRPCP status has been changed from Subsidiary to be Joint-venture and recorded loss of investment by THB 45 million.
- Investment in Plastic Product E-commerce Business** The Board of Directors no. 10/ 2018, held on 16 October 2018, resolved the following resolutions:
 - Approved the Company to invest in Guangzhao Saiju Performance Polymer Ltd. ("GZSJ") in the People's Republic of China (PRC) who operates the e-commerce platforms under the name "IPLAS" (<https://www.isuwang.com> and <https://www.suwen8.com>). The investment is the subscription of capital increased shares equivalent to 15% of total registered capital, in an amount of RMB 135 million (equivalent to the estimated investment value of THB 650 million). GZSJ is the major operator of plastic product e-commerce business in PRC.
 - Approved the Company to incorporate the private limited liability company, "the subsidiary", under the laws of Thailand with the registered capital amounting to THB 120 million (or approximate USD 3.5 million), by which the Company and GZSJ will hold the shares equivalent to 55% and 45% of

total shares, respectively. Such the subsidiary will be incorporated to develop the e-commerce platform in Thailand.

- Sales of Land in Wang Chan District to PTT** The Board of Directors meeting, held on 23 November 2018, has passed the resolution on the approval of the land for sales to PTT Public Company Limited ("PTT") which is located in Pa-Yup-Nai sub-district, Wang Chan district, Rayong province. The land has a total area of about 152 rai approximately THB 325 million. The sale was transferred on December 24, 2018. The Company had gain from sale of land by THB 253 million.

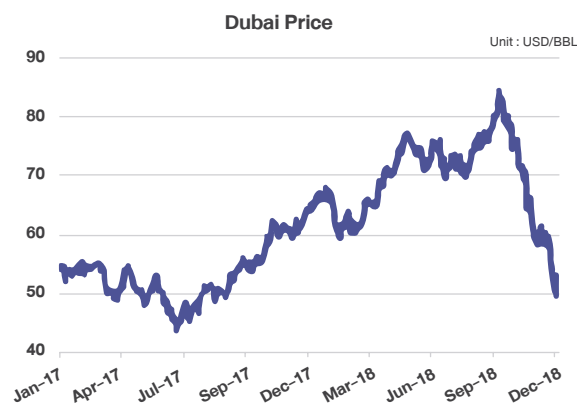
Operating Performance

1. Operating Performance by Business Units

1.1. Petroleum Business Unit

1.1.1 Petroleum Market Overview

According to crude oil market in 2018, the average global crude oil demand was 100 million barrels per day. Dubai price in 2018 moved in the range of USD 49.5-84.4 per barrel, an average of USD 69.4 per barrel, sharply increased USD 16.2 per barrel from an average of USD 53.2 per barrel in 2017. Crude oil prices had continuously increased during the first nine months of 2018 mainly due to the tightening supply situation. This was supporting by the collaboration among petroleum producers from both OPEC and Non-OPEC members to reduce crude oil output, the limited Iran's export after the United States sanctions, together with the lower production from



Venezuela towards the country's economic problems. However, crude oil prices plunged during 4Q18 after the United States granted eight oil importers waivers from the Iranian sanctions leading

to higher export volume from Iran as well as the crude oil demand shrank amid a continued escalation of the U.S. – China trade war.

1.1.2 Crude Intake and Capacity

Petroleum	2018	2017	Change
Crude Intake			
Million barrels	76.05	65.54	16%
KBD	208	180	16%
Utilization Rate			
Refinery	97%	84%	13%
RDCC	99%	80%	19%
Lube Base Oil	85%	76%	9%

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In 2018, crude intake was 76.50 million barrels or 208 KBD, U-Rate at 97%, increasing by 13% from 2017 due to planned major turnaround in 2017

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Crude intake in 2018 was 76.05 million barrels or 208 thousand barrels per day (KBD). The utilization rate was 97%, increasing by 13 % when compared to 2017, due to planned major turnaround in 2017. The plant efficiency has been improved after the turnaround. In 2018, the utilization rate of RDCC plant was 99%, increased by 19% YoY. Meanwhile, the utilization rate of lube base oil plant was 85%, up by 9% when compared to 2017 as mentioned above.

1.1.3 Petroleum Sales

Products	Sales Volume (Million Barrel)		Sales Value (Million Baht)	
	2018	2017	2018	2017
Refinery	60.83	52.39	163,724	119,015
Lube Base Oil	7.01	6.43	19,229	16,110
Total	67.84	58.82	182,953	135,125

In 2018, net sales of petroleum businesses were THB 182,953 million, increasing by THB 47,828 million or 35% from 2017. This was caused by 20% increase in average products prices following the rising crude oil price as well as 15% increase in sales volume from 58.52 million barrels to 67.84 million barrels according to the company's major turnaround during 1Q17. The risen sales volume was mainly from Gas Oil and ULG95, after the start-up of Gasoline Maximization Project since November 2017.

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In 2018, net sales of petroleum businesses increased by 35% from 2017 due to the company's major turnaround during 1Q17

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1.1.4 Petroleum Sales Breakdown

Products	2018		2017	
	Local	Export	Local	Export
Refinery	60%	40%	59%	41%
Lube Base Oil	40%	60%	49%	51%
SOU	57%	43%	58%	42%

The percentage of domestic and export of petroleum product sales in 2018 was 57% and 43% respectively. The percentage of domestic sales was slightly decreased by 1% comparing with 2017, mainly from Asphalt product. The export products in 2018 mostly shipped to Singapore, Malaysia and Cambodia, respectively.

1.1.5 Petroleum Product Spread

Average price	2018	2017	Change
Dubai Crude Oil (USD/bbl)	69.42	53.17	31%
Petroleum (USD/bbl)			
Naphtha – Dubai	(2.4)	0.7	n.a
ULG95 – Dubai	10.5	14.9	(30%)
Gas Oil 0.05%S - Dubai	14.6	12.5	17%
FO 180 3.5%S - Dubai	(2.6)	(2.3)	(13%)
Lube Base Oil (USD/MT)			
500SN - FO 180 3.5%S	447	498	(10%)
150BS - FO 180 3.5%S	518	602	(14%)
Asphalt - FO 180 3.5%S	(46)	(31)	(48%)

The Spread between Petroleum Products and Dubai

- Naphtha Spread-Lower:** Naphtha – Dubai spread in 2018 was USD -2.4 per barrel, decreased when compared to 2017 of USD 0.7 per barrel because of high supply in Europe and the increasing export volume from the Middle East.
- ULG95 Spread- Lower:** ULG 95-Dubai spread in 2018 was USD 10.5 per barrel, declining by 30% from 2017 of USD 14.9 per barrel. This resulted from oversupply leading to the high-volume gasoline inventory in the U.S. and Europe. Furthermore, the continuous increase in export volume from China also pressured the price.
- Gas Oil Spread-Higher:** Gas Oil 0.05% S-Dubai was USD 14.6 per barrel in 2018, up by 17% when compared with 2017 of USD 12.5 per barrel. The increase was owing to the higher global demand especially from North Asia, Middle East, and South Africa and the decrease in export volume from China.
- Fuel Oil Spread-Lower:** Fuel Oil (FO 180 3.5%S) - Dubai spread in 2018 was USD -2.6 per barrel, down by 13% when compared with 2017 of USD -2.3 per barrel owing to lower demand from Asia.

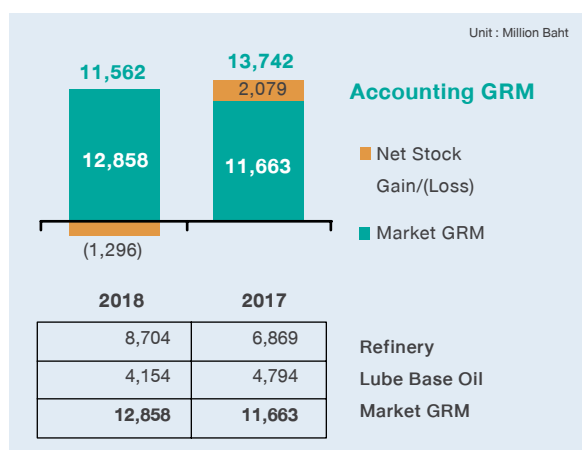
The spread between Lube Base Oil products and FO 180 3.5%S

- **500SN Spread- Lower:** Lube base 500SN-fuel oil spread in 2018 was USD 447 per ton, decreasing by 10% from USD 498 per ton in 2018 according to low import from China due to much weaken Yuan Renminbi against U.S. dollar. This affected to higher import products

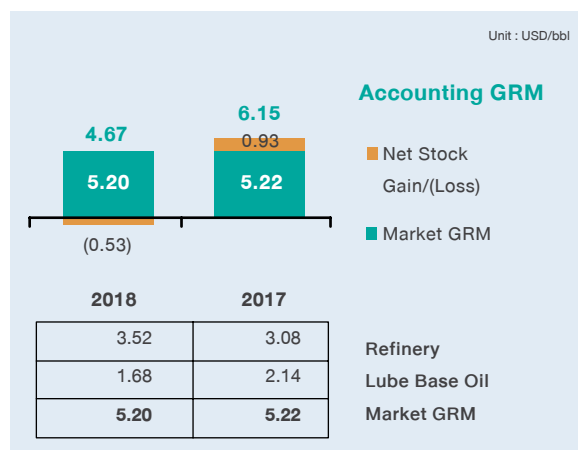
price when compared to domestic products price and push the price down.

- **Asphalt Spread- Lower:** Asphalt-fuel oil spread in 2018 was USD -46 per ton, dropping by 48% from 2017 of USD -31 per ton, because of the decreasing demand as the lower road construction project than last year.

1.1.6 Gross Refining Margin



For 2018, The Market Gross Refining Margin (Market GRM) was THB 12,858 million or USD 5.20 per barrel, rose by THB 1,195 million from 2017 owing to an increase in sales volume as higher crude run than last year, resulting from increasing efficiency of refinery plant after major turnaround during 1Q17, despite higher crude premium. According to sharply dropped of crude oil price, there was the net stock loss of THB 1,296 million or USD 0.53 per barrel including the stock loss of THB 663 million or USD 0.27 per barrel and a loss of LCM amounting to THB 665 million or USD 0.27 per barrel against oil hedging gain of THB 30 million or USD 0.01 per barrel. Therefore, the company reported Accounting GRM of THB 11,562 million or USD 4.67 per barrel.



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In 2018, Market GRM rose YoY due to an increase in sales volume as higher crude run that last year versus higher crude premium

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1.2 Petrochemical Business Units

1.2.1 Petrochemical Market Overview

For 2018 market situation, Demand of petrochemical products had increased according to the global economic growth rate coupled with China's environmental control policy in order to reduce the use of Scrap & Waste plastics. Such demand had largely increased in the first half of the year in accordance with Thailand economic growth of 4.8% in the first half of the year which was the highest growth rate over the past 5 years. This was mainly due to the continuous economic stimulation through

government spending including the recovery of the export sector amid the manufacturing sector recovery in many countries. However, exports were limited from the major importing country's policy particularly China, Indonesia and Vietnam, because of their capacities expansion and lessen level of imports. Regarding petrochemical supply, the Coal to Olefins (CTO) and Methanol to Olefins (MTO) producers which accounted for 4-5% of the global ethylene and propylene productions had diminished their productions due to cost overrun driven by the corrosion of production equipment, the environmental issues in China together with a shortage of water

that requires a large amount for production. However, after the U.S. - China trade war intensifying in the second half of the year resulted in the monetary-easing policy in China in order to maintain domestic economy and economic growth. As such, the RMB devaluation caused the delay purchase of Petrochemicals products, especially Polystyrenics because China is a major importer of such polymer, to reduce the risk of exchange rate fluctuations. In addition, products demand decreased on the back of fluctuations in raw material prices and inventories reduction during year end.

1.2.2 Petrochemical Capacity

Petrochemical	2018	2017	Change
Utilization Rate			
Olefins Group *	94%	87%	7%
Aromatics and Styrenics Group	101%	90%	11%

Note: * Olefins Group's capacity increased by 300,000 tons per year after the COD of PP Expansion and PP Compound in 3Q17 and 4Q17, respectively.

In 2018, the utilization rate of Olefins and Aromatics & Styrenics were 94% and 101%, respectively, increased by 7% and 11% when compare to the utilization rate in 2017 due to planned major turnaround in 2017.

1.2.3 Petrochemical Sales

Products	Sales Volume (KMT)		Sales Value (Million Baht)	
	2018	2017	2018	2017
Olefins Group	1,107	952	43,979	35,044
Aromatics and Styrenics Group	728	631	28,760	24,684
Total	1,835	1,583	72,739	59,728

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In 2018, net sales of petrochemical businesses rose by 22% from 2017 owing to planned major turnaround in 1Q17

In 2018, net sales of petrochemical businesses were THB 72,739 million, up by THB 13,011 million or 22% from 2017. The main reason was 16% increase in sales volume by 252 thousand metric tons (KMT) according to planned major turnaround in 1Q17 and 6% increase in average selling prices. The net sales were 60% from Olefins group and 40% from Aromatics & Styrenics group.

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1.2.4 Petrochemical Sales Breakdown

Products	2018		2017	
	Local	Export	Local	Export
Olefins Group	58%	42%	60%	40%
Aromatics and Styrenics Group	46%	54%	47%	53%
Total	53%	47%	55%	45%

When compared with 2018, the proportion of Petrochemical sales were 53% domestic and 47% export. The export sales increased by 2% mostly from PP product after PPE&PPC plants started commercial operation in late 2017. The petrochemical exported products in 2018 mostly shipped to Hong Kong, Singapore and Vietnam, respectively.

1.2.5 The Spread between Key Petrochemical Products and Raw Material

Average Price (USD/MT)	2018	2017	Change
Naphtha	614	496	24%
Olefins			
Ethylene – Naphtha	526	596	(12%)
HDPE – Ethylene	360	235	53%
HDPE – Naphtha	886	831	7%
Propylene – Naphtha	375	328	14%
PP – Propylene	278	328	(15%)
PP – Naphtha	653	656	(0.4%)
Aromatics			
BZ – Naphtha	207	324	(36%)
TOL – Naphtha	123	159	(23%)
MX – Naphtha	196	172	14%
Styrenics			
SM – Naphtha	726	754	(4%)
ABS – Naphtha	1,272	1,334	(5%)
ABS – SM	546	580	(6%)
PS (GPPS) – Naphtha	912	947	(4%)
PS (GPPS) – SM	186	193	(4%)

The Spread between Key Products and Raw Material

The Spread between Polyolefins Group and Naphtha

- **HDPE Spread-Higher:** HDPE-Naphtha spread in 2018 was USD 886 per ton, increased by 7% from 2017 of USD 831 per ton due to the continuously increasing demand in HDPE for pipe production in China driven by “One Belt, One Road” project and natural gas power generation project in order to replace coal power generation in accordance with China’s environmental concern policy.
- **PP Spread-Flat:** PP-Naphtha spread in 2018 was USD 653 per ton, being comparable from 2017 of USD 656 per ton. This was because the increase in additional capacity was less than the additional demand. The increasing demand owing to the reduction of Scrap & Waste plastics according to environmental control policy. However, demand declined toward the end of the year after the US-China trade war had intensified.

The Spread between Aromatics Group and Naphtha

- **TOL Spread-Lower:** Toluene - Naphtha spread in 2018 was USD 123 per ton, down by 23%

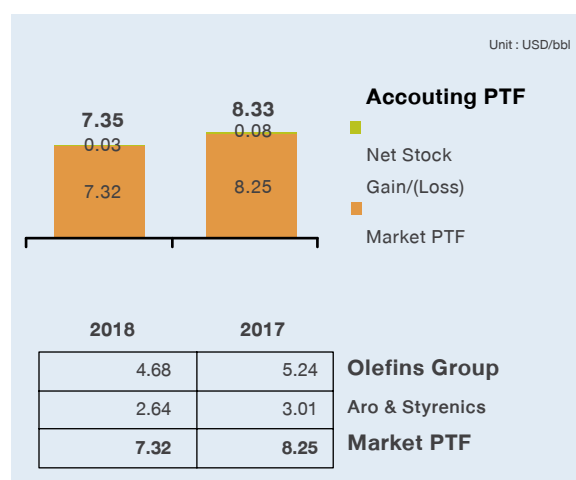
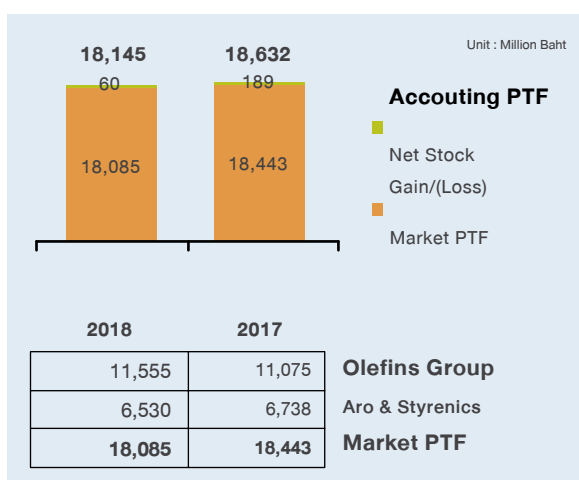
when compared to USD 159 per ton in 2017. It was because Toluene demand to be components of gasoline decreased following lower gasoline demand.

- **MX Spread-Higher:** Mixed Xylene-Naphtha spread in 2018 was USD 196 per ton, up by 14% when compared to USD 172 per ton in 2017 due to the increasing MX demand to be raw materials for Para-xylene.

The Spread between Polystyrenics Group and Naphtha

- **ABS Spread-Lower:** ABS-Naphtha spread in 2018 was USD 1,272 per ton, down by 5% when compared to USD 1,334 per ton in 2017 due to a drop demand in China as the impact of the trade war between the U.S. and China while less additional supply helped support its price.
- **PS Spread-Lower:** PS-Naphtha spread in 2018 was USD 912 per ton, slightly declined by 4% when compared to USD 947 per ton in 2017 because of slow demand. This was caused by Single-Use- Plastic Ban Policy in Europe as well as the substitution of lower-priced polymers.

1.2.6 Product to Feed Margin (Product to Feed: PTF)



In 2018, the Market Product to Feed (Market PTF) of THB 18,085 million or USD 7.32 per barrel decreased by THB 358 million or USD 0.93 per barrel from 2017 as the decline in the petrochemical product spreads. The net stock gain was THB 60 million, comprising of stock gain of THB 243 million against a loss from LCM of THB 183 million. Thus, the Company had Accounting PTF of THB 18,145 million or USD 7.35 per barrel, decreasing by THB 487 million or USD 0.98 per barrel from 2017.

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In 2018, Market PTF was down by THB 358 million or USD 0.93 per barrel, YoY, from the decline in product spreads

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1.3 Power Plant and Utility Business Units

1.3.1 Power Plant Capacity and Sales

Utility Business	2018	2017	Change
Utilization Rate			
Electricity	79%	75%	4%
Steam	79%	73%	6%
Sales (Million Baht)			
Electricity	1,947	1,629	20%
Steam	1,034	916	13%
Others	246	196	25%
Total	3,227	2,741	18%

In 2018, the utilization rate of Electricity and Steam were equal at 79%, rising by 4% and 6% from 2017 respectively. Net sales of power and utility businesses were Baht 3,227 million, increasing by Baht 486 million or 18% from last year due to higher production volume after the planned major turnaround in 2017.

2. Total Operating Performance

Total Operating Performance of IRPC and its subsidiaries for Year 2018 are as follow;

Total Operating Performance	Unit : Million Baht		Unit : USD per barre	
	2018	2017	2018	2017
Average FX (THB/USD)	32.48	34.11		
Total Crude Intake (Mbbbl)	76.05	65.54		
Average crude (USD/bbl) ⁽¹⁾	72.65	55.26		
Sales ⁽²⁾	280,551	214,101	113.58	95.77
Net Sales ⁽³⁾	258,919	197,594	104.82	88.37
Cost of Feedstock (Market Price)	(225,312)	(165,224)	(91.22)	(73.89)
Market GIM	33,607	32,370	13.60	14.48
Stock Gain/(Loss)	(420)	3,720	(0.17)	1.66
Lower of Cost or Market	(848)	0	(0.34)	0.00
Oil Hedging Gain/(Loss)	30	(1,452)	0.01	(0.65)
Accounting GIM	32,370	34,638	13.10	15.49
Other Incomes ⁽⁴⁾	1,577	1,423	0.64	0.64
Selling Expenses	(1,524)	(1,296)	(0.62)	(0.58)
Accounting GIM and Other Incomes	32,423	34,765	13.12	15.55
OPEX	(14,080)	(14,345)	(5.70)	(6.41)
EBITDA	18,344	20,420	7.42	9.14
Depreciation	(8,237)	(7,062)	(3.33)	(3.16)
EBIT	10,106	13,358	4.09	5.98
Net Financing Cost	(2,227)	(1,983)	(0.90)	(0.89)
Gain/(Loss) from Foreign Exchange	68	764	0.03	0.34
Gain/(Loss) from impairment and disposal of fixed assets	296	832	0.12	0.37
Gain/(Loss) from Investment	680	577	0.27	0.25
Other Expenses	(8)	(7)	(0.00)	(0.00)
Net Profit/(Loss) before Income Tax	8,915	13,541	3.61	6.05
Income Tax	(1,147)	(2,181)	(0.46)	(0.98)
Gain/(Loss) from non-controlling interests	(34)	(5)	(0.01)	(0.00)
Net Profit/(Loss)	7,735	11,354	3.14	5.07
Earning per share (EPS) (Baht/share)	0.38	0.56		

Note:

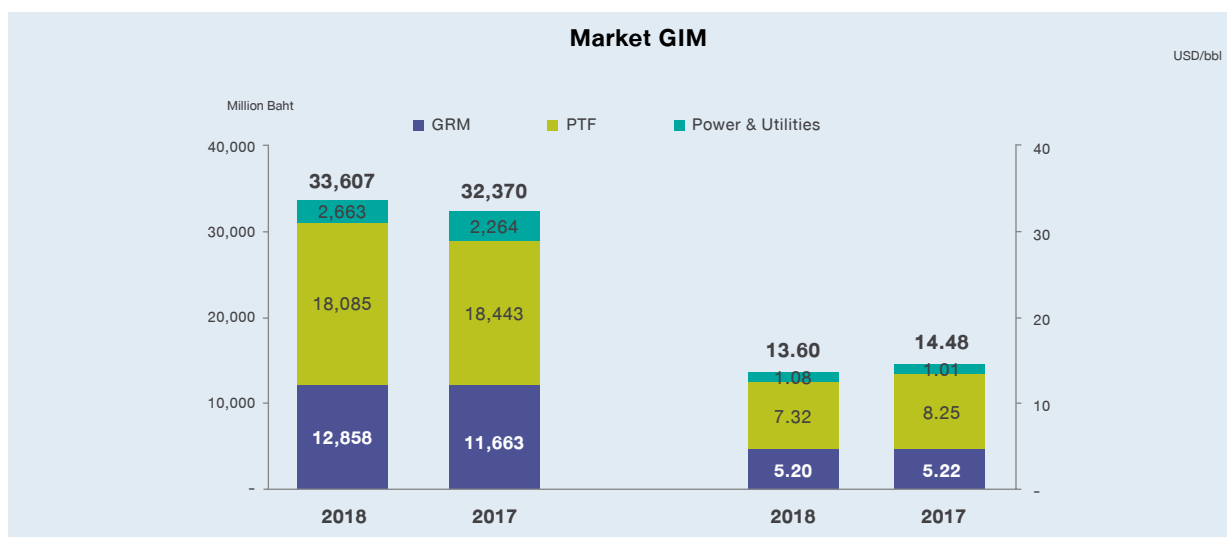
⁽¹⁾ Average market prices of crude used in the production process

⁽²⁾ Sales includes (1) Petroleum Sales (2) Petrochemical Sales (3) Power and Utilities Sales (4) Sales of tank farm and port service, etc

⁽³⁾ Net Sales includes (1) Petroleum Sales (excluding excise tax) (2) Petrochemical Sales (3) Power and Utilities Sales

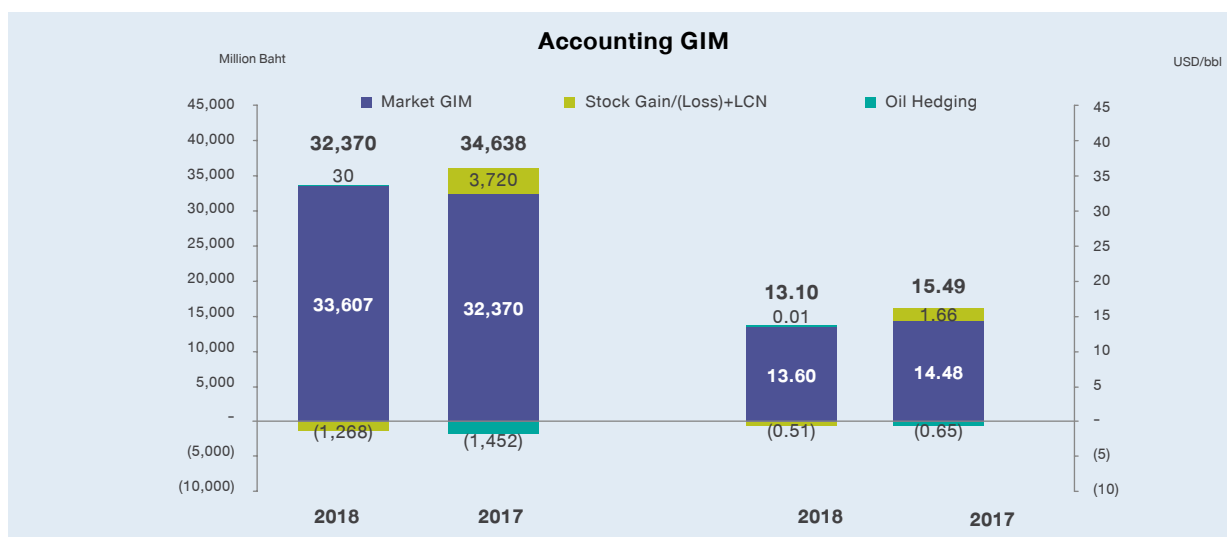
⁽⁴⁾ Including port, tank farm and service etc

2.1 Market Gross Integrated Margin (Market GIM)



For 2018, Market GIM was THB 33,607 million or USD 13.60 per barrel increased by THB 1,237 million from 2017 owing to an increase in sales volume as a higher crude run than last year, resulting from increasing efficiency of refinery plant after major turnaround during 1Q17 despite higher crude premium and lower products spread.

2.2 Accounting Gross Integrated Margin (Accounting GIM)



For 2018, Accounting GIM of THB 32,370 million or USD 13.10 per barrel declined by THB 2,268 million or USD 2.39 per barrel from 2017 including a rise in net stock loss of THB 3,506 million against an increase in Market GIM of THB 1,237 million.

2.3 Other Incomes

Other incomes consist of port and tank farm services and other services. For 2018, other incomes were THB 1,577 million, up by THB 154 million from last year. This was mainly owing to a rise of shipments following an increase in utilization rate as well as an increase in tank farm services according to higher rental volume.

2.4 Operating Expenses

For 2018, the operating expenses of THB 14,080 million decreased by THB 266 million, mainly because of a decline in consulting fee versus a rise in staff costs from an increase employee benefit expenses in accordance with the Company's policy.

According to the research and development expenses to enhance the Company's competitiveness amounting to THB 432 million in 2018. Such expenses included expenses for internal and external research and development as well as the staff costs in relation with the research department amounting to THB 369 million together with the research equipment & tools amounting to THB 63 million.

2.5 Depreciation and Amortization Expenses

For 2018, the depreciation of THB 8,237 million increased by THB 1,175 million from 2017. This resulted from an increase in assets after the completion of the expansion and efficiency improvement projects such as Polypropylene Expansion Project (PPE), Polypropylene Compounding Project (PPC) and Gasoline Maximization Project. In addition, the major turnaround expenses were capitalized as the assets and be amortized for 5 years since 2Q17.

2.6 Financial Costs

For 2018, financial cost of THB 2,227 million rose by THB 244 million from 2017. This was caused by a loss from financial derivatives – Cross Currency Swap (CCS) of THB 276 million in 2018 while in 2017, there were gains from CCS of THB 58 million offsetting with a decrease of interest expenses by THB 95 million as the repayment of long-term loan.

2.7 Gain/(Loss) from Foreign Exchange

For 2018, the Company recorded gain from foreign exchange of THB 68 million, mainly the unrealized

gain from foreign exchange due to Thai Baht appreciation from THB 32.85 per USD at the end of 2017 to THB 32.61 per USD at the end of 2018. While there was gain from foreign exchange of THB 764 million in 2017 because of Thai Baht appreciation from THB 36.00 per USD at the end of 2016 to THB 32.85 per USD at the end of 2017. The Company has outstanding USD debt of USD 200 million at the end of 2018.

2.8 Gain/(Loss) from Impairment and Disposal of Fixed Assets

Gain from impairment and disposal of fixed assets in 2018 was THB 296 million, due mainly to the disposal of land. When compared with 2017, there was gain from impairment and disposal of fixed assets of THB 832 million in 2017 including gain from the reversal impairment of long-term investments related to the previous management amounting to THB 562 million and gain from the appraisal of investment property of THB 232 million.

2.9 Gain/(Loss) from Investments

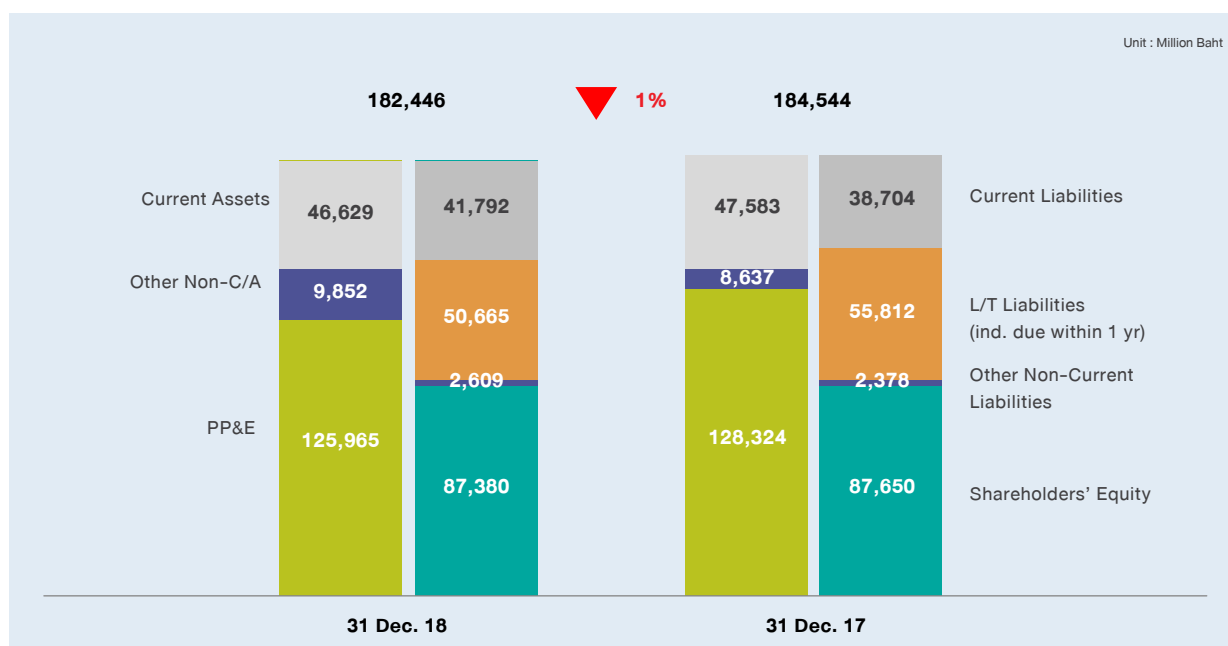
For 2018, the Company had gain from investments of THB 680 million, increased by THB 103 million from last year. This was caused by the higher of equity values in associates, mainly from IRPC Clean Power Co., Ltd. and UBE Chemicals (Asia) Plc.

2.10 Corporate Income Tax

For 2018, the corporate income tax of THB 1,147 million decreased by THB 1,034 million or 47% from 2017 owing to a decrease in performance as well as an increase in profit from BOI, especially environmental projects.



Financial Positions as of 31 December 2018



Assets

As of December 31, 2018, the Company had total assets of THB 182,446 million, decreased by THB 2,098 million from December 31, 2017. It was due to the following reasons:

- Account receivables decreased by THB 587 million or 5% from the end of 2017, mainly due to 7% decrease in product selling prices while 2% increase in volume. As of December 31, 2018, there were overdue more than 3-months account receivables amounting to THB 32 million or only 0.26% of the total account receivables which incorporated in the provision for doubtful debt of THB 27 million. The average collection period was 16 days in 2018, compared with 2017 of 19 days.
- Most of inventory consist of finished goods, raw materials and work in process. At the end of 2018, inventory decreased by THB 1,593 million or 5% mainly due to a decrease in inventory volume from 10.53 million barrels to 9.09 million barrels. The average inventory period was 40 days, compared with 52 days at the end of 2017.

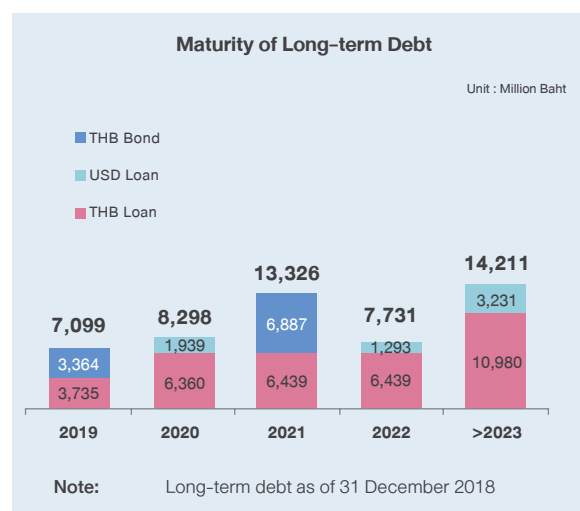
- Other current assets increased by THB 1,226 million or 26% mainly attributed to an increase in refundable value-added-tax of THB 856 million and an increase in other account receivables of THB 206 million.
- Non-current assets decreased by THB 1,144 million or 1% due to an increase of the accumulated depreciation and amortization of fixed assets and land disposal.

Liabilities

As of December 31, 2018, the Company had total liabilities of THB 95,066 million, decreasing by THB 1,828 million or 2%, compared to the end of 2017. It was due to the following reasons:

- Short-terms loans from financial institutions increased by THB 3,743 million or 127% for working capital.
- Account payables increased by THB 181 million or 1%. It was mainly owing to an increase in crude payables volume. The payment period was 36 days, compared to 43 days at the end of 2017.

- Other current liabilities decreased by THB 825 million, mainly attributed to a decrease in construction payables of THB 677 million, a decrease in advance payment for goods of THB 391 million, while an accrued bonus increased by THB 225 million.
- Long-term loans including current portion of long-term loan decreased by THB 5,147 million, mainly due to loan repayment of THB 11,651 million, while there was the long-term loan drawdown of THB 6,565 million.



The Details of Long-terms Debt are shown below;

(Unit: Million Baht)

Long-terms Debt	Dec 31, 2018	Dec 31, 2017	Change
Thai Baht Bonds	10,250	15,248	(4,998)
USD Loan	6,463	4,097	2,366
Thai Baht Loan	33,952	36,467	(2,515)
Total	50,665	55,812	(5,147)
less current portion of long-terms loan	(7,104)	(10,660)	3,556
Net Outstanding Debt	43,561	45,152	(1,591)

Note: The Company had currency swap contracts of Cross Currency Swap (CCS), Thai Baht debentures/long-term borrowing to swap principal from Thai Baht to US dollar and to swap interest rate on Thai Baht principal to interest rate on US dollar principals, and Principal Only Swap (POS), Thai Baht debentures/long-term borrowing to swap principal from Thai Baht to US dollar, in a total amount of USD 450 million as of 31 December 2018.

Other non-current liabilities were up by THB 220 million. This resulted from an increase in employee benefit obligations by THB 246 million mainly from increasing in employee benefits according to the Company's policy.

Shareholders' Equity

As of 31 December 2018, shareholders' equity was amounted to THB 87,380 million, which was lower than what was stated as at 31 December 2017 by THB 270 million. This was mainly from the dividend payment of THB 7,959 million and a decrease of non-controlling interests due to the status changed of IRPC Polyol Company Limited from subsidiary to joint venture amounting to THB 54 million while an increase in net profit amounting to THB 7,735 million.

Statement of Cash Flow

(Unit : Million Baht)

Statement of Cash Flow	2018	2017
EBITDA	18,344	20,420
Change in operating assets and liabilities	(40)	(174)
Net cash flows from (used in) operating activities	18,304	20,245
Net cash flows from (used in) investing activities	(6,537)	(9,768)
Net cash flows from (used in) financing activities	(11,575)	(10,375)
Net increase (decrease)	193	103
Cash at beginning	2,145	2,042
Cash at ending	2,338	2,145

As of 31 December 2018, the ending cash was THB 2,338 million. Net cash flow increased by THB 193 million, which was mainly contributed from the following items;

- Net cash inflow from operating activities of THB 18,304 million consisted of EBITDA of THB 18,344 million and changes in the operating assets and liabilities of THB 40 million. The cash outflows from the operating transactions included an increase in refundable VAT of THB 883 million. Nevertheless, the cash inflows from operating transactions included a decrease in account receivables of THB 459 million and a decrease in inventory of THB 293 million.
- Net cash outflow from investing activities of THB 6,536 million, mainly from projects such as PP Compounding (PPC) project and Catalyst Cooler project.
- Net cash outflow from financing activities of THB 11,575 million; mainly from the long-term loan payments of THB 5,147 million, the interest payment of THB 2,182 million and the dividend payment of THB 7,959 million, loss from financial derivatives contracts by THB 294 million while there were the short-term loans drawdowns of THB 4,031 million.

Liquidity and Capital Structure

In 2018, current ratio was 0.95 times, closed to 2017 level of 0.96 times. The Company has sufficient

liquidity for its operations. At the end of 2018, net debt to equity ratio was 0.63 times, decreasing by 0.02 times from 2017. This was mainly due to loan repayments in 2018. The Company could complete all payments on due date and comply with all of the Financial Covenants.

2019 Business Outlook

1. Petroleum Business

Crude oil price in 2019 is expected to increase from 2018 Year End price and move in the range of USD 60-68 per barrel, has encouraged by an easing of the U.S. - China trade war intensify after trade negotiations between the two countries are positive. The crude oil demand is forecasted to expand by 1.1-1.3 million barrels per day. Meanwhile, Saudi Arabia is likely to reduce the additional crude oil exports in order to balance the market in addition to the production cuts agreement among OPEC on Non-OPEC countries by 1.2 million barrels per day after the meeting on December 7, 2018. However, crude oil price remains under pressure from the increasing level of the U.S. crude oil inventory expectations amid growing the U.S. output. Furthermore, there are long-term factors that need to be watched such as green energy policy and new oil standards from IMO. And also, the digital technology that play an important role in the energy industry throughout the supply chain which may cause the changing consumer behavior and switching demand for energy.

2. Petrochemical Business

In 2019, Petrochemical business tends to be more favorable when compare to last year situation especially Styrenics products because the concern over trade war between the U.S. and china has been relief. China is the world's largest demand country for Styrenics products since it is one of the major producers for electronic equipment, electrical appliances and automobile. Plus, the Chinese RMB value is more stable than last year, leading to the higher demand for polymers and also the slightly increase in Petrochemical new capacity helped support its price.

Likewise, Polypropylene products are expected to be increased. According to forecasts, the new capacity for the year 2019 is approximately 2.5-3.0 million tons which is lower than the increasing demand as the development of the digital age changes, resulting in more plastic products consumption. Including the government supporting on long-time used vehicles reduction and promote the electric vehicles to reduce environmental problems which will increase plastic demand. Moreover, the unplanned shutdown plants in the Middle East helps to keep prices at a high level. For Polyethylene products, it is expected to be pressured by new capacity that has increased considerably over the past 2-3 years, especially from the U.S. while the demand is likely to grow at a lower rate due to the lower growth of global economy.

Nevertheless, there are other major factors, such as the level of crude oil price, the Asia and global economic growth including the political stability of producing countries that also impact the industry.

Investment Projects

1. Investment Project Progress

1.1 The Value-added Projects for UHV

After the UHV Project completed, the Company initiates the value-added projects for UHV including Gasoline Maximization Project and UHV Catalyst Cooler Project. The progress of projects are as follows:

- Gasoline Maximization Project: The objective is to increase Gasoline production approximately 25 million litres per month in order to capture the domestic market. The project has started commercial operation since November 2017. In 2018, the Company is able to increase more Gasoline production volume than designed.
- UHV Catalyst Cooler Project: The objective is to enhance the production efficiency by using more heavy crude oil and to reduce heat in the Catalyst Regenerator. The project is currently under construction and targeted to be COD by 1Q19.

1.2 EVEREST Project and EVEREST FOREVER Project (E4E)

The objective of EVEREST Project is to improve the core competencies as well as the organization and human resource development by applying the best practices and strengthening organization health. Furthermore, IRPC has launched EVEREST FOREVER Project (E4E) to top up on Everest Project and add more benefit by USD 100 million or THB 3,300 million per year. In 2018, Everest and E4E Projects could contribute the EBIT of THB 9,367 million.

1.3 IRPC 4.0 Project

IRPC 4.0 Project is to apply modern digital and technology in order to enhance the efficiency of operational organization and develop customer service thru digitization. There are five key areas as following:

- (1) OPS 4.0: To increase operating efficiency being Smart Operation and provide the planning and monitoring system thru Artificial Intelligent (AI).
- (2) CCM 4.0: To increase sales and marketing efficiency via Customer Centric Digital in order to access to the customers' demand with rapidly response.
- (3) ISC 4.0: To provide smart program for the raw materials purchasing and production planning. This program also be able to analyze customer behavior and manage delivery activities along the supply chain management.

- (4) PRO 4.0: To improve procurement system and competitiveness thru the lower of procurement cost and time, the lower of duplication work, and the increase of procurement planning efficiency.
- (5) ERP 4.0: To restructure the Information Technology (IT) in relation with the transformation to digitization. It will be focusing on database remodeling and increase infrastructure capability to be IT excellence.

2. Investment Plan

The Company's 5-year investment plan (2019-2023) including the committed capital expenditure (CAPEX) amounting to THB 71,043 million as well as CAPEX for investment opportunities amounting to THB 34,141 million. The committed CAPEX contributes to projects for the implementation of the "GDP" strategic plan; Power of Growth, Power of Digital, Power of People. The objective is to encourage the

Company's business growth with the excellent organization and to develop the employee's capability for sustainable growth. The major investment plans are including:

- (1) MARS or Maximum Aromatics Project; for Para-xylene and Benzene production which is value-added upon existing feedstock thru smart technology in order to increase cost competitiveness.
- (2) General and Maintenance Projects; which includes Major Turnaround CAPEX in 2022 as being planned every 5 years.
- (3) Strategic Investment Projects are mainly for products upgrading preparation in order to meet the Euro 5 standards.
- (4) E4E and IRPC 4.0: E4E is ongoing project of the "EVEREST", the efficiency improvement project. Whereas, IRPC 4.0 project is the integration of digital system and innovations throughout the Company's supply chain.

(Unit: Million Baht)

Investment Projects*	2019	2020	2021	2022	2023	Total
(1) MARS Project	4,034	9,532	16,256	10,765	616	41,203
(2) General and Maintenance Projects	2,481	2,912	2,743	4,782	2,821	15,739
(3) Strategic Investment Projects	642	533	4,103	3,314	-	8,592
(4) E4E and IRPC 4.0 Projects	1,924	387	-	-	-	2,311
(5) Others	2,235	723	108	83	49	3,198
Total	11,316	14,087	23,210	18,944	3,486	71,043

Note: * Excluding capex for investment opportunities amounting to THB 34,141 million



CORPORATE RESPONSIBILITY

Corporate Social Responsibilities

Qualities, Safety, Occupational Health
and Environmental Management (QSHE)

Sustainable Management Structure

APPENDIX

Corporate Governance Report of Thai Listed
Companies (CGR) 2018

Compliance with Corporate Social
Responsibilities



Corporate Social Responsibility projects which are tied to National Strategy

IRPC has consistently operated its business on the foundation of corporate governance in conformity to UN Global Compact which stresses on honesty, transparency coupled with a concern on social and environmental responsibility and human rights with an effort to achieve 17 sustainable development goals. Such objectives are tied to sustainable development goals, national strategy, economics of the nation and social development plan no.12 and also enforced in the Constitution of Thailand, section 65 which states that the objective of sustainable development must be included in the strategic plan. IRPC; therefore, strongly believes that the organization striving to create innovation for sustainability and operate its business with responsibility will successfully become the future leader.

Problems and sustainable development goals	SUSTAINABLE DEVELOPMENT GOALS-SDGs	Business	IRPC's projects
1. Disparity between the rich and the poor (Ref TDRI) Strategic plan no. 3 the development and reinforcement of people's capability Strategic plan no. 4 the creation of opportunity social equality	    	- Eco Industrail Zone - Sustainable Development	- Lam Sai Yong model project - Community enterprise project - Prostheses Foundation of Her Royal Highness the Princess Mother - Give Never Stop project
2. Premature pregnancy Strategic plan no. 3 the development and reinforcement of people's capability	  		- CSR educational project - Promotion of women's right project - Muslim Foundation for Underprivileged Youth Project
3. Changing climate affecting epidemic incidence Strategic plan no. 1 Security issues Strategic plan no. 3 the development and reinforcement of people's capability Strategic plan no. 4 the creation of opportunity social equality	    	- Eco Industrail Zone - Promote Innovative products for quality of life and environment	- Restoration, conservation and protection of mangrove forest project - National trail and mangrove forest view tower - Reforestation project to protect waves (Chumporn)
4. Changing educational values Strategic plan no. 3 the development and reinforcement of people's capability Strategic plan no. 4 the creation of opportunity social equality	  	IRPC Technology College	- Cubic Academy project 1 for 9 project - School for elderly, Amphoe Mueng Rayong - The Legend of Mon Phra Padaeng
5. Medical treatment right Strategic plan no. 3 the development and reinforcement of people's capability Strategic plan no. 4 the creation of opportunity social equality Strategic plan no. 6 balance adjustment and development of public management	  		- Health Promotion Fund for communities surrounding IRPC Industrial Zone - KVIS VISTEC - Pan Nam Jai Clinic - GIVE NEVER STOP project - Mobile medical unit to check-up health for community - Project to monitor the wellness of people
6. Unbalanced cost of living and wages Strategic plan no. 3 the development and reinforcement of people's capability Strategic plan no. 4 the creation of opportunity social equality Strategic plan no. 6 balance adjustment and development of public management	  	- Power of People - Human Resource Development - IRPC Technology College	- San Palung Social Enterprise Co., Ltd. - Employment opportunity for mooring rope project - CONNEXT ED Project
7. Natural disaster and its prevention Strategic plan no. 1 security issues Strategic plan no. 2 the creation of competitiveness Strategic plan no. 5 the building of growth on environmental friendly quality of life Strategic plan no. 6 balance adjustment and development of public management	    	- Eco Industrail Zone - Green Port (MARPOL)	- Restoration, conservation and protection of mangrove forest project - Lam Sai Yong model project

17 Goals to Transform Our World

1. No Poverty
2. Zero Hunger
3. Good Health and Well Being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnerships for the Goals



Problems and sustainable development goals	SUSTAINABLE DEVELOPMENT GOALS–SDGs	Business	IRPC's projects
8. Drought and need for agricultural products Strategic plan no. 1 security issues Strategic plan no. 2 the creation of competitiveness Strategic plan no. 5 the building of growth on environmental friendly quality of life		Eco Industrail Zone – Reservoir for the Community	- Lam Sai Yong model project - Community Enterprise project - Smile Farm for Chance project
9. Promotion of maximization of space utilization Strategic plan no. 2 the creation of competitiveness Strategic plan no. 5 the building of growth on environmental friendly quality of life Strategic plan no. 6 balance adjustment and development of public management		- Asset Management - Eco Industrail Zone - Combined He and Power Plant - IRPC Technology College	- Lam Sai Yong model project - Protection Strip project
10. Coastal fishery area and inundation Strategic plan no. 5 the building of growth on environmental friendly quality of life Strategic plan no. 6 balance adjustment and development of public management		- Eco Industrail Zone - Green Port (MARPOL)	- Restoration, conservation and protection of mangrove forest project - Fish Aggregating Devices, Chumporn Depot
11. Promotion of tourist attractions in various dimensions Strategic plan no. 2 the creation of competitiveness Strategic plan no. 5 the building of growth on environmental friendly quality of life Strategic plan no. 6 balance adjustment and development of public management		Business operation with Corporate Social Responsibility	- The Legend of Mon Phra Padaeng - Rak Le Rak Silp Tin Tai project - Restoration, conservation and protection of mangrove forest project - National trail and mangrove forest view tower - Plastic Rights project
12. Thailand, a door to the new world Strategic plan no. 1 security issues Strategic plan no. 2 the creation of competitiveness Strategic plan no. 6 balance adjustment and development of public management		- Petrochemical and Refinery Business - Supporting Business - Promote Innovative products for quality of life and environment	KVIS/ VISTEC
13. New energy source from waste management Strategic plan no. 2 the creation of competitiveness Strategic plan no. 5 the building of growth on environmental friendly quality of life		Eco Industrail Zone	- Protection Strip project - Plastic Rights project
14. Life safety and waste management area Strategic plan no. 4 the creation of opportunity social equality Strategic plan no. 5 the building of growth on environmental friendly quality of life		- Green Port (MARPOL) - Sustainable Development	- Love Rayong River project - Plastic Rights project



Corporate Social Responsibility

In 2018 the Board of Directors defined and reviewed operational and strategic plans of both short-term and long-term CSR jointly with the management. It also agreed to push forward the strategies of good corporate governance and corporate social responsibility plan (CG & CSR Excellence) as in 2017 to achieve sustainable growth and IRPC's vision. A policy was also formulated that truly valued social activities by allocating its specific, annual budget starting from 2019. The target was to ensure the stakeholders of IRPC's commitment to continuous and appropriate social activities.

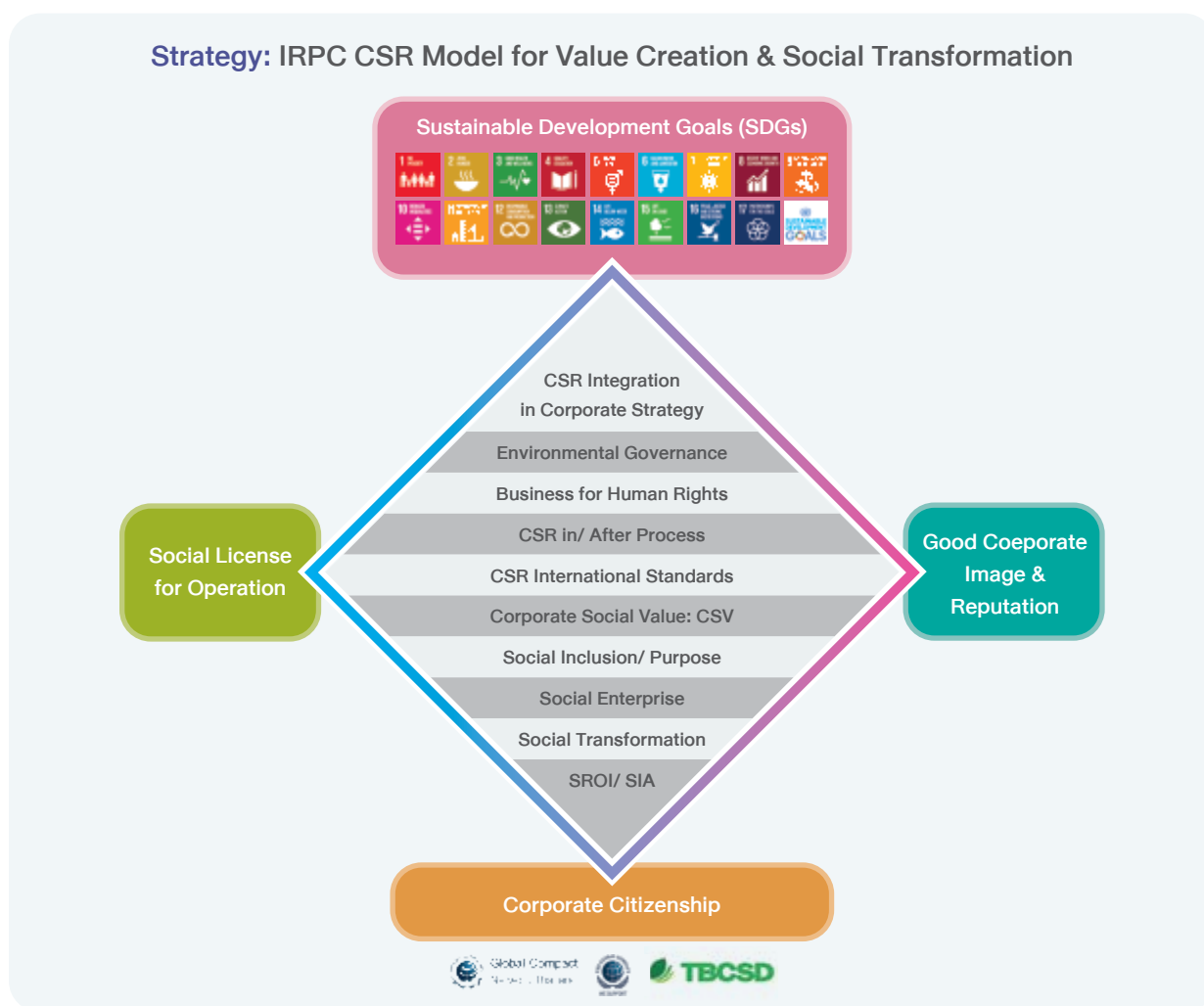


CSR Process

IRPC has implemented its CSR process to create value for stakeholders, including society and the communities as follows:

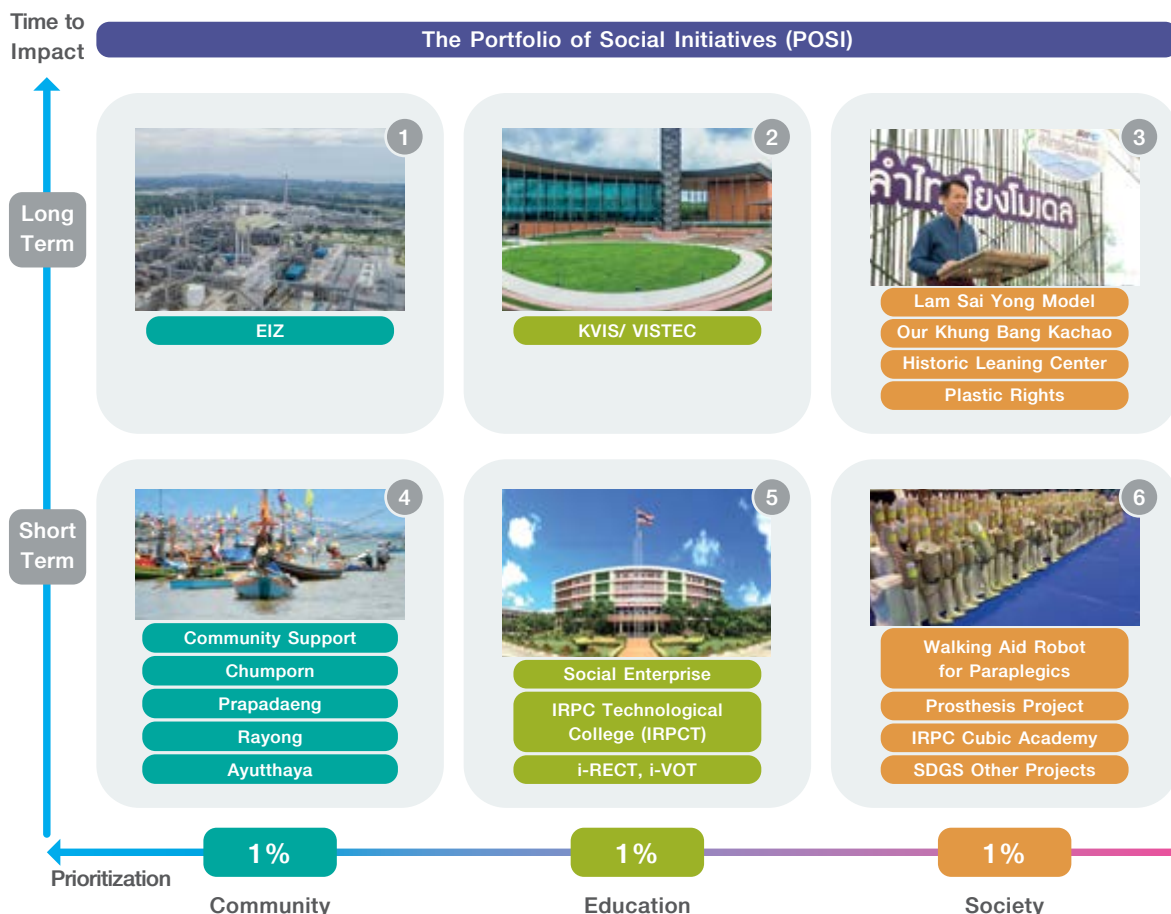
1. IRPC determines that CSR is part of the organizational strategies on sustainable growth, links to its core business, and connects the structure covering good governance, the environment, human rights for business organizations, international standards, common interests with stakeholders, participation of society and communities in the design of and benefit from projects, business operation for society, evaluation of social returns of projects, and the target to create value-added and improvement for society and community, among others. The operation based on the model also benefits IRPC on sustainable co-existence between plants and communities, enhances good image, in line with the target of sustainable development and the global citizenship, based on the United Nations guidelines.

2. In 2018 the Board formulated a policy allowing IRPC to allocate 3% of the average net benefit for the past three years for annual social activities. To ensure sufficient budget for continuous activities and for stakeholders' confidence, the budget was divided into three parts, namely Education projects, projects for the communities surrounding IRPC's sites, and projects for overall society across the country. Details of major CSR projects in 2018 appear on page 216-227



Moreover, the criteria for selecting CSR projects were defined to create balance between impacts on society, communities, including IRPC and duration of projects that might cause such impacts to maintain the highest benefits in terms of budget spending, anti-corruption, and benefit-building for every stakeholder. IRPC also conducted anti-corruption evaluation of its CSR projects, the results of which were negligible.

CSR Strategy: Ensure to spend 3% of average annual net profit over 3 preceding years in CSR



3. Compliance with Sustainable Development Goals (SDGs): The project's format was designed for compliance and in response to SDGs 17 of the United Nations. Between 2017 and 2018, IRPC successfully performed and completed all 17 goals of SDGs. IRPC evaluated business sustainability by employing DJSI, which are considered corporate goals and objectives. In 2018 IRPC was the leader in the Oil and Gas Refining and Marketing Category for the first time and had been a certified DJSI member for five consecutive years. This required transfer of knowledge, understanding, creation of participation in concepts/activities and CSR guidelines for employees and stakeholders on a regular basis.

4. Business operation in line with the UN Global Compact (UNGC), of which IRPC has been a certified member since 2011. In 2016 IRPC participated in the founding and the Steering Committee of Global Compact Network Thailand (GCNT), officially launched in November 2018. Global Compact Network Thailand was one of the networks with over 80 member countries worldwide to implement the ten international principles of UNGC, encompassing four major areas with responsibility for its obligations. To this end, the Board has specified a Good Corporate Citizenship Policy under the UNGC to be enforced in IRPC and IRPC group. Details of Corporate Governance Report appear on page 111

Compliance with ISO 26000

IRPC's significant operations in 2018 based on ISO 26000, Guidelines for Social Responsibility, and Guidelines for CSR Report of SET included the following:

1. Corporate governance

IRPC has strictly and constantly operated business in compliance with its corporate governance policy. Details of Corporate Governance Report appear on page 107-131.

2. Fair business operation

IRPC has prepared Corporate Governance, Code of Conduct, and Compliance Handbooks, which have been disseminated on IRPC's website and reviewed annually to strictly enforce compliance by all employees. Details of Corporate Governance Report appear on page 121 and Management Structure on page 95-96.

3. Anti-corruption

IRPC has strictly conformed to its anti-corruption policies both within IRPC and for business partners across the supply chain. Details of Corporate Governance Report appear on page 123.

4. Respect for human rights

IRPC respects and encourages the protection of human rights as declared in the UN Global Compact (UNGC) with equitable treatment regardless of similarities or differences in race, religion, gender, age, education background and social status. IRPC

also values an individual's right and freedom while striving to protect personal information. Details of Corporate Governance Report appear on page 121 and Sustainable Management on page 237

5. Equitable treatment of labor

IRPC provides equitable treatment of labor by setting up an operation system with emphasis on safety and appropriate workplace sanitation. IRPC regularly improves and enhances employees' potentials and skills under Individual Development Plans and Succession Plans with the use of an efficient and fair performance management system while simultaneously supervising and improving employees' welfare as deemed appropriate. Moreover, employees' involvement and satisfaction with the organization for future development were evaluated, and opportunities were provided for a legal labor union. Details of Corporate Governance Report appear on page 123.

6. Responsibility for consumers

IRPC takes into consideration different consumers' behavior and requirements while stressing maximum customer satisfaction, manages efficient product distribution channels, and establishes an IT system to handle important databases for each business type in accordance with the IRPC 4.0 Policy.

7. Community and society development

IRPC operates these projects under multiple dimensions. Details of major CSR projects in 2018 appear on page 216-217.





Key Corporate Social Responsibility Projects 2018



EDUCATION

Vidyasirimedhi Institute of Science and Technology and Kamnoetvidya Science Academy

The company is one of the founding members of Vidyasirimedhi Institute of Science and Technology and Kamnoetvidya Science Academy together with the other companies in PTT Group and to provide a budget for operations on a regular basis since 2014 to create excellent Thai scientists and researchers for the country.

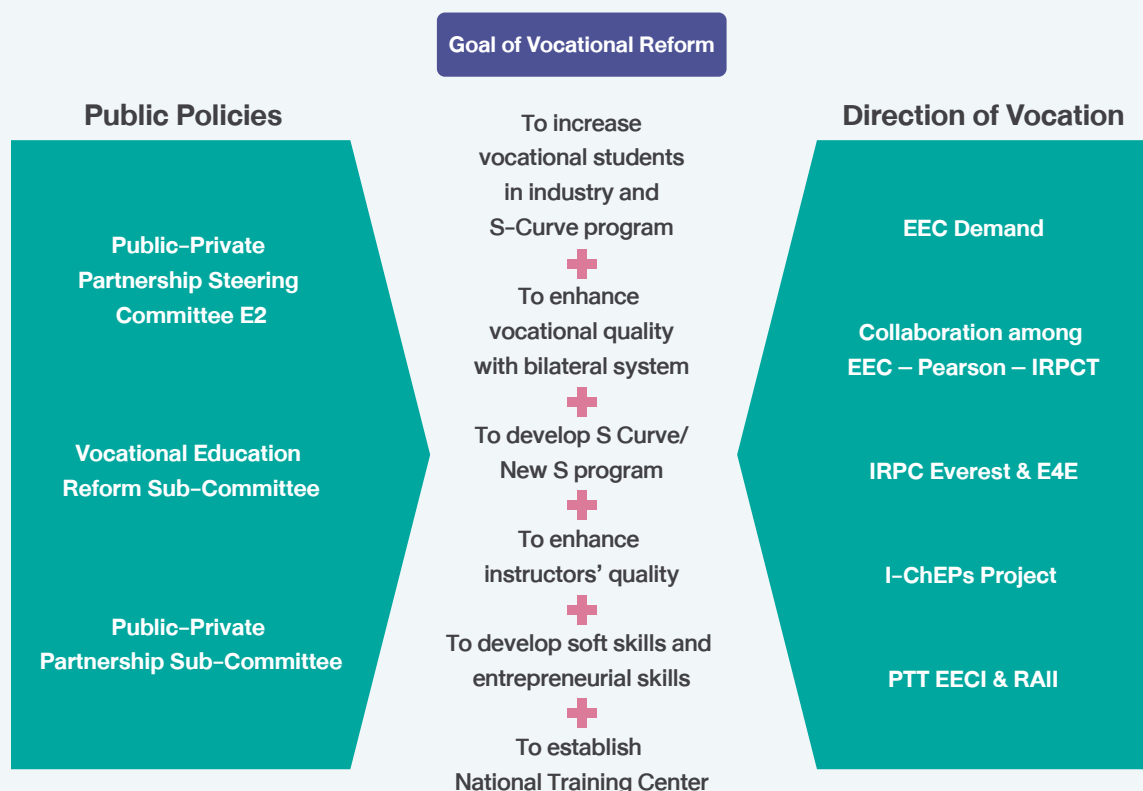
IRPC Technological College

IRPC Plc. invested Baht 750 million in the registered capital of IRPC Technology Co., Ltd., accounting for 99.9%, to found IRPC Technological College (IRPCT).

The initial objective was to be the community's vocational institute that serves Rayong locals' needs for an education institute producing skilled technicians in the industrial sector of Rayong. Since many plants are scattered around Rayong, there is a high demand for skilled labor.

IRPCT is located in Tambon Choeng-Neon, Amphoe Mueang, Rayong. Since the college opened its door in 1995, IRPC has provided support by annually donating money in accordance with the college's plan. In 2018, IRPC donated about Baht 47.2 million to upgrade the venue, laboratory and teaching apparatus. Currently, IRPCT has become a high-quality vocational institute for Rayong residents. It not only produces quality personnel to serve the growing demand of industry and the service sector in Rayong and its vicinity, but also facilitates the learning of students from neighboring countries.

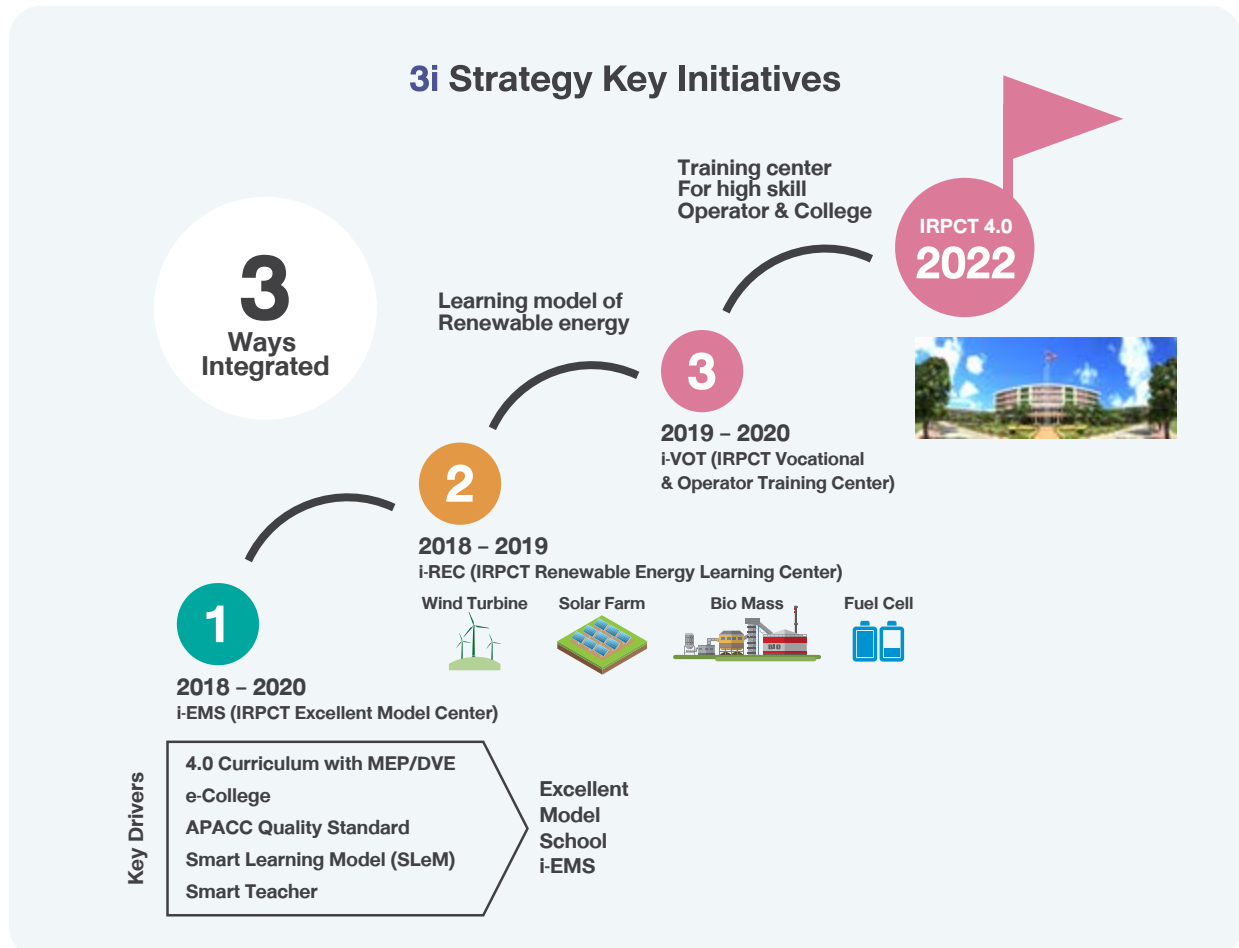
Thailand 4.0 Agenda “Vocational Model 4.0 ”



For the past 23 years, IRPCT has produced over 7,000 high-quality industrial and commercial personnel for leading companies in the industrial and service sectors on the Eastern Region. Its educational standard was certified by the Office of the Vocational Education Commission (VEC) and the Office for National Education Standards and Quality Assessment (ONESQA). Unceasingly managing quality education, IRPCT was the first educational institute honored with a Royal Award of H.M. the late King Bhumibol in 2010.

In addition to Thai students, IRPCT currently welcomes international students who further their education thanks to the collaboration among local and international entities, such as the Ministry of Electricity and Energy and the Ministry of Education of Myanmar, Department of Vocational Education of Laos, CPSC (Colombo Plan Staff College), PTT Group affiliates and vocational colleges from different countries. With Thai, Myanmar, Laotian, Cambodian and Vietnamese students, IRPCT was considered Thailand's vocational college that educates students from five nations.

IRPCT personnel took part in driving national development in vocational education in several sectors by serving on the Public-Private Partnership Steering Committee (Competitive Workforce) E2, independent sub-committee (vocational education reform) and Public-Private Partnership Sub-Committee to Develop Vocational Manpower in the Energy Sector. They therefore had an opportunity to acknowledge helpful challenges that could be applied to the strategic plan called IRPCT 4.0.



Since 2016, IRPCT has implemented the IRPCT 4.0 strategic plan to improve the college's quality and fulfill the vision to be Thailand's top five vocational college by 2020 under the three following missions:

1. To excel itself by improving the infrastructure, teaching apparatus, and programs. IRPCT also applies an active learning process that changes the role of instructors from teachers to facilitators by using the Smart Learning Model (SLeM). The education standard certified at the international level is the key indicator for IRPCT to be a leading vocational college. As a result, it applied for APACC (Asia Pacific Accreditation and Certification Commission) standard assessment, scheduled to be implemented in 2019. It is also collaborating with Pearson Education in the United Kingdom to develop a Mechatronic program that will start in 2019 to meet the BTEC (Business and Technology Education Council) standards. It is one of many IRPCT programs that meet international standard and aim to produce manpower under the Thailand 4.0/EEC policy.

2. To develop a Renewable Energy Learning Center. It serves as communities' source of learning on renewable energy, currently the direction of energy and the way forward. Communities can learn four types of renewable energy, namely solar, wind, biomass and fuel cells.

3. Building a state-of-the-art training center for operators or technicians of IRPC and PTT Group. In addition to serving IRPC and PTT Group, the center offers services to local vocational institutes and helps government save its investment. This project is currently under consideration.



The MOU signing ceremony aimed to develop vocational education with CPSC (Colombo Plan Staff College). The ceremony was presided over by Dr. Suthep Chitayawong, Secretary-General, at the Office of the Vocational Education Commission.



The EEC Taskforce and Pearson Education Co., Ltd., visited IRPCT to jointly develop a program that meets the BTEC (Business & Technology Education Council) standard of the U.K. and serves EEC needs.

IRPCT remains committed to upgrading the educational quality and producing quality labor for Rayong province, establishments in the EEC zone, and across Thailand. It will take part in driving the national economy.



COMMUNITY

Flood Problem Solution around IRPC's Industrial Zone



In response to communities' concerns over the floods that happened during every rainy season, IRPC has defined measures and formulated plans to prevent and solve the problem. Since 2016 the project has included collection of waterborne weeds and canal dredging inside and outside the industrial zone.

In 2018, IRPC also provided heavy machinery to develop the communities' public areas, by dredging of seven canals surrounding its industrial zone, namely Nong Si Som, Na Ta Khwan Sub-District; Nong Nam Tha Kra Sao, Ban Laeng Sub-District; Klong Ban Laeng, Ban Laeng Sub-District; Klong Ta Son, Kon Nong Village, Ban Laeng Sub-District; Klong Ta Paw, Taphong Nai Village, Taphong Sub-District; Klong Khukrit, Taphong Community; and Klong Ka, Choeng Noen Sub-District, Muang District, Rayong Province. This helped add water storage capacity location and reduce the impact of flooding during the rainy season.

Water levels in the reservoir in the zone were lowered to accommodate up to 1 million cubic meters of water in case of heavy rain. Levels of rain water and water in the Rayong reservoir would be regularly measured in cooperation with the Rayong Royal Irrigation Office for the opening and closing of the floodgate to release water flow to the sea to correspond to the retained water.

Pun Nam Jai Clinic

Since 2010 Pun Nam Jai Clinic, located at IRPC Community Network Learning Center, has been providing free public health services and basic medical check-ups for all communities living around IRPC Industrial Zone.

This year Pun Nam Jai Clinic served 4,746 patients. Most of these patients (2,443) were from Choeng-Noen Sub-District while 870 were from Rayong Municipality. Most of them suffered from musculoskeletal disorders, high blood pressure, and gastrointestinal and respiratory tract disorders. Medical records are forwarded to Rayong Hospital for treatment planning. Moreover, in 2018 the number of IRPC cards increased from the previous year by 750. The total number of IRPC cards handed out was 9,841. The cardholders were entitled to free service at the clinic and a Baht 0.50 per liter of discount at IRPC service stations.

Mobile Medical Unit for the Communities



Mobile clinical services in collaboration with Queen Sirikit Hospital provide medical care to patients

IRPC established a mobile clinical service in collaboration with Queen Sirikit Hospital, Naval Medical Department, to provide medical care to patients who cannot travel to hospitals or to Pun Nam Jai Clinic. The mobile clinic provides all services free of charge, such as herniated disc disorder, respiratory, and gastrointestinal tract disorders. Other services include tooth extraction and spectacles for the communities at THB 100 a pair (IRPC sponsored excess expenses). Moreover, IRPC personnel regularly acquaint the patients with information and news. The mobile clinic leads one monthly trip to the communities, in total 12 trips a year. This year it served 2,049 patients living in the area surrounding the zone, namely Ban Laeng, Taphong Na Ta Khwan, Choeng Noen, and Rayong Municipality. Records and information on healthcare services in the communities are to be used to plan future medical treatment programs for medical specialists.

Project to Monitor the Wellness of People

IRPC has set up a Geographic Information System (GIS) database of the communities surrounding its industrial zone along the direction of the wind to identify the movement and dispersion of air pollution, based on a mathematic model for air pollution, to be used in formulating work plans and measures to prevent, rectify, and mitigate health impacts on the communities of 10,398 families (38,256 persons). Random sampling of 900 specimens was collected for three years (from 2015 to 2017). Air quality test results would be analyzed to formulate a healthcare surveillance plan for the communities around the industrial zone.

Community Health Promotion Fund for Communities surrounding IRPC Eco Industrial Zone



In 2016 IRPC set up a Health Promotion Fund for surrounding communities to provide health care services within a 5-km radius of IRPC Eco Industrial Zone under the management of communities, and occupational health services provided by public health specialists. IRPC contributed THB 6 million to the fund every year. The fund brought about benefit in promotion, prevention, remedy, and improved health of residents surrounding IRPC industrial zone. Progress report meetings were held every two months.

This year 41 projects proposed by the communities and meeting the criteria were approved, such as the development of medical device system at Taphong Sub-District Health Promotion Hospital, the screening of colorectal cancer with Fit Test method at Taphong Sub-District, the surveillance and screening of breast cancer, cervical cancer, obesity, and stroke at Ban Laeng Village, purchase of outdoor exercise equipment for Choeng Noen Sub-District, basic healthcare training and eye examination for the elderly at Rayong Municipality, and basic health surveillance at Na Ta Khwan Sub-District.

Drinking Water for Communities

IRPC distributed clean drinking water to the communities and government agencies surrounding IRPC Industrial Zone to enhance relations and support their public activities such as religious ceremonies, training, seminars, cultural events, merit-making. This year IRPC gave out 205,296 cups (4,277 packs) and 28,380 bottles (2,365 dozens) of drinking water.

Promotion of Community Enterprise

Committed to the quality of life of those living around its industrial zone, IRPC has supported occupational groups of the residents since 2007. Potential through knowledge, processing skills, packaging development, product standards, and product marketing channels were enhanced. The study tours under the project included 1) Agro-tourism following in the footsteps of H.M. the late King Bhumibol, visiting pesticide-free vegetable plots at Thung Yang En Sub-District, Khao Chamao District, 2) Innovative OTOP village at Khao Noi Sub-District, Khao Chamao District, 3) Sufficiency Economy Learning Center: One Rai One Person to grow various species at Sam Yaek Thon Thai Village, Huai Thap Mon Sub-District, Khao Chamao District, with 75 participants. Five pilot groups were successful in achieving robust, self-reliant business, with income generated from the promotion and development activities of THB 325,390.32 per group. Moreover, in 2018 IRPC made procurement of community goods and services totaling THB 447 million.

Volunteers' Hearts for Community Development



IRPC employees, Styrene Production Unit, as Volunteer, built a check dam for community in Rayong Province

IRPC encourages its employees to apply their potential and knowledge to activities of the company and the development of communities surrounding IRPC Industrial Zone. The activities have included improvement of buildings and the community tap water system. Volunteers also held Thai and basic English courses for the elderly at Nongjok Convent School. The project aimed to benefit communities, raise public service awareness among employees, forge cooperation networks, and cultivate CSR DNA. This year a total of 2,242 employees joined the activities, with 6,880 hours spent.



305 scholarships for the Community Project in 2018

Public Facilities

In response to communities' needs where the government budget was not available, IRPC implemented projects to complement the communities and increase potential of areas in Rayong Province, such as improvement of the landscape of the building for the gathering of Sub-District and District heads at Ban Laeng Sub-District, improvement of the landscape of Queen Sirikit Forest Park, Song Phi Nong community, and others, and improvement of the building of Ban Nongjok School at Cheong Neon Sub-District.

Scholarships for Community

IRPC provides educational opportunities through the Scholarships for the Community Project. In 2018, 305 scholarships worth THB 2,085,000 were given to 305 needy youths with good academic records and behavior who lived around IRPC Industrial Zone. These students were from primary, secondary, vocational, and university levels and were selected by the boards of each community for those living in municipal areas of Choeng Noen Sub-District, Taphong Sub-District, Ban Laeng Sub-District, Na Ta Khwan Sub-District, Rayong Municipality, and Muang District, Rayong Province.

School for the Elderly, Muang District, Rayong Province

IRPC values life-long learning and the development of the elderly's quality of life by setting up a school for them at Muang District, Rayong Province. The courses

and learning activities were designed to enhance their knowledge and skills and provide them with the opportunity for social gathering or common activities which would suit them and make them happy, both physically and mentally. The knowledge gained would increase income and benefit them, their families, and society. This year the school had 138 students and held 16 learning activities. The activities included recreation such as Paslop dancing, cooking class, keyring making, herbal shampoo making to build on their occupation; Thai traditional medicine to take care of themselves at home; ribbon folding; study tour of Song Salueng Natural Farming Center at Klaeng District on Sufficiency Economy; tour of prayers and meditation at Bhumas Forest Monastery; and plant study tour for the elderly.



Students of school for the elderly were making keyrings

Community Network Learning Center



English Day Camp activity to educate English skill for people in community with free of charge

IRPC's Community Network Learning Center was established to transfer knowledge, promote, and develop the environment, develop occupation and economy in the communities, as well as strengthening relations among community members, among communities, and with IRPC. The activities change every month and include cooking classes for food and sweets, Design Reuse Club (quilt making), yoga club, science club, English club, mental arithmetic club, rhetoric club, taekwondo club, and ballroom dancing club. This year 11,187 people joined the activities during weekends and 27,356 people used the meeting room.

Annual Kathin Samakkee

IRPC arranges a Krathin Samakkee ceremony annually for the temples in the area surrounding IRPC Industrial Zone to promote and conserve Buddhism and the Thai culture together with communities, government, and the private sector. This year IRPC arranged this ceremony at ten temples by hosting at two temples and co-hosting at eight others, using a total budget of THB 1.8 million.

Buddhist Robe and Candle Offering

Aware of the importance of conserving Buddhism with the longstanding tradition of annual robe and candle offering, in 2018 IRPC co-hosted the robe and candle offering at nine temples, namely Nong Wa, Chak Mak, Samnak Thon, Sa Kaeo, Suwan Rangsan, Khao Phu Don, Noppakao, Makham Diao, and Taphong Nok Temples.

Thai Shadow Puppet Theater (Nang Yai), Ban Don Temple



IRPC joined in the conservation of this Thai cultural tradition, which was over 200 years old. The Nang Yai is a high-art performance which includes five invaluable arts, namely handicraft, dancing, music, rhetoric, and literature. IRPC provided a budget to cover the operating costs of two screens for the shows, costumes, and foods and encouraged youths interested in folk arts to learn the puppetry arts to instill in them pride and appreciation of their local arts, which would lead to further development and elevate it to national and international levels.

Open House

This annual event provided an opportunity for stakeholders to learn about IRPC's operations and environmental management. This year IRPC held a seminar on Environmental Management of IRPC Industrial Zone and arranged trips to the 15 plants under EIA measures project and the deepsea port (totaling 24 visits). The 1,003 visitors included teachers, pupils, students, the elderly, as well as residents and groups of community enterprises around the zone.

Apart from visits to forge relations with the stakeholders living around the zone, IRPC regularly disseminated information and news about its operation via media such as magazine, newsletter, press release, video, CSR story, brochure, radio station, and cable TV to all sectors.



Lam Sai Yong Model, Srisaket Province

Project for communities surrounding IRPC tank farm

The company has implemented a project for communities around IRPC depot in Chumphon, Phra Pradaeng and Ayutthaya every year. In 2018, the company equip fish aggregating devices for fish to lay eggs and escape the monsoon in the sea in front of Koh Samet, Chumphon. Mon Phra Pradaeng Tradition Heritage Project, Swan Parade and Centipede Flag during Songkran festival and Kathin Ceremony at Ayuthhaya depot, etc.



Fish Aggregating Devices, Chumphorn Depot



The Legend of Mon, Phra Padeng



SOCIAL SERVICES

Lam Sai Yong Model Project

The company has the objective for the Lam Sai Yong Model Project to be an example project that the private sector can support the government in solving drought problems with small budget and the period of implementation is 1 year. In 2018, Lam Sai Yong Model Project in Sisaket province is considered a completed model which is implemented by the company starting from studying of the water source and implementing until its completion. The details as following:

Tambon Nong Kaeo, Sisaket Province

In 2018, the company implemented Lam Sai Yong Model Project in Moo 8, Ban Non Epang; Moo 10, Ban Phon Wua; Moo 1 Ban Phon Kha and Moo 12 Ban Phon Sawang, Tambon Nong Kaeo, Amphoe Mueang, Sisaket Province through the digging of Kaem Ling canal to receive natural water in the rainy season and to receive overflow water from Huai Sun, a natural water source. The canal has an average width of 15 meters, length of 1,175 meters, average depth throughout the length of the canal between 4.3 - 6 meters and the construction of roads (use the soil from canal digging) at both sides of Kaem Ling canal with the length of 1,175 meters and the width of the road combined with Kaem Ling canal is not bigger than 24 meters in size. This project started in mid of 2017. The company has studied the details, coordinated with the Governor of Sisaket Province, conducted meetings with the community to seek their

Summary of Social Return on Investment (SROI) of Lam Sai Yong Model Project in Sisaket province

Project to develop water source (Lam Sai Yong Model) in Sisaket province has objectives to reduce and address water shortages problem and to be a reserve water source in the dry season allowing villagers to use water to do additional farming to generate income for their families, as a result, improving their quality of life. The benefits of the project equal to 14,178,385.73 baht from the use of budget in the water management project of 6,481,810.00 baht, which means the social return on investment is equal to 2.19 baht per 1 baht investment.

The benefit from the project					
Budget used in the project implementation	=	Social return on investment		14,178,385.73	= 2.19
				6,481,810	

opinion and understand their need until the community agree to let the project go on in the area that affect their own rice fields. The company started to dig the canal from 26 January 2018 and completed on 30 April 2018. The canal can store a maximum of 60,000 cubic meters of water enable 470 households in 6 villages to use the water from this canal in farming and earn their livings during the dry season.

Tambon Dan Na Kham, Uttaradit Province

In 2018, the company also implemented Lam Sai Yong Model Project in Organic Agriculture Center and Creative Space in Moo 8, Tambon Dan Na Kham, Amphoe Mueang, Uttaradit Province through the digging of a reservoir size of 1 rai and 6 meters deep to receive natural water in the rainy season for reserving. Organic Agriculture Center and Creative Space is a learning center that provides knowledge on organic agriculture process to farmers, youths and the general public. In the past, the center uses the water from artesian wells from the nearby communities and divide that water to 5 households to use during the dry season. After the company finishes digging the reservoir, there are 9,600 cubic meters of reserved water for agricultural use in the dry season which can be used for another 10 households.

Ban Nong Yang, Tambon Lam Sai Yong, Buriram Province

Lam Sai Yong Model Project (formerly known as the Build Canal Build People Project) started in mid of 2014 in Tambon Lam Sai Yong, Amphoe Nang Rong, Buriram Province. The company together with the Foundation for

Education and Public Welfare dug 5 reservoirs at Nong Yang Village with a total area of 18 rais with an additional 4 meters depth and adjusting the reservoirs to link to each others. As a result, reserved water is increased from 41,000 cubic meters to 91,000 cubic meters and could be used as a water source for the village's water supply increasing the number of households that could benefit from this reservoir from 350 to 440 households. In 2015, the company brought volunteer staffs to take action and improve the water production system of Nong Yang Village, in the past the water produce is with high sediment concentration and could not be consumed but after the help from the volunteers they could produce clean water and the quality is according to the standard.

Pa Don Jon, Tambon Lam Sai Yong, Buriram Province

In 2016, the company brought volunteer employees who are knowledgeable and specialize in construction and electricity to connect water pipeline (PE pipe) from public aqueduct of Tambon Lam Sai Yong for 1.2 kilometers to the reservoir dredged by government at Pa Don Jon, Tambon Lam Sai Yong, Amphoe Nang Rong, Buriram Province. The capacity of the reservoir is 270,096 cubic meters, but there is no water into the reservoir as it only waits for the rain, as a result, the villagers could not make use of this reservoir. The company brought volunteer staffs to study the area and plan the excavation and laying of water pipes and use a solar water pump to pump the water from the public aqueduct to reduce the electricity fee of the villagers. The project started in September 2016 and completed in November 2016 and tested the system and delivered the water pipe to the



Mr. Sukrit Surabotsopon, President of IPRC PLC, was granted an audience of HRH Princess Maha Chakri Sirindhorn in presenting a six-wheeled truck to be used for the prosthetics mobile unit

villagers on 13 January 2017. This system could pump water into the basin for an average of 5 hours per day and able to reserve the water of 1,350 cubic meters per day increases the number of communities who make use of the reservoir from 3 communities to 10 communities.

Prostheses Project

This year IRPC in collaboration with the Prostheses Foundation developed plastic polymers to produce prosthetic sockets. Polypropylene grade 2550H was previously used but shifted to polypropylene grade 3340H. Due to the former's natural opaqueness, the adjustment of the prosthetic socket to the patient's stump took a long time, as the maker could not see if the socket was properly attached to the stump. Moreover, the patient's fitting and refitting of the socket, let alone pain from friction, caused the maker to make several adjustments. Sometimes, new sockets had to be remade.

However, after the development of IRPC's polypropylene grade 3340H with its transparent quality, the maker could now see the attachment of the socket to the stump and make necessary adjustment in no time. The prosthetic socket would perfectly fit the patient, and the production would consume shorter time.

Moreover, this year IRPC donated a container truck to

the Prostheses Foundation for the mission of the royally initiated mobile prostheses units; each time there was a need to transport a lot of equipment and devices to produce prostheses, with an average loading weight of 15 tons. The distance between the Foundation Headquarters in Chiang Mai Province and each mobile prostheses unit was quite long with the return trip of 1,000-2,000 km for each trip. Until now, the transport of equipment and devices for production of prostheses relied on an old, six-wheel container truck with a working life of over 15 years. Therefore, IRPC donated a Baht 2-million container truck to the foundation to facilitate transport of equipment and devices to the royally initiated mobile prostheses units.

Since 2011 IRPC has been donating its PP (polypropylene) product to the Prostheses Foundation of HRH the Princess Mother in contribution to prostheses production at the average of 20 tons a year for disabled people to have a better quality of life in line with the concept of Creating Shared Value (CSV). IRPC has donated PP to the Prostheses Foundation Headquarters in Chiang Mai Province, and the royally initiated mobile prostheses units both in Thailand and in neighboring countries such as Malaysia, Myanmar, and Cambodia from the royally initiated prostheses plants located in 74 hospitals nationwide. IRPC's PP has also been delivered

to prostheses plants, established by the Prostheses Foundation, in military hospitals in such low income countries as Burundi and Senegal, where there were amputees due to domestic unrest, and in Banda Aceh, Indonesia, where there were amputees due to tsunami, domestic unrest, and others.

From 2011 to December 2018, 21,579 pieces of prostheses were produced from IRPC's PP (excluding the ones produced by prostheses plants abroad).

Apart from its donation of PP, IRPC collaborated with the Prostheses Foundation to conduct research and development on materials for the production of quality, durable, and light prostheses and prosthetic equipment facilitating disabled people's movement and enabling them to lead normal lives.

Plastic Rights project to promote the use of plastic with responsibility and respect the human rights principles of the business sector

The company together with Thammasat University and communities around IRPC in Rayong Province, organized a project "Plastic Rights: Kayaking and waste collecting to reserve Rayong river". There were government officials in Rayong Province, leaders and communities in Rayong, Rayong River Conservation and Mangrove Restoration Group, entrepreneurs, teachers and students from Thammasat University participated in this activity to raise awareness of reserving the water source and to make Rayong river clean that can be shelter for variety of biologicals and to create awareness of natural resources conservation, reduce wastes in the river in a structured and sustainable way coupled with waste separation for recycling.

In addition, there is also a Plastic Rights event, 3R market, which is organized to promote the use of plastic with responsibility and worthy. By focusing on carrying out activities promoting the use of plastic with responsibility and increase awareness of the use of plastic with value and changing the attitude of the general public for them to know that "plastic is not the perpetrators and we can save the world if we use plastic in the right way" resulting in plastic not becoming a burden or waste that cause negative impact towards society in accordance with the guidelines for respecting human rights principles of the business sector. The 3R principles is reduce: use as much as necessary, reuse: use again and recycle: separate the plastic before throwing away so that it can be used again and the project of 5 S. This received a lot of support from many agencies, entrepreneurs, experts and academics that they come to provide knowledge and engage in many interesting activities. Last but not least, Big Cleaning campaign is to sort plastic waste in an environmentally responsible manner at the IRPC Community Learning Center, Rayong Province.



Summarizing all the amount of GHG that has been reduced in the Plastic Rights event through the form of Carbon Footprint which in total is 5.943 tons CO₂e



**Transportation of event goers
= 4.713**



**Using Plastic Crates
instead of Plywood
= 0.394**



**Waste Separation,
Refrain of Foam Usage and
Reduce Food Waste Campaign
= 0.692**



**Using of LED
lighting equipment
= 0.144**

Greenhouse Gas Emission Reduction Campaign = The amount of GHG reduced GHG (tonCO₂e)

Total amount of GHG reduced (tonCO₂e.) = 5.943-ton CO₂e

Equivalent to 0.96 hectares complete forest age 5 years absorbing CO₂ for 1 year or
Equivalent to 660 10-year-old trees, absorbing CO₂ for 1 year



During the "Plastic Rights" event this time, the data of greenhouse gas (GHG) emission reduction is also collected. The data collection is conducted in the form of Eco Event by Green Style under the Care the Bear Project: "Change the Climate Change" of the SET Social Impact, which emphasizes the importance of reducing greenhouse gases through 6 activities including

1. Traveling by public transports,
2. Reduce the use of paper and plastic,
3. Refrain from using foam,
4. Reduce the energy consumption of the electrical equipment
5. Promote the Recycle/Reuse decoration equipment
6. Take an appropriate amount of food to reduce food waste.

Summarizing all the amount of GHG that has been reduced in the Plastic Rights event through the form of Carbon Footprint which in total is 5.943 tons CO₂e

IRPC Cubic Academy

Since its establishment in 2015, the IRPC Cubic Academy was intended for social and governance activities. The academy has held five classes for 510 participants (425 of whom were IRPC employees, and 85 external interested participants). The results of the participants' satisfaction survey revealed an average satisfaction score of 4.85 (out of 5) or 97 percent. This year IRPC held the IRPC Cubic Academy's last class, which was a special class with upgraded contents, wider perspective of knowledge and understanding, as well as the use of advanced technology to enhance the accuracy and transparency of work system monitoring. There were 130 participants.

Sarn Palung Social Enterprise Company Ltd.

The Company together with the other companies in PTT Group established Sarn Palung Social Enterprise Company Ltd. Due to the PTT Group has many Corporate Social Responsibility (CSR) projects, therefore, the company is able to select and choose activities/ social projects that have potentials in being sustained and making profit, promote the employment rate or solving the local problems. In 2018, Sarn Palung Social Enterprise Company Ltd. has implemented a project of Cafe Amazon for the disadvantaged group (Café Amazon for Chance), a project to buy coffee bean from the community (Community Coffee Sourcing) and is in the process of implementing the nursery center project to take care of children in their early childhood (PTT Day Care).



Quality, Safety, Occupational Health and Environmental Management



Conducting its business with commitment to excellence with quality management and respect for a balance in socio-economy and the environment to promote sustainable growth consistent with international standards and guidelines, IRPC has established policies that supported such management for highest efficiency.

Quality, Security, Safety, Occupational Health, Environment and Energy Management (QSSHE)

IRPC and its subsidiaries are committed to conducting the petrochemical business and integrated refining through operational excellence in quality, security, safety, health, environment and effective energy management for the sustainability of the corporation. Therefore its management and employees will ensure the following.

1. Systematically manage by employing six codes, P-E-O-P-L-E, under the Operational Excellence Management System (OEMS) covering 12 elements and promote the use of quality management throughout the corporation

to increase productivity and deliver valuable products and services that meet the expectations of stakeholders throughout the supply chain.

2. Systematically plan and manage risks, establish control measures to reduce risks and demonstrate social responsibility for security, safety, occupational health, environmental and energy management related to the operations along the supply chain in all organizational processes, including change management, due diligence, project engineering, maintenance, research and development, organizational potential development, partnership management, innovation management, products and services acquisition, to prevent incidents, protect lives, properties, information and business continuity.



Measuring noise pollution around the IRPC operating zone.

3. Comply with laws, regulations, covenants and requirements, including standards and requirements related to quality, security, safety, occupational health, the environment and energy management along the supply chain, including the requirements for environmental quality control in products for customers.
4. Develop plans, establish goals and implement the plans to control risks and reduce the impacts posted by significant issues that may arise from operations under international standards and good practices in the petrochemical and refining industry by using 7Rs principles, including engineering control, water resource management, pollution control, waste management, greenhouse gas emissions, energy conservation and biodiversity, partnership and collaboration, green chemical management, human and labor rights and process safety management (PSM). IRPC is to ensure monitoring, review and audit of these processes for continual improvement.
5. Care for and promote health, occupational health and work environment for the workforce and communities.

IRPC has designated management at all levels to be responsible for the operations under a policy to achieve the objectives and goals. The management are to encourage all employees to participate in implementing the policy, be role models and provide adequate resources to maintain and further improve the management system of quality, security, safety, occupational health, environment and energy management in all processes and communicate the results to all stakeholders.



Quality Management

IRPC implements the Operational Excellence Management System (OEMS) as its core management system in the corporation. This system was developed together within PTT Group, consisting of 12 core operational frameworks and the components for the evaluation of effectiveness in all four aspects: content, deployment, conformance and performance.

In addition, IRPC applies quality improvement tools, including the 5S, QCC and Kaizen to increase productivity and operational efficiency of machine maintenance under Total Productive Maintenance and Management (TPM) by engaging employees at all levels, integrating TPM with OEMS throughout the value chain management, including paying attention to products, quality, safety, health, and the environment to responsively meet stakeholders' satisfaction.



The president visited such plant where operating machines are kept maintenance under TPM



Safety Management

IRPC values safety in every process and continually implements personal safety, process safety and transport safety for both employees and contractors by forging safety awareness under the i-CAREs safety culture: “Forging Safety Awareness by Working and Caring for Each Other” to move toward becoming a safe working organization, zero accident and zero emergency incidents as well as implementing the ISO 45001 Occupational Health and Safety Management System standard throughout the corporation. This year IRPC implemented safety programs and activities as follows.

Personal Safety

- 1 Management at all levels valued safety by walking and inspecting the work area through the “Safety Walk & Talk” activity. This critical factor promotes sustainable safety culture from the management to employees and contractors.
- 2 “Safety Excellence Award” program is an award given to any work team that demonstrated outstanding safety performance though active participation of employees to implement different strategies promoting safe behavior in all aspects. In addition, this program promoted safety leadership and building teamwork with participation of all levels and caring among team members for an accident-free workplace.
- 3 Apart from caring for employees’ health and readiness to work, IRPC extended its caring to outsourced employees and contractors through discussion about their readiness before starting work and randomly measuring alcohol before work. This was to prevent accidents during work due to unfit conditions (both physical and mental).
- 4 IRPC has been progressing its Goal Zero project to Step 4 at 599 days, with the longest period of 135 days without any accident.



Safety Excellence project workshop



ISPS code (INEX'18 IRPC-Naval Exercise 2018)



- 5 IRPC organized the “99 Days Strong Zero Incident” event to honor achievements and grant awards to departments without work-related incident and emergency incident. IRPC also granted awards to contractors with no accident in the Goal Zero Step 1 – 3 Project. In addition, the event included a singing contest under the theme of “IRPC Safety First” and “IRPC Safe Driving” as well as safe driving training and promotional booths of safety contractors.
- 6 IRPC stipulated policy requirements, objectives and goals to all contractors so that the overall workforce, both employees and contractors, share a common responsibility to create zero accident and zero emergency operations and ensure the contractor workforce are fit and healthy for work and go back home safely.
- 7 IRPC continued implementing the safe driving project for employees, contractors, youths and community members within IRPC’s premises and surrounding areas so that they recognized the need for driving safely.



- 8 To instill safety culture, IRPC initiated Behavior Safety Management (BMS), derived from Behavior-Based Safety (BBS) to encourage the workforce to demonstrate the safety culture among themselves through a sense of caring, complimenting safe behavior and sharing advice.

Truly believing that safety is the first priority, active participation by the management, employees, outsourced staff and contractors in all projects, our safety performance in 2018 was improved from last year. The Total Recordable Incident Rate is 0.39 cases per million-man hours, which is better than target of 0.47 cases per million-man hours.

Process Safety

IRPC dearly values Process Safety Management (PSM), which concerns management of safety and prevention of incidents in processes. The implementation of PSM is under the umbrella of IRPC’s Operational Excellence Management System (OEMS) and complies with U.S. OSHA (U.S. Occupational Health and Safety Administration) and Center for Chemical Process Safety (CCPS) standards. PSM maintains operational standards and maximizes safety efficiency in the processes. Management at all levels have demonstrated their leadership in safety through ongoing communication of PSM. For example, the President and the senior management team visited Rayong plants and oil depots throughout the year to boost the morale of workforce. In addition, IRPC developed IT programs to facilitate PSM implementation, including E-Contractor, E-Permit, E- MoC and IdMS (Incident Management

System). They have become the center for contractor database management, work permits, change management and incident management. Defining performance indicators for safety in processes by using a participative approach among various teams generated more confidence among the workforce in process safety.



Occupational Health Management

IRPC is committed to providing a healthy workplace for employees, in particular those who work in processes with potential direct and indirect exposure to chemicals. IRPC implemented proactive health care and protection by conducting industrial hygiene surveys in the workplace to identify heat, light, sound and chemical exposure under applicable laws. Data provided information to improve the safe work environment and assess health risks (Health Risk Assessment) among employees to prevent occupational diseases. An annual medical examination plan was also implemented for employees as well as risk-based checkups. An E-Health Book is developed, enabling employees to track the results of personal examination, answer health interests and review health trends and databases in accordance with laws.



Environmental Management

IRPC conducts its business with social responsibility. It is committed to sustainable environmental management and continual improvement and development more effective environmental management system to bolster confidence among stakeholders. IRPC's operations give serious considerations to the potential impacts on the environment and surrounding communities. Corporate governance is functioning to ensure compliance with relevant regulations by employing credited guidelines and management systems. IRPC is certified with ISO 9001 Quality Management System standard, ISO 45001 Occupational Health and Safety Management System standard and ISO 14001 Environmental Management System standard.

Using the Integrated Management System (IMS) as a framework for environmental management efforts resulted in more efficient resource management and more process-oriented environmental management. In addition to environmental quality monitoring both inside and outside IRPC premises, environmental performance data are verified by external parties every year. This year the performance of IRPC's sustainable environmental management was a factor that enabled IRPC to achieve its goals to become the world's leading oil and gas refinery and marketing industry leader in 2018 and remained a member of DJSI for five years running.

Eco-Industrial Zone

IRPC recognizes the importance of developing an eco-industrial zone, a development model for industries to strengthen their environmental quality management, upgrade the industrial zone and mutually support surrounding communities.

IRPC's sustainability framework created a balance in the economy, society and the environment. Its award-winning eco-industry (Eco-Industrial Zone) Level 5 featured outstanding implementation efforts through the likes of modifications of fuel ratios by increasing the proportions of gas fuels and reduce the use of fuel oil, installing high-efficiency burners to reduce emissions of oxides of nitrogen (NOx), limiting the amounts of sulfur in fuel oil at 0.9% to the control of emissions of oxides of sulfur (SOx), installing of a barrier (wind break) at the coal storage yard, installing of a vapor recovery unit (VRU), regenerative thermal oxidizer (RTO), scrubber and bottom loading to reduce volatile organic compounds (VOCs) emission when





transferring oil from tank to truck without any spill. IRPC has also assessed the impacts on biodiversity. All findings are conclusive that there are no serious consequences for employees and surrounding communities. The community satisfaction evaluation also showed an increasing positive trend, with the energy conservation program, and resulted in IRPC's significant reduction of energy consumption.

• Greenhouse Gas Emission Reduction

At present the adversary effects of climate change are increasing annually in both degree of damage and frequency. The United Nations and the world community established a clear framework to control the increase in the average temperature of the world to below 2 degrees Celsius from the pre-industrial era. At the 21th Conference of the United Nations Parties to the Climate Change (COP 21), Thailand announced her commitment to reduce greenhouse gases by 20 – 25% by 2030.

IRPC recognized the importance of reducing greenhouse gas emissions by using energy efficiently, conserving natural resources and moving toward

becoming a low-carbon society. It has also established Life Cycle Inventory (LCI), a product life cycle database to study the potential for reducing greenhouse gas emissions by 12.34% by 2020 from 2012.

• Managing Volatile Organic Compounds (VOCs) in the Industrial Zone

IRPC has developed a plan to continually improve and control VOCs emissions and releases by improving the efficiency of its processes, implementing control emission at sources and reducing wasteful emission. The company conducted regular air monitoring to ensure no impact on the environment and communities. Apart from installing air quality monitoring stations, IRPC employs state-of-the-art technology to continuously detect VOCs by camera and online automatic monitoring. In addition, it implemented environmentally friendly maintenance (green turnaround) as a guideline to reduce environmental impacts in all aspects, including water, air and waste, to monitor and control regular operation and during maintenance periods.



This year IRPC developed and implemented Leak Detection and Repair Program (LDAR Program) to detect and repair leaks of volatile organic compounds. A project was completed to eliminate odor from the central wastewater treatment system. Efforts and THB 30 million funding were made to install permanent enclosure with piping to pump odor to burn at the combustion chambers of boilers. IRPC continued planning to reduce VOCs released from the internal tank shell by using dome roof and high-efficiency roof seal at the tank bottom in 2019. In addition, IRPC is planning to improve the vapor venting system of the chemical storage tank in the additional processes that contains VOCs.

• Waste Management

IRPC has implemented a campaign to forge awareness among employees regarding preliminary waste segregation. To leverage the benefit of this campaign, a program called “Think before throwing” was initiated so that employees could participate in recyclable waste segregation in various locations around the premises. Recyclable waste, for instance, plastic bottles, glass bottles, and soda cans, were sold and the resulting fund was used to support CSR activities, such as supporting lunch for kindergarten schools nearby and educational activities to provide knowledge on primary waste sorting to youths to cultivate awareness so that they may recognize the importance of waste management for their future habitual practices.

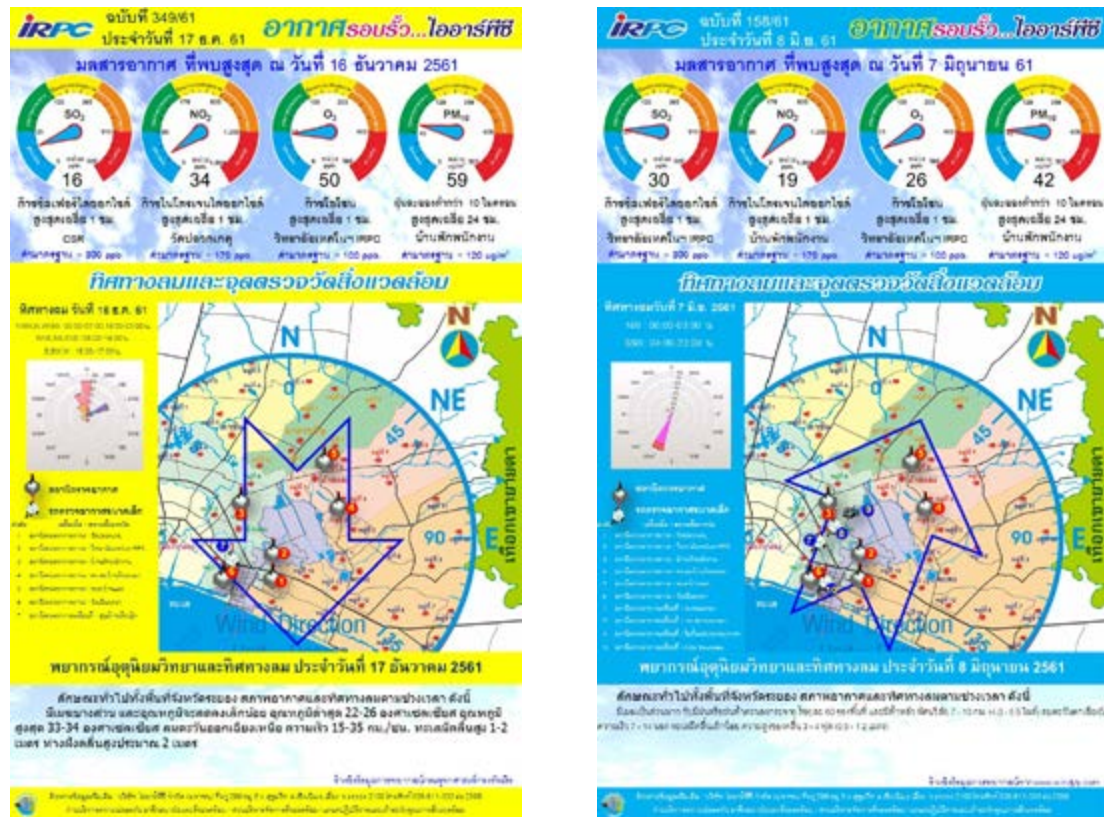
• Zero Waste To Landfill

IRPC recognizes that potential significant impacts on the environment concern soil and groundwater contamination produced by inappropriate waste disposal at landfill. Therefore, IRPC has continued reducing the quantity of industrial waste to be disposed of by landfill, such as shipping waste for cement kilns to use as fuel or reusing the material as a part of the raw material for cement production. Efforts also included using more environmentally friendly disposal methods. All efforts resulted in a reduction of waste disposed at landfill of less than 0.4% of the total waste generated. IRPC has established a goal to reduce waste disposal to landfill to zero by 2020.

• Air Quality Control and Surveillance

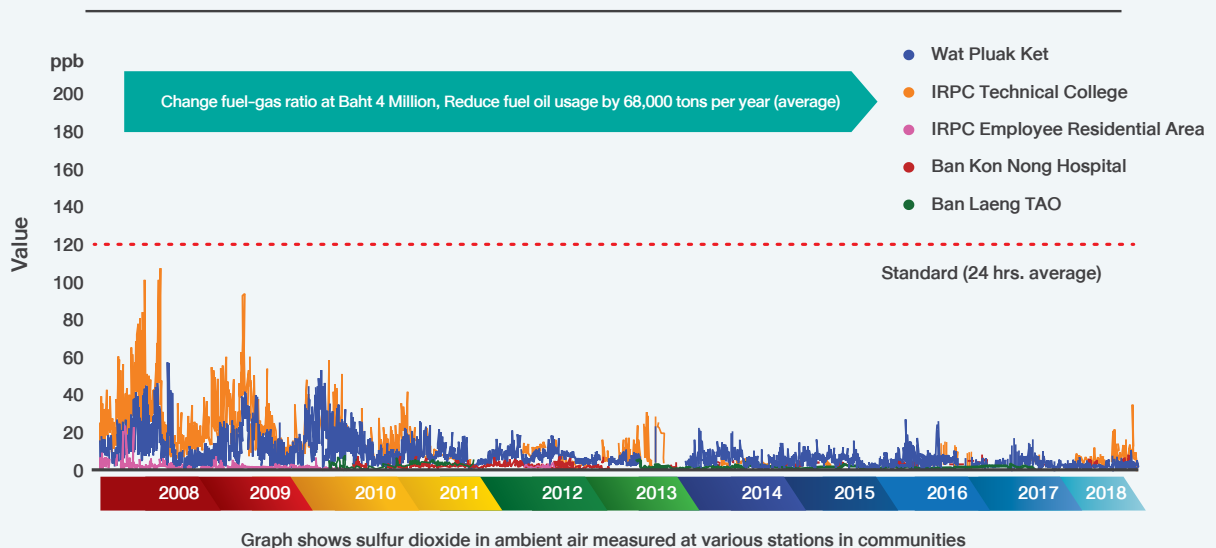
IRPC manages to prevent and control potential environmental issues at sources. It established a committee War Room to prevent and resolve environmental complaints and claims. The committee is responsible for following up issues to closure and provide a budget to reduce impacts. As a result, community complaint statistics have been reduced continuously every year. In addition, IRPC has established six air monitoring stations in community areas around the premises to monitor air quality 24 hours a day. Online monitoring data are displayed publicly on screen at over 15 locations around IRPC premises. Air Quality Measurement Daily Reports (AQMs Daily Reports) are also shared via social network channels, such as LINE and Facebook.

Air Quality Measurement Daily Reports around the IRPC operating zone shared via social network channels: LINE and Facebook.



IRPC Combustion Emission Quality Improvement Project

Graph shows decreasing sulfur dioxide in ambient air measure at air quality measurement stations located in communities.



Source: IRPC's Environmental Management Division

Thanks to efficient management in quality, safety, occupational health and environment, IRPC was honored and granted many awards (as seen on page 14).



Sustainable Management

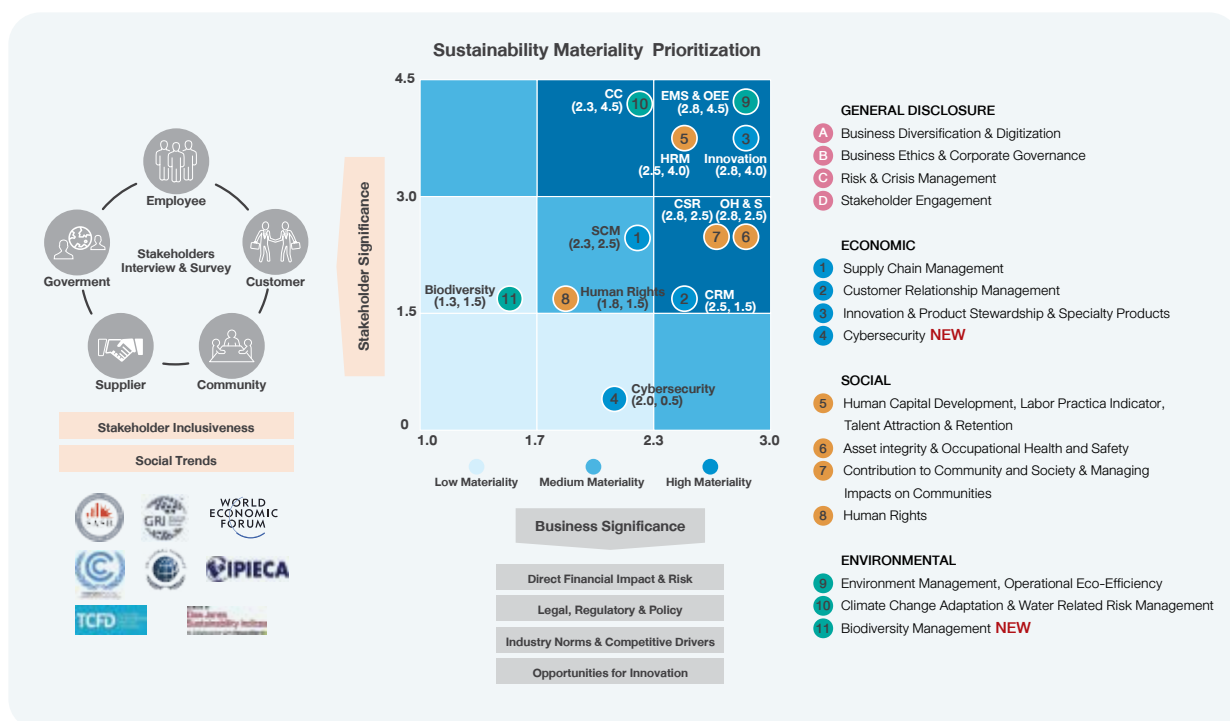
Sustainable Management Structure

IRPC installed a Sustainable Management Office under a direct line of command to the President. The office is tasked to manage the corporate sustainability strategies, including matters related to the economy, society, environment and corporate governance. The office is governed by the IRPC Group Sustainable Business Operation Committee comprising top Executive as members and an Executive Vice President as Chairman. The committee defined a policy and strategies for corporate sustainability, reviews and comments on work plans toward sustainability, and seeks approval from the Management Committee and eventually from the Board, and then supervises, monitors and tracks, supports and promotes all activities to ensure success earlier defined in the policy and strategies. All of these are geared toward organizational excellence and sustainability, supporting IRPC's vision of becoming a "Leading Integrated Petrochemical Complex in Asia by 2020".

Stakeholders' Engagement

IRPC fully realizes the higher expectations of stakeholders on its roles and responsibilities toward future business security and sustainability, so it arranges activities to listen to and obtain opinions from stakeholders through questionnaires and interviews. Various and diversified perspectives, expectations and concerns from stakeholders are crucial for IRPC to turn into success, incorporated with rapid changes of globalization, information and communication technology and digital transactions, as well as climate change. With modern industrial technology including real-time monitoring of work processes and cost control, every organization must adopt these technologies and adapt to all changes to be competitive in the market. Continuous stakeholders' engagement activities are therefore essential for IRPC to adjust its strategic plans to cope with all changes. Perspectives and direct opinions from stakeholders form critical input to the development of corporate strategies and the assessment of sustainability through the Materiality Assessment process.

Materiality Assessment for Sustainable Development



Impact Assessment on Human Rights

IRPC is fully committed to respecting human rights and has defined the principles of human rights in the corporate governance policy and handbook in compliance with applicable laws and its articles of association. All personnel of IRPC, from the Board to executives and employees, including those in Joint Ventures and business partners, contractors and customers, must adhere to the human rights policy, which was enforced in 2017 under the labor law and recognition of human rights.

IRPC fully respects the rights of workers, women, children and the dignity of human beings, including freedom and equality of everyone who, under Thai and international laws, are granted the rights to be Protected, Respected and Remedied from violations of human rights borne by activities of the operations throughout the supply chain. This principle also corresponds to the concept of Care, Share, Respect, which IRPC fully observes as a guiding principle.

Following the 2017 performance review of all units in the IRPC Industrial Zone on impacts on human rights, the same performance review process was extended to five oil depots in 2018 including Ayutthaya Oil Depot, Phra Pradaeng Oil Depot, Rayong Oil Depot, Chumphon Oil Depot, and Mae Klong Oil Depot. Subjects under the review included all six aspects of the entire value chain: Rights of Workers, Community Rights, Supply Chain, Security and Safety, Environment and Consumer Rights. This full-spectrum performance review was designed to ensure no ignorance of any impact on human rights and assure full confidence among all stakeholders.

SD Academy Projects

To promote awareness of business sustainability and turn the sustainability concept into the reality of work efficiency to move IRPC toward organizational excellence and sustainability, IRPC has designed and put in place 6 training programs, run as workshops. Trained personnel also become the role models for other employees. The sustainability training for top executives including division managers and above was completed in 2016; for section managers and departmental managers and equivalent and staff directly responsible for sustainable development, in 2017. The same workshops were extended to

business units in Rayong in 2018. Brainstorming and participation of employees directly related to the development of corporate sustainability and business goals are very fruitful and can be transformed into activities and plans.

Eco Industrial Zone (EIZ)

The objectives of the EIZ Project and Eco Factory are as follows:

1. To urge management practices toward Eco Factory and thus advance to an Eco Industrial Zone (EIZ) and become a pilot for the Department of Industrial Works on model development of eco industrial zones.
2. To promote development of networking among factory operators under the symbiosis model of reliance and resource sharing, leading to the 3Rs of resource utilization, the circular economy and higher business returns.
3. To widen opportunities for business development and growth of the IRPC Eco Industrial Zone (IRPC EIZ) and surrounding communities through strengthening of social enterprise activities, sharing with the surrounding societies and stakeholders, leading to higher economic values, increasing income and a better quality of life.

The Eco Industrial Zone is a pioneering model for sustainability involving three parties forming as a core namely factories, environment and communities. With the best-in-class environmental management and sharing management with surrounding communities, Eco Factory have been integrated into the IRPC EIZ. Higher efficiency on utilization of raw materials, feedstock and energy under systematic planning and operations, higher efficiency of production through networking and resource sharing of all Eco Factory within the EIZ, and lower impacts on the environment through the reduction of production waste, form the major components of the manufacturing sector of EIZ, leading to IRPC's cost reduction, increasing profits and boosting competitiveness. Full cooperation with communities helps improve the quality of life and the economy of the surroundings, leading to better living and growth of the surrounding communities simultaneously with business growth of factories and EIZ in a sustainable way. Clearly in place is integration and advancement of the development of Eco Industrial Towns between all parties and government authorities.

Projects and Work Processes under the 2018 Eco Industrial Zone

1. Project to minimize resource utilization and optimize efficiency of energy consumption, reduce waste and minimize impacts on the environment from production processes.
2. Promotion of knowhow and understanding of Eco Factory and EIZ, specific to performance indicators.
3. Preparation, identification and collection of operating performances related to performance indicators for Eco Factory and EIZ.
4. Preparation of organizational self-assessment.
5. Program to conduct Pre-Assessment by the Department of Industrial Works.
6. Program to conduct Post-Assessment by an inspection committee from the Federation of Thai Industries (FTI) for the certification and awarding of ECO Factory and Eco Industrial Zone/ Park.

Certification for IRPC on Eco Industrial Zone Level 5 and Top 25 Eco Factory

IRPC was certified as an Eco Industrial Zone (EIZ) by all assessments on 32 indicators in 20 aspects of 5 dimensions. The assessment was made by the inspection committee appointed by FTI on February 22, 2018, and later endorsed and approved by the technical review committee of the Eco Industrial Zone Development as IRPC Eco Industrial Zone Level 5 (Happiness), the highest level. The plaque award and certification were granted to IRPC on May 3, 2018.

In addition, 25 factories operated by IRPC were certified as Eco Factory. This illustrated the commitment of IRPC to continually upgrading its facilities: from four certificates in 2015 to 11 more certificates in 2016, to 9 more certificates in 2017 and 5 more certificates in 2018. In 2018, 1 certificate was for a new factory, while the remaining 5 were re-certified.

The benefits of IRPC's Eco Factory are realized by both the factory and its surrounding communities, including a better environment resulting from the reduction of resource utilization, waste, pollutants and greenhouse gas emission, and use of chemicals. All these accompany higher work efficiency on energy utilization and energy conservation.

Development Framework of Eco Factory in 5 dimensions and 20 aspects





IRPC's 25 factories are Eco Factory-certified.



Certification for IRPC on Eco Industrial Zone Level 5 (Happiness)

From the perspective of surrounding communities and the public, Eco Factory provides more business opportunities for locals, more job opportunities, better jobs, and more educational opportunities. Because of less impacts on the environment and communities from an Eco Factory, a higher quality of life and better health of residents are proven. Besides, all operators in the area have developed awareness of the operating concept of sustainability and become a pride of the communities.

From Economic Perspectives, cost reduction and higher profitability derived from the 3Rs policy and higher consumption efficiency of raw materials and energy consumption are key results. Higher economic activities are possible for byproducts and waste. Higher work efficiency becomes inevitable following better health and happier work. Moreover, operators in the zone enjoy extending their cooperation and assistance to nearby organizations toward sustainable development and better images of their corporations.

DJSI Industry Leader

IRPC has been announced a Dow Jones Sustainability Indices (DJSI) Industry Leaders in 2018 and a member for 5 years in a row, with the highest assessment score in the Global Oil and Gas Refining and Marketing Industry. SAM later awarded IRPC a Gold Class Sustainability Award 2019 and published this in the Sustainability Yearbook 2019. The award and publication reflected transparent assessment of IRPC's performance on sustainability including all three aspects: Economic, Social, and Environment.

SAM's assessment process was conducted by world-standard experts on sustainable investment. Numerous sets of criteria were evaluated and assessed including external perspectives of the Oil and Gas Refining and Marketing Industry with priority focuses on work safety, occupational health, and good environmental management, and continuous improvement of proven performance. Other priority issues were transparency and disclosure of data, anti-corruption practices, good corporate governance, respect for human rights, risk management of the entire supply chain, and

value creation to society and communities through the workforce. Summaries of the assessment can be described as follows:

- Economic aspect:

Adding value to IRPC through Everest and GDP strategies, increasing assurance for investors, integration of procurement and Supply Chain Management, and Implementing Supplier Code of Conduct to supervise suppliers on managing feedstock. This code of conduct covers all issues, including the environment, society, and human rights. IRPC has launched a tax strategy designed to fully comply with tax regulations, eliminate tax avoidance and ensure fair tax payment, thus bolstering credibility for the company.

- Environmental aspect:

Continuously minimizing emission of pollutants and increasing efficiency of energy consumption and managing the environment and engaging surrounding communities. IRPC's 25 factories are Eco Factory-certified. IRPC plans to have all of its operating factories certified by 2020.

- Social aspect:

Using detailed assessment and proactive measures on Human Rights Protection to illustrate no human rights violation with all stakeholders in all sectors of IRPC's operations. Employee participation is encouraged with a focus on work happiness and creation of awareness of the work safety culture. Continuous transforming the organization to become agile through IRPC DNA transformation and development of organizational health jointly with the participation of external communities.

IRPC organized "Sustainability Leader is in Your Power" on September 26, 2018, to celebrate the success with all employees who jointly drove the organization. The celebration focused on participation of all personnel through various exchange activities under the DJSI assessment framework for each business unit. IRPC is fully confident of achieving all challenges including higher standards of assessment, with support by all employees, who are the main drivers of all improvement and development of work processes.





All these World-Class proofs of success are deliverables of dedication of all employees throughout the corporation, and support by all stakeholders who are truly confident in IRPC's business operations. Through the years, IRPC has clearly demonstrated its full commitment, not only to increasing its business competitiveness, but also to focusing on responding to the needs defined by stakeholders. The DJSI Industry Leader Award is a great pride for IRPC and a warranty to international investors for IRPC's sustainable growth.

Total Quality Class Award

To strive for organizational excellence at The Global Standard with growth and competitiveness in operations and management for local and international competitive markets, IRPC has adopted performance rating criteria of the Thailand Quality Award (TQA) as a guide. The TQA is considered a World-Class Award equivalent to the Baldrige National Quality Award (BNQA) of North America, The Original Model of Quality Awards adopted by countries worldwide. The TQA provides a framework for IRPC to review and assess performances for ongoing work process improvements, and a platform for internal learning for higher effectiveness as well as a self-assessment process.

IRPC introduced and deployed the TQA standard in all areas of its operations, beginning in 2016, covering and integrating the entire value chain from organizational governance, strategic planning, customer focus, personnel management, and improvement of all work processes. The expected outcomes are continuously high or higher effectiveness competitiveness than business rivals, widely affecting all facets of the business from managing the organization, customers, employees, operations, financial, marketing to community engagement. Despite a target to achieve the TQC (Thailand Quality Class) Award by 2019, IRPC successfully achieved the award a year earlier.

Following the submission of the assessment report for the Thailand Quality Award (TQA) in 2018, IRPC was selected as one of the 13 state, private and state-owned enterprises for the 2018 Thailand Quality Class Award. Under the award, IRPC is committed to providing best practices to share with other organizations for further applications. This outstanding award brought IRPC immense pride and provided assurance to stakeholders that IRPC commands not only an organizational excellence, but also an organization dedicated to the sharing of knowledge and management with stakeholders to develop competitiveness for IRPC and for other domestic industries.



Corporate Governance Report of Thai Listed Companies (CGR) 2018

No.	Criteria	Information Sources
Rights of Shareholders		
A.1	Does the Company offer other ownership rights beyond voting? IRPC: Yes. The rights to propose meeting agenda in advance of the meeting, nominate candidates for directorship, appoint or dismiss directors, consider the remuneration of directors and the auditor, consider the profit split/ dividend, access to sufficient, up-to-date and complete information, and express opinions	● Annual Report 2018 page 128
A.2	Is the decision on all forms of director remuneration approved by the shareholders annually? IRPC: Yes (The Board considered all forms of directors' remuneration including salaries, meeting allowances and bonuses for approval by shareholders meeting)	Minutes of the Annual General Meeting of Shareholders (AGM) specifies that: ● No other benefits ○ Other benefits (please specify.....) ● Minutes of the 2018 AGM page 22 – 24 ● Annual Report 2018 page 98 – 99
A.3	In presenting the Board remuneration for shareholders' approval, did the policy and basis for each director's remuneration including the pay per position were presented? IRPC: Yes	○ Only the total remuneration amount for the entire Board was disclosed. ● The presentation included policy, details on payment method for director per position, such as salary, and/ or meeting allowance per attendance, and/ or bonuses/ annual pension. The remuneration specified was per position. ● Notice of the 2018 AGM page 7 – 9 ● Minutes of the 2018 AGM page 22 – 24 ● Annual Report 2018 page 128
A.4	Does the Company allow shareholders to elect Board members individually? IRPC: Yes	● The voting results of individual director were disclosed. ○ The voting results of the entire Board were disclosed. ● Minutes of the 2018 AGM page 24 – 26 ● Annual Report 2018 page 130

No.	Criteria	Information Sources
A.5	Does the Company disclose in the minutes that it has appointed scrutineers/ inspectors to count and/ or validate the votes at the AGM? IRPC: Yes	○ No ○ Observer ○ Witness ● Scrutineers ○ Other (please specify) ● Minutes of the 2018 AGM page 2 ● Annual Report 2018 page 129
A.6	Is there any opportunity provided to shareholders to propose agenda items, or submit questions before the AGM? IRPC: Yes	● The rights to propose meeting agenda in advance of the AGM ● The rights to submit questions on corporate issues in advance of the AGM ● SET Website: Please specify the web link to the mentioned information ● Company Website: Please specify the web link to the mentioned information ● Annual Report 2018 page 128
A.7	Does the Company publicly disclose a policy to encourage and facilitate the Company's shareholders, as well as institutional investors, to attend the AGM? IRPC: Yes	● Annual Report 2018 page 129 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/ir_home_th.php

Quality of the notice to call annual general meeting of shareholders (AGM)

A.8	Does the Company clearly separate the meeting agenda? IRPC: Yes	● The Board's resolutions were disclosed on SET Website. ● Notice of the 2018 AGM page 1 – 12 ● Annual Report 2018 page 128
A.9	On appointment of directors, are the shareholders provided with the candidate's name and profile? IRPC: Yes	● 1. Name-surname ● 2. Age ● 3. Education/ Work experience ● 4. Number of Board positions in listed and non-listed companies – shown on <u>separate lists</u> ● 5. Nomination criteria and process ● 6. Types of directors proposed for approval, i.e. director or independent director ● 7. Information on Board meeting attendance in the past year ● 8. DD/ MM/ YYYY of first appointment ● Notice of the 2018 AGM page 9 – 11, 18 – 34 ● Annual Report 2018 page 128
A.10	On appointment of the auditor, are the shareholders provided with the name of the auditor, auditing firm, profile or relevant experience, and auditing fees to support their consideration? IRPC: Yes	● Name and firm of the Auditor ● The Auditor's experience, ability and independence ● Auditor's fees ● Notice of the 2018 AGM page 4 – 5 ● Annual Report 2018 page 128

No.	Criteria	Information Sources
A.11	On dividend payment, are Company's dividend policy, dividend amount, and explanation and information disclosed to support shareholders' consideration? IRPC: Yes	● Dividend policy ● Dividend payment ○ No dividend payment ● Supporting explanation and information ○ Accumulated loss ● Dividend amount proposed ● Other (please specify: reason/ tax credit restrictions) ● Notice of the 2018 AGM page 2 – 3 ● Annual Report 2018 page 128
A.12	Does the notice of the meeting specify the objectives and reason for each agenda item proposed? IRPC: Yes	● Notice of the 2018 AGM page 2 – 12 ● Annual Report 2018 page 128
A.13	Does the notice of the meeting include directors' comments and opinion for each agenda item? IRPC: Yes	● Notice of the 2018 AGM page 2 – 12 ● Annual Report 2018 page 128

Quality of the minutes of the annual general meeting of shareholders

A.14	Does the voting method and vote counting system declared and recorded? IRPC: Yes	● The voting method and vote counting system were declared before the meeting began. ● Voting ballots were used. ● Minutes of the 2018 AGM page 3 ● Annual Report 2018 page 129
A.15	Do the AGM minutes record that there was an opportunity for shareholders to ask questions/ raise issues? Also, is there record of questions and answers? IRPC: Yes	○ Shareholders had the opportunity to ask questions/ raise issues, but none did. ● Questions and answers were recorded. ● Minutes of the 2018 AGM page 11 – 27 ● Annual Report 2018 page 130
A.16	Do the AGM minutes clearly record the meeting resolutions with voting results for each agenda item, including "for", "against" and "abstain" vote tallies? IRPC: Yes	● The meeting resolutions were clearly recorded. ● The resolution specifies "for", "against" and "abstain" tallies and void ballot of each agenda were recorded. ● Minutes of the 2018 AGM page 3 – 27 ● Annual Report 2018 page 130
A.17	Is a name list of Board members attending the AGM disclosed in the AGM minutes? IRPC: Yes	● Minutes of the 2018 AGM page 1 ● Annual Report 2018 page 129
A.18	Does the Company make publicly available by the next working day, the results of the votes taken during the AGM for all resolutions? IRPC: The results were made public on the same day after the meeting	● SET Website: Please specify the web link to the mentioned information ● Company Website: Please specify the web link to the mentioned information ● Annual Report 2018 page 130

No.	Criteria	Information Sources
A.19	Did the Chairman of the Board attend the AGM? IRPC: Yes (Mr. Tevin Vongvanich)	- Minutes of the 2018 AGM page 1 - Annual Report 2018 page 129
A.20	Did the CEO/ President attend the AGM? IRPC: Yes (Mr. Sukrit Surabotsopon)	- Minutes of the 2018 AGM page 1 - Annual Report 2018 page 129
A.21	Did the Chairman of the Audit Committee attend the AGM? IRPC: Yes (Mr. Somnuk Bomrungsalee)	- Minutes of the 2018 AGM page 1 - Annual Report 2018 page 129
A.22	Did the Chairman of the Remuneration Committee attend the AGM? IRPC: Yes (Mr. Woothisarn Tanchai)	- Minutes of the 2018 AGM page 1 - Annual Report 2018 page 129
A.23	Did the Chairman of the Nomination Committee attend the AGM? IRPC: Yes (Mr. Woothisarn Tanchai)	- Minutes of the 2018 AGM page 1 - Annual Report 201 page 129
A.24	Did the Company organize the most recent AGM in an easily accessible location? IRPC: Yes	- Notice of the 2018 AGM page 16 – 17 - Minutes of the 2018 AGM page 1 - Annual Report 2018 page 129

Does the Company's shareholder structure indicate any mechanism on anti-takeover defenses?

A.25	Is cross-shareholding apparent? IRPC: No	Annual Report 2018 page 134
A.26	Is pyramid holding apparent? IRPC: No	Annual Report 2018 page 134
A.27	Do Board members hold more than 25% of the outstanding shares? (Bonus) IRPC: No	- Annual Report 2018 page 103 – 104, 131 - Form 56-1
A.28	What is the proportion of outstanding shares that are considered "free float"? IRPC: 51.89% (as of February 28, 2018)	The proportion of free float as of 2018 XM book closing date: - Equal to or over 40% ☐ Between 15% – 39% - Less than 15 % ☐ - SET Website: Please specify the web link to the mentioned information https://www.set.or.th/set/companyholder.do?symbol=IRPC&ssoPageId=6&language=th&country=TH

No.	Criteria	Information Sources
A.29	Were there additional AGMs/ EGMs (agenda items) for shareholders' approval that were not included in the notice to call the meeting? (Penalty) IRPC: No additional item apart from those already specified was included in the notice to call the 2018 AGM.	○ Additional AGM/ EGM agenda items ● No additional AGM/ EGM agenda item ● Notice of the 2018 AGM page 1 – 12 consists of 9 agenda items: 1) 2 items for acknowledgment 2) 6 items for consideration 3) 11 items for other matters (if any). ● Minutes of the 2018 AGM page 1 – 27 ● Annual Report 2018 page 129
A.30	Did the Company fail or neglect to offer equal treatment for share repurchases to all shareholders? (Penalty) IRPC: No share repurchases	● Annual Report 2018 page 131
A.31	Is there evidence of barriers that prevent shareholders from communicating or consulting with other shareholders? (Penalty) IRPC: No	● Annual Report 2018 page 126 – 127
A.32	Did the Company fail to disclose the existence of shareholders' agreement of essential effect to other shareholders? (Penalty) IRPC: No	● Annual Report 2018 page 126 – 127
Equitable Treatment of Shareholders		
B.1	Does the Company offer one-share, one-vote? IRPC: Yes	● Annual Report 2018 page 131 ● Articles of Association- Article 34
B.2	Where the Company has more than one class of shares, does the Company publicize the voting rights attached to each class of shares? IRPC: No	● Common share only ○ Others (please specify) ● Annual Report 2018 page 131
B.3	Does the Company have any mechanism/ channel to allow minority shareholders to influence the nomination and appointment of director? IRPC: Yes	● Shareholders have the channel to nominate director in advance. ○ Cumulative voting was used. ● SET Website: Please specify the web link to the information ● Company Website: Please specify the web link to the information ● Annual Report 2018 page 128
B.4	Has the Company established a system to prevent the use of material inside information and inform all employees, management, and Board members of the system? IRPC: Yes	● Annual Report 2018 page 125 ● Form 56-1 ● CG Handbook page 72

No.	Criteria	Information Sources
B.5	When the Company is involved in connected transactions that require disclosure or shareholders' approval in compliance with SET's regulation, does the Company disclose the details and provide a rationale/ explanation BEFORE conducting such connected transactions? IRPC: Yes	● Annual Report 2018 page 159 – 162
B.6	Does the Company disclose that the connected transactions are conducted in such a way to ensure that they are fair, based on market prices and at arm's length? IRPC: Yes	● Annual Report 2018 page 159 – 162 ● Form 56-1
B.7	Does the Company have an economic-grouping structure with business interconnections which may lead to possible conflicts of interest? IRPC: IRPC and its affiliates conduct the same businesses as those of PTT Group. Connected transactions between IRPC and PTT were inevitable and considered normal business practices	● Annual Report 2018 page 159 – 162
B.8	Does the Company include in the notice of the AGM the proxy form to facilitate voting via proxy? IRPC: Yes	What kind of Proxy Forms did the Company send to the shareholders ● Proxy Form A ● Proxy Form B ○ Proxy Form C ○ None ● Notice of the 2018 AGM page 13 – 15 ● Annual Report 2018 page 129
B.9	Does the notice to shareholders clearly specify the documents required to give proxy? IRPC: Yes	○ Notice of the 2018 AGM page 13 – 15 ● Annual Report 2018 page 129
B.10	Is there any requirement to make it harder for a proxy appointment? IRPC: No	● Notice of the 2018 AGM page 13 – 15 ● Annual Report 2018 page 129
B.11	How many days in advance did the Company send out (by mail) the notice of general shareholder meetings? IRPC: 21 days	Mailed on March 13, 2018 Date of AGM: April 4, 2018 The notice was mailed 21 days in advance of AGM ● Annual Report 2018 page 128
B.12	Does the Company post the notice to call the shareholders' meeting at least 30 days in advance on its website? IRPC: Yes (30 days)	● SET Website for corporate news/ securities—Please specify the web link to the mentioned information Date the notice was posted on IRPC's website: March 2, 2018 Date of AGM: April 4, 2018 The notice was posted on website: 30 days in advance of AGM
B.13	Does the Company use cumulative voting in the election of Board members? (Bonus) IRPC: No	● One-share one-vote ○ Cumulative Voting ● Minutes of the 2018 AGM page 3 ● Annual Report 2018 page 131

No.	Criteria	Information Sources
B.14	Does the Company also send out the English translation of the notice of shareholders' meetings and supporting documents to foreign shareholders? (Bonus) IRPC: Yes	● Notice of the 2018 AGM ● Company Website ● Annual Report 2018 page 128
B.15	Are there any connected transactions that can be classified as financial assistance to non-subsidiary companies? (Penalty) IRPC: No	● Annual Report 2018 page 131
B.16	Have there been any cases of insider trading involving Company directors and/ or management in the past year? (Penalty) IRPC: No	● Annual Report 2018 page 131
B.17	Has there been any violation/ non-compliance case regarding connected transaction in the past year? (Penalty) IRPC: No	● Annual Report 2018 page 131
B.18	Has there been any violation/ non-compliance case regarding the buy and sale of Company's assets in the past year? (Penalty) IRPC: No	● Annual Report 2018 page 131
B.19	Does the Company have a policy requiring directors and key officers to notify the Board at least one day before they deal in the Company's shares? (Bonus) IRPC: Directors are required to notify the Board upon their trading	● CG Handbook page 77 ● Code of Conduct page 15 ● Annual Report 2018 page 131

Equitable Treatment of Shareholders

C.1	Does the Company have a separate corporate social responsibility (CSR) report? IRPC: Yes	● CSR report was prepared. ● CSR report was prepared in compliance with GRI framework with GRI Index disclosed. ● Form 56-1 ● Annual Report 2018 page 212 ● Sustainability Report 2018
C.2	Does the Board formulate a policy and guidelines on the workplace safety and sanitation together with a disclosure of the rates of accidental injury, lost days/ absenteeism, or occupational illness? IRPC: Yes	● A policy and guidelines on the workplace safety were set ○ The rates of accidental injury, lost days/ absenteeism, and occupational illness were disclosed. ● Annual Report 2018 page 231 ● Form 56-1 ● CG Handbook page 81 ● Code of Conduct page 7 ● Sustainability Report 2018
C.3	Does the Board define a policy and procedures for employees' compensation and welfare benefits? IRPC: Yes	● Annual Report 2018 page 124 – 125, 179 ● Form 56-1 ● CG Handbook page 61 ● Code of Conduct page 4 ● Sustainability Report 2018

No.	Criteria	Information Sources
C.4	Does the Board provide a provident fund for the employees? IRPC: Yes	● Annual Report 2018 page 124 ○ Financial Statement and Footnote
C.5	Does the Board formulate a policy and procedures for the employee development program to enhance their knowledge and potential with a disclosure of average training hours per year for the employees? IRPC: Yes	● A policy and procedures for the employees' development were set ● The average training hours per year per employee was disclosed. ● Annual Report 2018 page 179 ● Form 56-1 ● CG Handbook page 69 ● Code of Conduct page 4 ● Sustainability Report 2018
C.6	Does the Board formulate a policy preventing human rights violations? IRPC: Yes	● Annual Report 2018 page 121 – 122 ● Form 56-1 ● CG Handbook page 67 ● Code of Conduct page 4 ● Sustainability Report 2018 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/corporate_human_rights.php
C.7	Does the Board define a policy and procedures for the treatment of the customers? IRPC: Yes	● Annual Report 2018 page 125 ● Form 56-1 ● CG Handbook page 59 ● Code of Conduct page 24 ● Sustainability Report 2018 ● Company Website: Please specify the web link to the mentioned Information: http://www.irpc.co.th/th/cg_stakeholders.php
C.8	Does the Board have a policy and procedures for the treatment of the business competitors? IRPC: Yes	● Annual Report 2018 page 125 ● Form 56-1 ● CG Handbook page 60 ● Code of Conduct page 27 ● Sustainability Report 2018 ● Company Website: Please specify the web link to the mentioned Information: http://www.irpc.co.th/th/cg_stakeholders.php
C.9	Does the Board define a policy and procedures for the treatment of the business partners, particularly on business partner selection? IRPC: Yes	● The Company has a policy and procedures for the treatment of the business partners ● Procedures for partner selection are disclosed in detail. ● Annual Report 2018 page 125 ● Form 56-1 ● CG Handbook page 60 ● Code of Conduct page 27 ● Sustainability Report 2018 ● Company Website: Please specify the web link to the mentioned Information: http://www.irpc.co.th/th/pdf/CG/policy/Procurement-Manual.pdf

No.	Criteria	Information Sources
C.10	Does the Board formulate a policy and procedures for the treatment of the creditors, particularly on guarantee/collateral conditions, capital management, and default? IRPC: Yes	● The Company has a policy and procedures for the treatment of the creditors which include: ○ Guarantee terms and conditions ○ Capital management ● Default ● Annual Report 2018 page 125 ● Form 56-1 ● CG Handbook page 60 ● Code of Conduct page 27 ● Sustainability Report 2018
C.11	Does the Board set a policy and procedures preventing violations of the software copyright and intellectual property? IRPC: Yes	● Annual Report 2018 page 121 ● Form 56-1 ● CG Handbook page 79 ● Code of Conduct page 21 ● Sustainability Report 2018
C.12	Does the Board have a policy against corruption and a preventive measure for commercial bribery? IRPC: Yes	● Annual Report 2018 page 123 – 124 ● Form 56-1 ● CG Handbook page 36 – 46 ● Code of Conduct page 9 ● Sustainability Report 2018
C.13	Does the Company have a corruption risk assessment procedure in place? IRPC: Yes	● Annual Report 2018 page 123 – 124 ● Form 56-1 ● CG Handbook page 36 – 46 ● Code of Conduct page 9 ● Sustainability Report 2018
C.14	Does the Company have control guidelines to prevent and monitor corruption risk? IRPC: Yes	● Annual Report 2018 page 123 – 124 ● Form 56-1 ● CG Handbook page 36 – 46 ● Code of Conduct page 9 ● Sustainability Report 2018
C.15	Does the Company have the procedures to monitor and enforce the anti-corruption policy? IRPC: Yes	● Annual Report 2018 page 123 – 124 ● Form 56-1 ● CG Handbook page 36 – 46 ● Code of Conduct page 9 ● Sustainability Report 2018
C.16	Has the Company been educating its employees on its anti-corruption policy and procedures? IRPC: Yes (IRPC held its own training.)	● Annual Report 2018 page 123 – 124, 179 ● Form 56-1 ● CG Handbook page 36 – 46 ● Code of Conduct page 4 ● Sustainability Report 2018

No.	Criteria	Information Sources
C.17	Does the Board have a policy for the community services? IRPC: Yes	● Annual Report 2018 page 124 ● Form 56-1 ● CG Handbook page 62 ● Code of Conduct page 7 ● Sustainability Report 2018 ● Company Website: Please specify the web link to the mentioned Information http://www.irpc.co.th/th/sustainable.php
C.18	Does the Board organize social activities or take part in the community development program? IRPC: Yes	● Annual Report 2018 page 124 ● Form 56-1 ● CG Handbook page 62 ● Code of Conduct page 7 ● Sustainability Report 2018 ● Company Website: Please specify the web link to the mentioned Information http://www.irpc.co.th/th/sustainable.php
C.19	Does the Board have a business operations policy conforming to environmental standards? IRPC: Yes	○ ISO14000, 14001 ○ Green Label ○ Other (please specify) ● Annual Report 2018 page 124 ● Form 56-1 ● CG Handbook page 81 ● Code of Conduct page 7 ● Sustainability Report 2018 ● Company Website: Please specify the web link to the mentioned Information http://www.irpc.co.th/th/sustainable.php
C.20	Does the Board encourage the utilization of the resources efficiently? IRPC: Yes	● Annual Report 2018 page 125 ● Form 56-1 ● CG Handbook page 83 ● Code of Conduct page 7 ● Sustainability Report 2018 ● Company Website: Please specify the web link to the mentioned Information http://www.irpc.co.th/th/cg_control.php
C.21	Does the Board have a training program to educate the employees about the environmental issues? IRPC: Yes	● Annual Report 2018 page 228 – 229 ● Form 56-1 ● CG Handbook page 69 ● Code of Conduct page 7 ● Sustainability Report 2018 ● Company Website: Please specify the web link to the mentioned Information http://www.irpc.co.th/th/sustainable.php
C.22	Does the Board provide a direct channel for stakeholders to communicate/complaint any concerns to the Board? IRPC: Yes	● Annual Report 2018 page 124 ● Form 56-1 ● CG Handbook page 45 ● Code of Conduct page 18 ● Sustainability Report 2018

No.	Criteria	Information Sources
C.23	Does the Company have procedures for handling complaints by employees concerning illegal or unethical behavior? IRPC: Yes	● Annual Report 2018 page 125 ● Form 56-1 ● CG Handbook page 45 ● Sustainability Report 2018
C.24	Does the Company have a policy or procedures to protect an employee/ person who reveals illegal/ unethical behavior from retaliation? IRPC: Yes	● Annual Report 2018 page 125 ● Form 56-1 ● CG Handbook page 46 ● Sustainability Report 2018
C.25	Does the Company provide clear contact details which stakeholders can use to voice their concerns and/ or complaints for possible violation of their rights? IRPC: Yes	● Annual Report 2018 page 125 ● Form 56-1 ● CG Handbook page 45 ● Sustainability Report 2018 ● Company Website: Please specify the web link to the mentioned Information http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf
C.26	Does the Company have a reward/ compensation policy that accounts for the performance of the Company in both short-term and long-term financial measures? IRPC: Yes	○ Balanced Scorecard ○ ESOP ○ EJIP ● Other (please specify) ● Annual Report 2018 page 124 ● Form 56-1 ● CG Handbook page 70 ● Code of Conduct page 4 ● Sustainability Report 2018 ● Company Website: Please specify the web link to the mentioned Information http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf
C.27	Have there been any violations of any laws pertaining to labor, employment, consumer, commercial competition or environmental issues? (Penalty) IRPC: No	● Annual Report 2018 page 123
C.28	Has the Company faced any sanctions by the regulators for failure to make an announcement within the requisite time period for material events? (Penalty) IRPC: No	● Annual Report 2018 page 106
C.29	Does the Company prepare an integrated report? (Bonus) IRPC: Yes (For 4 consecutive years,)	● Annual Report 2018 page 127 ● Sustainability Report (CSR Report)

No.	Criteria	Information Sources
Disclosure and Transparency		
Does the Company have a transparent shareholder structure?		
D.1	Is there a breakdown of the shareholding structure? IRPC: Yes	● Annual Report 2018 page 71 ● Form 56-1 ● SET Website: Please specify the web link to the mentioned information http://www.set.or.th/set/companyholder.do?symbol=IRPC&ssoP_ageld=6&language=th&country=TH
D.2	Is it easy to identify beneficial shareholders? IRPC: Yes	● Annual Report 2018 page 71 ● Form 56-1 ● SET Website: Please specify the web link to the mentioned information http://www.set.or.th/set/companyholder.do?symbol=IRPC&ssoP_ageld=6&language=th&country=TH
D.3	Does the Company disclose the direct and indirect shareholdings of directors? IRPC: Yes	○ The Company disclose only direct or unseparated direct and indirect shareholdings of directors. ● The Company disclose separate direct and indirect shareholdings of directors ● Annual Report 2018 page 103 – 104 ● Form 56-1
D.4	Does the Company disclose the direct and indirect shareholdings of senior management? IRPC: Yes	○ The Company disclose only direct or unseparated direct and indirect shareholdings of directors. ● The Company disclose separate direct and indirect shareholdings of directors ● Annual Report 2018 page 105 – 106 ● Form 56-1
Please assess the quality of the annual report in the following D.05 – D.21		
D.5	Does the annual report contain a statement confirming the Company's full compliance with the code of corporate governance and where there is non-compliance, identify and explain reasons for each such issue? IRPC: Yes	● The SET's code of corporate governance is fully complied with ○ The reasons for each identified non-compliance with SET's code of corporate governance were disclosed. ● Annual Report 2018 page 107 – 131
D.6	Corporate objectives/ Long Term Goal IRPC: Yes	● Annual Report 2018 page 2 – 3
D.7	Financial status and performance IRPC: Yes	● Annual Report 2018 page 12 – 13, 168 – 191

D.8	Non-financial performance indicators, for example, market share, customer's satisfaction level, etc. IRPC: Yes	○ Percentage of market share ○ Percentage of customer's satisfaction ● Annual Report 2018 page 140 – 157
D.9	Business operations and competitive position IRPC: Yes	● Annual Report 2018 page 135 – 145
D.10	Corporate group structure (if any) IRPC: Yes	● Annual Report 2018 page 134
D.11	Key risks in the Company's business operation IRPC: Yes	● Annual Report 2018 page 50 – 59, 60 – 61, 181 – 186
D.12	Dividend policy IRPC: Yes	● Annual Report 2018 page 71, 126
D.13	Details of whistle-blowing policy IRPC: Yes	● Annual Report 2018 page 124
D.14	Board member background IRPC: Yes	● Annual Report 2018 page 24 – 37 ● Name-Surname ● Age ● Position ● Educational background ● Experience ● Shareholding percentage ● Date/ month/ year of appointment as director ● Directorship in other listed companies, listed companies and other company must be clearly provided
D.15	Identification of independent directors IRPC: Yes	● Annual Report 2018 page 23 – 27, 75
D.16	Basis of the Board remuneration IRPC: Yes	● Annual Report 2018 page 98 – 99
D.17	Basis of the key executives' remuneration IRPC: Yes	● Annual Report 2018 page 98 – 99
D.18	Disclosure of individual directors' remuneration IRPC: Yes	● Annual Report 2018 page 100 – 101
D.19	Number of Board of Directors' meetings held during the year IRPC: Yes	● Annual Report 2018 page 99
D.20	Board meeting attendance of individual directors IRPC: Yes	● Annual Report 2018 page 90
D.21	Training and continuing education programs attended by each director in the last year. IRPC: Yes	○ None participated in any development or training in the past year. ● Information on the development or training of each director in the past year was disclosed. ● Annual Report 2018 page 24 – 37, 107, 117

No.	Criteria	Information Sources
D.22	Does the Company fully disclose details of its connected transactions? IRPC: Yes	● Annual Report 2018 page 159 – 162 ○ Financial Statement and Footnote
D.23	Does the Company have a specific policy requiring directors to report their shareholding and transactions of Company shares to the Board of Directors? IRPC: Yes	● Annual Report 2018 page 131 ● Form 56-1 ● CG Handbook page 77 ● Code of Conduct page 12
D.24	Does the Company disclose in the annual report the change in shareholding of the directors and the executives, i.e. shares held at the beginning and end of the year, and trading during the year? IRPC: Yes	● Annual Report 2018 page 103 – 196
D.25	Does the Company have a policy requiring directors to report possible conflicts of interest? IRPC: Yes	● Annual Report 2018 page 131 ● Form 56-1 ● CG Handbook page 27 ● Code of Conduct page 12
D.26	Does the Company disclose its policy covering the review and approval of material/ significant connected transactions by the Board of Directors? IRPC: Yes	● Annual Report 2018 page 131, 159 – 162 ● Form 56-1 ● CG Handbook page 27 ● Code of Conduct page 12
D.27	Does the Company perform an annual audit using independent and reputable auditors? IRPC: Yes	● Annual Report 2018 page 127 Auditor: Deloitte Touche Tohmatsu Jaiyos Audit Co., Ltd.
D.28	Are audit fees disclosed in the annual report? IRPC: Yes	● Annual Report 2018 page 127 Non-audit fees: 3,100,000 baht (Three million, one hundred thousand baht)
D.29	Are the non-audit fees disclosed in the annual report? IRPC: Yes	● Annual Report 2018 page 127 Non-audit fees: 4,883,085 baht (Four million, eight hundred, eighty three thousand and eighty five baht)
D.30	Does the auditor endorse the Company's financial statements with conditions? IRPC: No	● Annual Report 2018 page 127
D.31	Is the annual report released within 120 days from the financial year-end? IRPC: Yes	● Release date of Annual Report 2018 March 1, 2019 ● SET Website ● Company Website ● Annual Report 2018 page 127

No.	Criteria	Information Sources
Does the Company offer the following multiple channels of access to information?		
D.32	Annual report IRPC: Yes	● Annual Report 2018
D.33	Quarterly reports IRPC: Yes	● SET Website: Please specify the web link to the mentioned information http://www.set.or.th/set/companyprofile.do?symbol=IRPC&ssoPageId=4&language=th&country=TH ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/ir_home_th.php ● Annual Report 2018 page 127
D.34	Company website IRPC: Yes	● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/index.php?intro=1
D.35	Analyst briefing(s)/ Opportunity Day IRPC: Yes	● A total of 4 Analyst Meetings ● Attended 4 Opportunity Day events ● Annual Report 2018 page 126 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/ir_home_th.php
D.36	Press conference(s)/ press briefing(s) on the Company's financial status? IRPC: Yes	● A total of 10 press conferences on corporate performance were held. ● A total of 4 Newsletter on corporate performance were issued. ● Annual Report 2018 page 126 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/ir_home_th.php
D.37	Was the financial report disclosed in an untimely manner during the past year? IRPC: No	● Annual Report 2018 page 127
Does the Company have a website disclosing the following up-to-date information?		
D.38	Business operations IRPC: Yes	● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/ir_home_th.php
D.39	Financial statements IRPC: Yes	● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/ir_home_th.php
D.40	Press releases IRPC: Yes	● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/ir_home_th.php
D.41	Shareholding structure IRPC: Yes	● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/cg_shareholder.php

No.	Criteria	Information Sources
D.42	Organization structure IRPC: Yes	● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_organiz.php
D.43	Corporate group structure (If any) IRPC: Yes	● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/ir_home_th.php
D.44	Information on the Board of Directors and management IRPC: Yes	● Company Website: Please specify the web link to the mentioned information The Board: http://www.irpc.co.th/th/about_board.php The Management: http://www.irpc.co.th/th/about_management.php
D.45	Information on the investor relations IRPC: Yes	● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/ir_home_th.php
D.46	Company's Articles of Association IRPC: Yes.	● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/pdf/CG/Articles%20of%20Association_280458_TH.pdf
D.47	Downloadable annual report IRPC: Yes	● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/ir_home_th.php
D.48	Downloadable notice to call the AGM IRPC: Yes	● Company Website: Please specify the web link to the mentioned information http://irpc.listedcompany.com/newsroom/010320161809390811T.pdf
D.49	Downloadable minutes of the AGM IRPC: Yes	● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/ir_home_th.php
D.50	Website in both Thai and English IRPC: Yes	● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/ir_home_th.php
D.51	Does the Company provide contact details for a specific Investor Relations person or unit that is easily accessible to outside investors? IRPC: Yes	● A specific Investor Relations unit was set up. ○ A specific Investor Relations person was appointed. Contact channel: ● Tel. ● Email ● Fax. ○ Other (Please specify...) ● Annual Report 2018 page 127 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/ir_home_th.php
D.52	Was there any record of sanctions by the SEC requiring the Company to revise its financial statements during the past year? (Penalty) IRPC: No	
D.53	Does the Company disclose the details of the CEO compensation? (Bonus) IRPC: Yes	● Annual Report 2018 page 99 – 100 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/en/sus_corporate_governance.php

No.	Criteria	Information Sources
Board Responsibilities		
Does the Company have a transparent shareholder structure?		
E.1	Does the Board of Directors have the Company's own written corporate governance policy? IRPC: Yes	● Annual Report 2018 page 111 – 112 ● Form 56-1 ● CG Handbook page 7 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf
E.2	Does the Board of Directors provide a code of ethics and/ or code of business conduct for its directors, senior management and employees, and disclose all details in the annual report or the company's website? IRPC: Yes	● Annual Report 2018 page 111 – 112 ● Form 56-1 ● CG Handbook page 48 ● Code of Conduct page 2 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/pdf/library/09/Code_of_Conduct.pdf
E.3	Does the Company disclose that all directors, senior management and employees are required to comply with the Code of Conduct and the CG Handbook? IRPC: Yes	● Annual Report 2018 page 112 ● Form 56-1 ● CG Handbook page 48 ● Code of Conduct page 3 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/pdf/library/09/Code_of_Conduct.pdf
E.4	Does the Company disclose how it implements and monitors compliance with the Code of Conduct and the CG Handbook? IRPC: Yes	● Annual Report 2018 page 108 – 112 ● Form 56-1 ● CG Handbook page 48 ● Code of Conduct page 2 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/pdf/library/09/Code_of_Conduct.pdf
E.5	Does the Board of Directors have a corporate vision/ mission? IRPC: Yes	● Annual Report 2018 page 79, 112 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_vision.php
E.6	Has the Board of Directors reviewed the vision, mission, and strategy in the last financial year? IRPC: Yes	● Annual Report 2018 page 79, 112 – 113 ● Form 56-1
E.7	Does the Board of Directors monitor the implementation of the corporate strategy? IRPC: Yes	● Annual Report 2018 page 79, 112 – 113 ● Form 56-1 ● CG Handbook page 20

No.	Criteria	Information Sources
E.8	Does the Board of Directors state in the Company's corporate governance policy that limits five Board seats in publicly-listed companies that a director can hold? IRPC: Yes	● Annual Report 2018 page 76, 114 ● Form 56-1 ● CG Handbook page 18
E.9	Does the Board of Directors state in the Company's corporate governance policy that limits three Board seats in publicly listed companies that a director can hold? (Bonus) IRPC: The policy on directorship in listed companies that each director can hold is limited to five	● Annual Report 2018 page 76, 114 ● CG Handbook page 18
E.10	Does the Board of Directors state a policy that addresses the Board positions in other firms held by the Company's CEO/ President? IRPC: Yes	● Annual Report 2018 page 76, 114 ● Form 56-1 ● CG Handbook page 21
E.11	Does the Board of Directors have a term limit of nine years for independent directors? IRPC: Yes	● Annual Report 2018 page 76, 114 ● Form 56-1 ● CG Handbook page 18
E.12	Does the Board of Directors have a term limit of six years or less for independent directors? (Bonus) IRPC: The term is limited to nine years	● Annual Report 2018 page 76, 114 ● Form 56-1 ● CG Handbook page 18
E.13	Does the Company have any independent directors who have served for more than nine years? (Penalty) IRPC: No	● No. ☐ Yes. Number.....director(s) ● Annual Report 2018 page 75 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_board.php
E.14	Did the Company fail to disclose the identity of the independent directors? (Penalty) IRPC: No	● Annual Report 2018 page 24 – 37, 75 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_board.php
E.15	Is any of the directors or senior management a former employee or partner of the current external auditor (in the past two years)? (Penalty) IRPC: No	● No. ☐ Yes. Number.....director(s) ● Annual Report 2018 page 24 – 56 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_management.php

No.	Criteria	Information Sources
E.16	Does the Company have any independent directors who serve on more than five boards of publicly-listed companies? IRPC: No	● No. ○ Yes. Number.....director(s) ● Annual Report 2018 page 24 – 37, 102 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_board.php
E.17	Does the Company have any executive directors who serve on more than two Boards of publicly-listed companies outside of the business group? IRPC: No	● No. ○ Yes. Number.....director(s) ● Annual Report 2018 page 36, 37, 102 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_board.php
E.18	Does at least one non-executive director have prior working experience in the major industry the Company is operating in? IRPC: Yes (Mr. Chansin Treenuchagron, Mr. Nutthachat Charuchinda, Mr. Anusorn Sangnimnuan, Mr. Somnuk Bomrungsalee, and Mr. Kris Imsang)	○ No. ● Yes. Number 5 director(s) ● Annual Report 2018 page 24 – 37 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_board.php
E.19	Does the SET/ SEC have any evidence of non-compliance with SET/ SEC rules and regulations during the past year? IRPC: No	
E.20	Does the Company have a compliance unit? (Bonus) IRPC: Yes	● Annual Report 2018 page 95 – 98 ● Form 56-1
E.21	Does the Board of Directors have an internal audit operation established as a separate unit in the Company? IRPC: Yes	● An internal audit unit was set up. ○ An external firm was hired to be the auditor. ● Annual Report 2018 page 82 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_organiz.php
E.22	If an internal audit was established, does it report directly to the Audit Committee? IRPC: Yes (The Office of Corporate Internal Audit reports directly to the Audit Committee.)	● Annual Report 2018 page 82 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_organiz.php
E.23	Is the head of internal audit identified or, if outsourced, is the name of the external firm disclosed? IRPC: Yes (The head of the Office of Corporate Internal Audit is Mr. Thammasak Panyowatkool)	● Annual Report 2018 page 82 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_management.php

No.	Criteria	Information Sources
Assessment of the Quality of the Audit Committee Report		
E.24	Disclosure of the meeting attendance of the Board of Directors during the year IRPC: Yes A total of 13 meetings were held	● Annual Report 2018 page 90
E.25	Internal control assessment and review IRPC: Yes	● Annual Report 2018 page 57 – 59, 82, 125
E.26	Connected transactions IRPC: Yes	● Annual Report 2018 page 82, 83, 159 – 162
E.27	Proposed auditor appointment IRPC: Yes	● Annual Report 2018 page 82, 127
E.28	Financial report review IRPC: Yes	● Annual Report 2018 page 60 – 61, 82
E.29	Legal compliance IRPC: Yes	● Annual Report 2018 page 82
E.30	Overall concluding opinion IRPC: Yes	● Annual Report 2018 page 60 – 61
E.31	Does the Company define and disclose the Board of Directors' diversity policy, such as professional skills, specific experiences, or gender, etc? IRPC: Yes	● Annual Report 2018 page 78 – 86 ● Form 56-1 ● CG Handbook page 18
E.32	Does the Company disclose the criteria used in selecting new directors? IRPC: Yes	● Annual Report 2018 page 85 ● Form 56-1 ● CG Handbook page 18
E.33	Does the Company disclose the process followed in appointing new directors? IRPC: Yes	● Annual Report 2018 page 85 ● Form 56-1 ● CG Handbook page 18
E.34	Does the Nomination Committee undertake the process of identifying the quality of directors that aligned with the Company's strategic directions? (Bonus) IRPC: Yes	● Annual Report 2018 page 85 ● Form 56-1 ● CG Handbook page 18
E.35	Does the Company use professional search firms or director pool when searching for candidates to the Board of Directors? (Bonus) IRPC: Yes (The Director Pool was used each time.)	● Annual Report 2018 page 85 ● Form 56-1

No.	Criteria	Information Sources
E.36	Does the Board provide an orientation to new directors? IRPC: Yes	● Annual Report 2018 page 117 ● Form 56-1 ● CG Handbook page 19
E.37	Does the Board of Directors have a policy that encourages directors to attend on-going or continuous professional education programs? IRPC: Yes	● Annual Report 2018 page 117 ● Form 56-1 ● CG Handbook page 49
E.38	Have Board members participated in the professional/ accredited directors' training? IRPC: Yes	● Annual Report 2018 page 107, 117 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_board.php
E.39	Does the Board of Directors encourage directors to regularly attend the continuing development programs or seminars? IRPC: Yes	● Annual Report 2018 page 117 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_board.php
E.40	How many Board meetings were held in the past year? IRPC: 12 meetings	● A total of 12 Board meetingd were held. ● Annual Report 2018 page 90 ● Form 56-1
E.41	What is the attendance performance of the Board members during the past year? IRPC: The Board attendance is 97%, and individual attendance is over 75%)	● Annual Report 2018 page 89 ● Form 56-1
E.42	Does the Company require a minimum quorum of at least 2/3 for Board decisions? IRPC: Yes	● Annual Report 2018 page 88 ● Form 56-1 ● CG Handbook page 23 - 24
E.43	Are the Board of directors' meetings scheduled in advance throughout the year? IRPC: Yes	● Annual Report 2018 page 88 ● Form 56-1 ● CG Handbook page 23
E.44	Have all directors attended at least 75% of all the Board meetings held during the year? IRPC: Yes (over 97%)	● Annual Report 2018 page 89 ● Form 56-1
E.45	Are Board papers for the Board of Directors' meetings provided to the Board at least five business days in advance of the Board meeting? IRPC: 7 days in advance of the Board meeting.	● Annual Report 2018 page 88 ● Form 56-1 ● CG Handbook page 23
E.46	Are there any meetings of non-executive directors in the absence of the management? IRPC: A total of 1 non-executive directors' meetings were held.	○ No. ● Yes. A total of. 1 non-executive directors meetings were held. ● Annual Report 2018 page 90 ● Form 56-1

No.	Criteria	Information Sources
E.47	Does the Board of Directors provide a risk management policy? IRPC: Yes	● Annual Report 2018 page 64 – 65, 87 – 88 ● Form 56-1 ● CG Handbook page 30
E.48	Does the Board disclose the internal control and risk management systems it has in place? IRPC: Yes	● Annual Report 2018 page 57 – 61 ● Form 56-1
E.49	Does the annual report disclose that the Board of Directors has conducted a review of the Company's internal controls and risk management systems? IRPC: Yes	● Annual Report 2018 page 57 – 61
E.50	Does the annual report contain a statement from the Audit Committee commenting on the adequacy of the Company's internal controls and risk management systems? (Bonus) IRPC: Yes	● Annual Report 2018 page 57 – 59
E.51	Does the Company disclose how key risks are managed? IRPC: Yes	● Annual Report 2018 page 57 – 59, 60 – 61 ● Form 56-1
E.52	Does the Board of Directors state a policy on conflicts of interest? IRPC: Yes	● Annual Report 2018 page 109 ● Form 56-1 ● CG Handbook page 74 ● Code of Conduct page 12
E.53	Does the Board of Directors clearly distinguish the roles and responsibilities of the Board and those of the management? IRPC: Yes	The Board distinguishes the role and responsibilities of: ● The Board ● The management ● CEO ● Annual Report 2018 page 90 ● Form 56-1 ● Code of Conduct page 39
E.54	Are the decisions requiring Board of Directors' approval disclosed? IRPC: Yes.	● Annual Report 2018 page 80 ● Form 56-1 ● CG Handbook page 20
E.55	Does the Board of Directors conduct an annual self-assessment of the entire Board? IRPC: Yes	● Annual Report 2018 page 114 – 116 ● Form 56-1
E.56	Does the Company disclose the process followed in conducting the assessment of the entire Board? IRPC: Yes	● Annual Report 2018 page 115 ● Form 56-1
E.57	Does the Company disclose the criteria used in the assessment of the entire Board? IRPC: Yes	● Annual Report 2018 page 115 ● Form 56-1

No.	Criteria	Information Sources
E.58	Is an annual performance assessment conducted of individual directors? IRPC: Yes	● Annual Report 2018 page 115 ● Form 56-1
E.59	Does the Board disclose the process followed in conducting the individual director assessment? IRPC: Yes	● Annual Report 2018 page 115 ● Form 56-1
E.60	Does the Board of Directors disclose the criteria used in the individual director assessment? IRPC: Yes	● Annual Report 2018 page 115 ● Form 56-1
E.61	Is an annual performance assessment conducted of all sub-committees? IRPC: Yes	IRPC has four sub-committees (Board level) 1. Nomination and Remuneration Committee 2. Audit Committee 3. Risk Management Committee 4. Corporate Governance Committee ● Annual Report 2018 page 115 – 116 ● Form 56-1
E.62	Does the Board of Directors conduct an annual performance assessment of the No. 1 Management (CEO)? IRPC: Yes	● Annual Report 2018 page 100 ● Form 56-1
E.63	Does the Board of Directors have a CEO succession plan in place? IRPC: Yes	● Annual Report 2018 page 118 ● Form 56-1
E.64	Does the Company disclose its remuneration policy for both short-term and long-term incentives and performance measures for its CEO? IRPC: Yes	● Annual Report 2018 page 100 ● Form 56-1 ● CG Handbook page 25 - 26
E.65	Is there disclosure of the fee structure for non-executive directors? IRPC: Yes	● Annual Report 2018 page 99 ● Form 56-1
E.66	Do the shareholders/ the Board of Directors approve the remuneration of the executive director/ the senior executives? IRPC: Yes	● Annual Report 2018 page 98 – 99 ● Form 56-1
E.67	Does the Board of Directors appoint a Company Secretary? IRPC: Yes	● Annual Report 2018 page 94 – 95 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_management.php#nogo

No.	Criteria	Information Sources
E.68	Is the Company Secretary educated or trained in legal or accountancy or company secretarial practices? IRPC: The Company Secretary has undergone training related to secretarial practices	Graduated in ☐ Accountancy ☐ Laws ● Courses trained ☒ CSP ☐ FPCS/ FCS ● Annual Report 2018 page 50, 56, 94 – 95 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_management.php#nogo
E.69	Is the Chairman of the Board an independent director? IRPC: No The Chairman was appointed due to his knowledge, experience, and competency in the petroleum and petrochemical businesses. (Chairman: Mr. Chansin Treenuchagron)	● Annual Report 2018 page 24 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_board.php#nogo
E.70	Is the Chairman of the Board also the CEO/ President? IRPC: No (President: Mr. Sukrit Surabotsopon)	● Annual Report 2018 page 24, 42, 54 ● Form 56-1 ● Company Website: Please specify the web link to the mentioned information http://www.irpc.co.th/th/about_board.php#nogo
E.71	Does the Board define and disclose the roles and responsibilities of the Chairman of the Board? IRPC: Yes	● Annual Report 2018 page 81 ● Form 56-1 ● CG Handbook page 24

Appointment of the Audit Committee

E.72	Does the Board of Directors appoint the Audit Committee? IRPC: Yes	● Annual Report 2018 page 81 – 82 ● Form 56-1
E.73	Are the duties and responsibilities of the Audit Committee clearly stated? IRPC: Yes	● Annual Report 2018 page 81 – 82 ● Form 56-1
E.74	Are the profiles and qualifications of the members of the Audit Committee publicly disclosed? IRPC: Yes	● Annual Report 2018 page 29 – 31 ● Form 56-1
E.75	Are all members of the Audit Committee independent directors? IRPC: Yes	● Annual Report 2018 page 29 – 31 ● Form 56-1
E.76	Did the Audit Committee meet at least four times during the year? IRPC: The Audit Committee held a total of 13 meetings this year	● Annual Report 2018 page 90 ● Form 56-1
E.77	Is the attendance of each member at the Audit Committee meetings disclosed in the annual report? IRPC: Yes	● Annual Report 2018 page 90 ● Form 56-1

No.	Criteria	Information Sources
E.78	Does at least one of the independent directors of the Audit Committee have accounting qualifications? IRPC: Yes (Mr. Jessada Promjart)	● Annual Report 2018 page 30 ● Form 56-1
E.79	Does the Audit Committee have a primary responsibility for recommendation on the appointment and removal of the external auditor? IRPC: Yes	● Annual Report 2018 page 82 – 83 ● Form 56-1
E.80	Does the Audit Committee have a primary responsibility for recommendation on the appointment, transfer and removal of the internal auditor? IRPC: Yes	● Annual Report 2018 page 82 – 83 ● Form 56-1
Appointment of the Remuneration Committee		
E.81	Does the Board of Directors appoint the Remuneration Committee? IRPC: Yes	● Annual Report 2018 page 83 ● Form 56-1
E.82	Are the duties and responsibilities of the Remuneration Committee clearly stated? IRPC: Yes	● Annual Report 2018 page 83 – 84 ● Form 56-1
E.83	Is the Remuneration Committee composed of a majority of independent directors (over 50%)? IRPC: No (equal to 50%)	● Annual Report 2018 page 75 ● Form 56-1 The Committee has two members, one (50%) of whom is an independent director
E.84	Is the Chairman of the Committee an independent director? IRPC: Yes	● Annual Report 2018 page 25, 75 ● Form 56-1
E.85	Did the Remuneration Committee meet at least twice during the year? IRPC: The Audit Committee held a total of 8 meetings this year	● Annual Report 2018 page 90 ● Form 56-1
E.86	Is the attendance of each member at Remuneration Committee meetings disclosed in the annual report? IRPC: Yes	● Annual Report 2018 page 90 ● Form 56-1
Appointment of the Nomination Committee		
E.87	Does the Board of Directors appoint the Nomination Committee? IRPC: Yes	● Annual Report 2018 page 83 ● Form 56-1
E.88	Are the duties and responsibilities of the Committee clearly stated? IRPC: Yes	● Annual Report 2018 page 83 – 84 ● Form 56-1
E.89	Does the Nomination Committee comprise entirely of independent directors? (Bonus) IRPC: No	● Annual Report 2018 page 75 ● Form 56-1

No.	Criteria	Information Sources
E.90	Is the Nomination Committee composed of a majority of independent directors (over 50%)? IRPC: No (equal to 50%)	● Annual Report 2018 page 75 ● Form 56-1 The Committee has two members, one (50%) of whom is an independent director.
E.91	Is the Chairman of the Nomination Committee an independent director? IRPC: Yes	● Annual Report 2018 page 25, 75 ● Form 56-1
E.92	Did the Nomination Committee meet at least twice during the year? IRPC: The Nomination Committee held a total of 8 meetings this year	● Annual Report 2018 page 90 ● Form 56-1
E.93	Is the number of meetings and member attendance at the Nomination Committee meetings disclosed? IRPC: Yes	● Annual Report 2018 page 90 ● Form 56-1
E.94	Does the Board of Directors appoint the Corporate Governance Committee (at the Board level only)? IRPC: Yes	● Annual Report 2018 page 86 ● Form 56-1
E.95	Does the Board of Directors appoint the Risk Management Committee? IRPC: Yes	● Annual Report 2018 page 87 ● Form 56-1
E.96	Does the Board of Directors comprise at least 5 members and no more than 12 members? IRPC: No	● Annual Report 2018 page 24 – 37, 74 – 75 ● Form 56-1 The Board comprises 14 members.
E.97	Does the Company have at least one female independent director? (Bonus) IRPC: Yes (Ms. Ruenvadee Suwanmongkol)	● Annual Report 2018 page 31, 75 ● Form 56-1 The Board has one female independent director.
E.98	How many Board members are non - executive directors? IRPC: 14 (out of 15 members, or 93.33%)	● Annual Report 2018 page 24 – 35, 75 ● Form 56-1 The Board has 14 non-executive directors.
E.99	Among the Board of Directors, how many are independent directors? IRPC: 7 out of 15 members (46.67%)	● Annual Report 2018 page 75, 25 – 31 ● Form 56-1 The Board has seven independent directors.
E.100	Does the Board of Directors provide the definition of 'independence' for identifying independent directors in public communications? IRPC: Yes	● Annual Report 2018 page 76 – 77 ● Form 56-1
E.101	Are the independent directors independent of the management and major shareholders? IRPC: Yes	● Annual Report 2018 page 76 – 77 ● Form 56-1
E.102	Does the annual report contain a separate Board of Directors' report describing their responsibilities in reviewing the Company's financial statements? IRPC: Yes	● Financial Report ● Form 56-1

No.	Criteria	Information Sources
E.103	Does the Company provide an employee stock options scheme with (1) the exercise period over three years, (2) the strike price above the market price at the time of the award, and (3) no concentration such that no particular individual received more than 5% of the award? (Bonus/ Penalty) IRPC: No	The 2015-2018 AGM/ EGM ☐ Approved ☐ ESOP ☐ EJIP ☐ Warrant ☒ No ☒ Form 56-1 ☒ SET Website/ SETSMART
E.104	Did the Company sign the declaration of the Private Sector Collective Action Coalition against Corruption? (Bonus) IRPC: Yes	☒ Annual Report 2018 page 123
E.105	Did the Company publish the Board Committee Report for each Board Committee (only at the Board level) in the Company's annual report? (Bonus) IRPC: Yes	☒ Annual Report 2018 page 60 – 65 ☒ Form 56-1
E.106	Has the Company had any non-compliance cases regarding fraud/ ethics in the past year? (Penalty) IRPC: No	☒ Annual Report 2018 page 106, 124
E.107	Have there been any instances where non-executive directors have resigned and raised any issues of governance-related concerns? (Penalty) IRPC: No	☒ Annual Report 2018 page 106
E.108	Have there been major corporate scandals that point to weak oversight by the Board of Directors? (Penalty) IRPC: No	☒ Annual Report 2018 page 106

COMPLIANCE WITH THE SOCIAL RESPONSIBILITY CRITERIA



Compliance with the Social Responsibility Criteria	Page
IRPC's business is conducted in parallel with its stewardship of society and the environment under good governance principles and corporate governance to lead it to business sustainability.	158-159 186-204
IRPC's Corporate Governance Committee is in place.	81, 91
IRPC discloses the total compensation of the management.	100-101
IRPC discloses the total compensation of employees.	Financial Statement
IRPC discloses the audit fees paid to its external auditor.	76
IRPC commands a policy on and strategies for risks and risk management.	160-163
IRPC's anti-corruption policy is in place.	77
IRPC's whistleblowing guidelines are in place.	77-78
IRPC enables stakeholders to report to responsible persons/ units.	77
IRPC participates as a member or associate of an anti-corruption body.	77
IRPC's vision/ policy promoting business and social innovations is in place.	153
IRPC improves and extends ideas/ goods or work processes into business and social innovations.	150, 154
IRPC's sustainability management policy is in place.	213
IRPC's environmental management and care policy is in place.	205
IRPC promotes effective and sustainable consumption of resources.	208, 211
IRPC prevents and reduces pollutants/ waste.	209-210
IRPC reduces greenhouse gas emissions.	209
IRPC's social responsibility policy is in place.	186-191
IRPC respects human rights and treats labor fairly.	188-189
IRPC's intention is clear about respecting human rights.	78, 188-189
IRPC's personnel capability development project is in place.	157-158 214-215 168-170
IRPC supports and aids community self-reliance efforts.	199
IRPC identifies key stakeholder groups.	65-70
IRPC engages stakeholders in its efforts.	65-70, 214
IRPC prepares a report on disclosure of social and environmental work.	190-212



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