



**POWER**  
DRIVES US TOWARD  
FURTHER SUCCESS

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## Message from the Chairman



### Dear Shareholders,

The Board of IRPC Public Company Limited has specified its vision to move IRPC to become “the Leading Integrated Petrochemical Complex in Asia by 2020.” The Board has also defined both short-term and long-term strategic plan to ensure that the organization will move to the established direction and plan and ultimately achieve its goals and objectives within time specified.

Last year marked another year of success for IRPC. IRPC's business performance has continuously improved. In 2017, EBITDA was recorded at 20,420 million baht with the net profit of 11,354 million baht, an increase of 17 percent from 9,721 million baht in 2016. Such success is the result of the Everest Project, a project based on a strategic plan to improve performance efficiency, manufacturing procedure, organizational management as well as fostering corporate value and culture while simultaneously developing the organization to be in the Top Quartile. To achieve this objective, the cooperation of employees of entire organization together with consultants from the leading companies worldwide is needed. Such project started since 2015 and

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**Last year marked another year of success for IRPC. IRPC's business performance has continuously improved. In 2017, EBITDA was recorded at 20,420 million baht with the net profit of 11,354 million baht, an increase of 17 percent in 2016.**

”

ended in 2017 and incurred the profit of approximately 7,000 million baht in which IRPC plans to further its growth by introducing new strategic plan under the name “GDP”. IRPC; therefore, will be equipped with strength, readiness and accurate prediction, rendering the company with more efficient business management and in conformity to directions specified by the Board.

Apart from creating added value to its business, The Board of IRPC also perform its duty as specified in the new CG Code, revise, develop and improve the performance by emphasizing on the notion of “Board that makes a difference”. The Board has constantly valued the internal control, risk management, anti-corruption policy and bribery while stressing on the highest benefits of every group of shareholders and stakeholders on a fair and equitable basis and strives to foster their confidence to maintain the

organization's image and reputation regarding transparency to ultimately become the good corporate citizen that is accepted and recognized by both domestic and international institutions. IRPC has been awarded with NACC Integrity Award 2017, presented by the Office of the National Anti-Corruption Commission for two consecutive years. In addition, the Board has realized the importance of business operation with responsibility towards society, environment and community as indicated in the company's philosophy on creating balance between economy, society and environment; thus, in 2017, IRPC had been recertified its membership of DJSI (Dow Jones Sustainability Indices) in oil and gas category for four consecutive years.

The Board has realized that an overall achievement in 2017 was a cooperation of every related party, especially the management and employees of IRPC and its subsidiaries who consistently dedicated their best effort and ability in leading the organization toward better goals in the future. On behalf of the Board of Directors, I would like to express my sincere gratitude to every stakeholder who have a strong faith and always provide us with considerable support. I would like to confirm that all of us at IRPC will continue to adhere to our vision and mission to render every shareholder with the highest benefits while striving to create value for business and society for sustainable growth and development.



**Mr. Tevin Vongvanich**

Chairman



## KEY PERFORMANCE

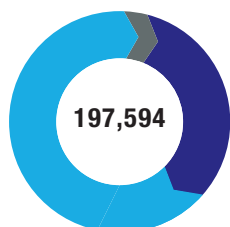
## NET SALES

## SALES DISTRIBUTION

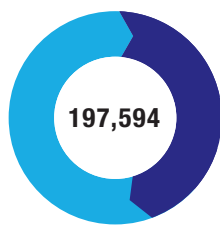
## PETROLEUM PRODUCTS

## PETROCHEMICAL PRODUCTS

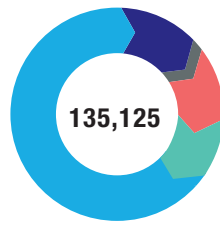
(UNIT: MILLION BAHT)



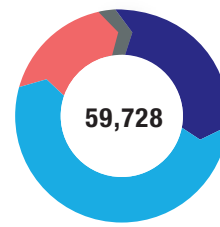
PETROLEUM PRODUCTS	68%
PETROCHEMICAL PRODUCTS	30%
OTHERS	2%



DOMESTIC	57%
EXPORT	43%



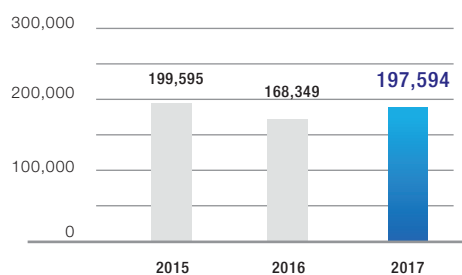
DIESEL	58%
GASOLINE	11%
FUEL OIL	3%
LUBE BASE OIL AND ASPHALT	12%
OTHERS	16%



OLEFINS AND POLYOLEFINS	59%
AROMATICS	29%
STYRENICS	11%
POLYOL	1%

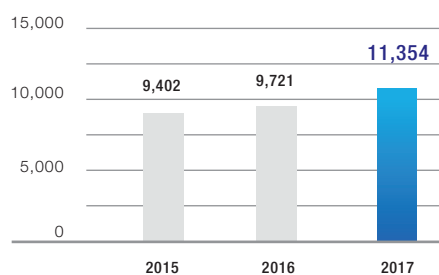
## NET SALES

UNIT: MILLION BAHT



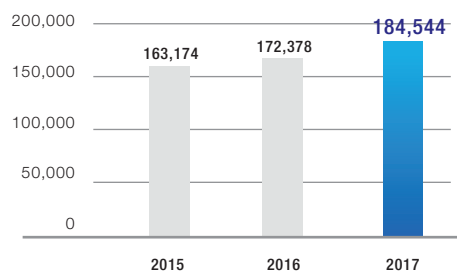
## NET PROFIT

UNIT: MILLION BAHT



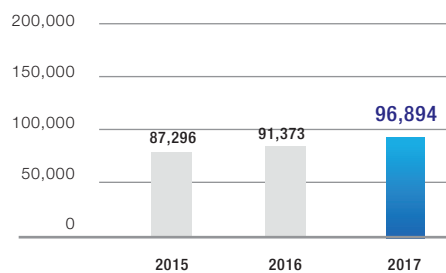
## TOTAL ASSETS

UNIT: MILLION BAHT



## TOTAL LIABILITIES

UNIT: MILLION BAHT



## Financial Highlights

	2015	2016	2017
<b>Financial Position</b>			
Current Assets	35,984	39,848	<b>47,583</b>
Total Assets	163,174	172,378	<b>184,544</b>
Current Liabilities	36,210	52,429	<b>49,365</b>
Total Liabilities	87,296	91,373	<b>96,894</b>
Shareholder's Equity	75,878	81,005	<b>87,650</b>
Registered Capital	20,475	20,475	<b>20,475</b>
Paid-up Capital	20,434	20,434	<b>20,434</b>
<b>Operating Performance</b>			
Sales <sup>(1)</sup>	214,172	185,041	<b>214,101</b>
Net Sales <sup>(2)</sup>	199,595	168,349	<b>197,594</b>
Cost of Goods Sold	197,913	164,900	<b>192,946</b>
Gross Profit (Loss)	16,258	20,140	<b>21,155</b>
EBITDA <sup>(3)</sup>	17,033	17,430	<b>20,420</b>
Net Profit (Loss)	9,402	9,721	<b>11,354</b>
<b>Financial Ratio</b>			
EBITDA Margin	7.95%	9.42%	<b>9.54%</b>
Net Profit Margin	4.39%	5.25%	<b>5.30%</b>
Return on Assets	5.77%	5.79%	<b>6.36%</b>
Return on Equity	13.09%	12.41%	<b>13.48%</b>
Current Ratio (time)	0.99	0.76	<b>0.96</b>
Net Debt to Equity (time) <sup>(4)</sup>	0.66	0.75	<b>0.65</b>
Dividend Payout	48%	48%	<b>52%</b>
Dividend per Share (baht)	0.22	0.23	<sup>(5)</sup> <b>0.29</b>
Book Value per Share (baht)	3.71	3.96	<b>4.28</b>
Earning per Share (baht)	0.46	0.48	<b>0.56</b>

### Notes:

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

<sup>(2)</sup> Net Sales includes Petroleum Sales (excluding excise tax), Petrochemical Sales, Power and Utilities Sales

<sup>(3)</sup> EBITDA means Earnings before interest, taxes, depreciation and amortization

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

<sup>(5)</sup> The Board of Directors of the Company's meeting on 13 February 2018, approved to propose a dividend payment for the operating results of 2017 at Baht 0.29 per share. However, the approval shall be proposed to the Annual Shareholders' Meeting for the year 2018 for the further consideration and approval.

# POWER *of* GROWTH



**EVEREST  
FOREVER (E4E)**



Armed with the “Leading Integrated Petrochemical Complex in Asia by 2020” vision, it is with determination that IRPC pursues growth. Leveraging EVEREST best practices, it forged management continuity under the “EVEREST Forever (E4E) Project” while expanding investment, growing capacities, tackling ASEAN markets, nurturing ties with business partners, and innovating high-value products.



# POWER *of* DIGITAL



IRPC  
**4.0**



## CCM 4.0

CUSTOMER CENTRIC  
DIGITAL PLATFORM

## ISC 4.0

DIGITAL INTEGRATED  
SUPPLY CHAIN

## OPS 4.0

SMART OPERATION

## ERP 4.0

ERP TRANSFORMATION

## IRPC 4.0



Striding into a futuristic era, IRPC executes a digital strategic plan under the “IRPC 4.0 Project” to apply state-of-the-art digital systems and technologies involving employees, business partners, and customers. Going forward, it’s all about streamlined and digitized operating processes, razor-sharp analysis, and more efficient production and services.

# POWER *of* PEOPLE



**IRPC**  
**DNA**



IRPC DNA-the corporate culture platform for “a new behavior, a new mindset” conducive to IRPC’s envisioned growth-accompanies refined HR administration, a resilient structure, recruitment of talented staff, inspired leadership, and instilling of new corporate values.





## Milestones



1



2



3



4

### January

- 1 • IRPC joined the opening ceremony with the Federal of Thai Industries and signed the cooperative agreement of the project in expanding the promotion of carbon footprint production of industrial organizations in its 6<sup>th</sup> stage.

### February

- Fitch Ratings (Thailand) raised IRPC's outlook from negative to stable while maintaining its credit rating at 'A-(tha)'.
- IRPC underwent its planned major turnaround. (every 5-6 years)

### March

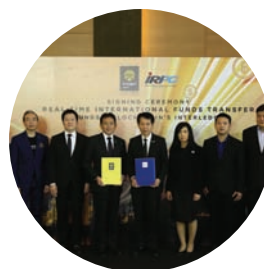
- 2 • IRPC signed the steam purchase contract with UBE Chemicals (Asia) Public Company Limited and also signed the service contract concerning ammonia and cyclohexane storage tanks with UBE Chemicals (Asia) Public Company Limited and Thai Synthetic Rubbers Co., Ltd.

### June

- 3 • Re-certification of CAC: Thailand's Private Sector Collective Action Coalition Against Corruption and Technology IRPC Co., Ltd. had been certified as CAC's member.
- IRPC has declared its intention and determination in moving forward its goals in pursuant of Sustainable Development Goals (SDGs) with Thailand Business Council for Sustainable Development, including its 39 membership organizations.

### July

- IRPC-PCC Co., Ltd. (IRPC-PCC), was dissolved for organization restructuring of IRPC's polyol business unit. This joint venture was equally held by IRPC Polyol Co., Ltd. (IRPC subsidiary), and PCC Rokita SA, Poland.
- The Company, in collaboration with Department of Industrial Promotion, Ministry of Industry and private sector, have expressed their strong intention and commitment in supporting business operation for social enterprise in pursuant of sustainable development of the nation.



5

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7

8

## August

- 4 • IRPC in collaboration with PTT Group established Sarn Palung Social Enterprise Co., Ltd., to raise the level of support for CSR to the social enterprise of PTT Group. The Company had a registered capital of Baht 10 million, with IRPC holding 15%.

## September

- 5 • Polypropylene Expansion Project (PPE), increasing its capacity by 160 KTA with total capacity of 635 KTA, started up its commercial production in September 2017.
- IRPC retained its membership of Dow Jones Sustainability Indices (DSI) for Oil and Gas Refining and Marketing Industry 2017 for 4 consecutive years and was ranked in a silver class by RobecoSAM yearbook.
- 6 • IRPC, in cooperation with the Global Compact Network Thailand (GCNT), participated in the National Agenda Announcement Program: Human right and moving the economy forward within the innovation framework of Thailand 4.0
- 7 • IRPC cooperated with Bank of Ayudhya Public Company (Limited), introduced Krungsri Blockchain's Interledger to be employed in real-time international money transfer for the first time in the purchase-selling of oil between IRPC and its foreign trading partners.

## November

- IRPC Polyol Company Limited had been certified a membership of Collective Action Coalition Against Corruption or CAC.

## December

- The Board approved divestiture of an additional 25% of IRPC's total paid-up capital in IRPC Polyol Co., Ltd., to PCC Rokita SA (PCCR), Poland, resulting in IRPC and PCCR holding 50:50. The share increased is designed to expand cooperation in the production, marketing, and sales of high value-added polyurethane products.
- 8 • The new polypropylene compound (PPC) plant using an in-line compounding system in its production process, obtained from Japan Polypropylene Corporation, increasing its capacity by 140 KTA, and started its commercial production in December 2017 with a total capacity of 775 KTA.



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



## Awards of Success 2017



### Investor Relations

#### The Ultimate Popular Stock Awards

In Resources category, from the decision of 4,000 investors based on Yamane evaluation criteria, the international criteria accepted worldwide. Such criteria consist of liquidity, regular information disclosure, executives' outstanding innovation and movement of stock price in response to the Company's growth.

- Asia's Best CEO (Investor Relations), Asia's Best CFO (Investor Relations), and Best Investor Relations Company for the fourth consecutive year, presented by Corporate Governance Asia Magazine, reflecting efficient capability of investor relations.

- Thailand Sustainability Investment (2017), presented by SET.



#### SET Awards 2017

**Best Investor Relations Awards, presented by SET and Money & Banking Magazine.**

- "The Best FX Solutions Thailand" from the Asset Asian Awards 2017, hosted by "The Asset Triple A", a leading magazine on financial and investment markets in Asia.

## CSR and the Environment



### SET Sustainability Awards 2017

presented by SET.

- Golden Peacock Global Awards for Corporate Social Responsibility, presented by Institute of Directors (IOD), India.

- IRPC was ranked among the 100 listed companies with outstanding Environment, Social and Governance (ESG) performance for three consecutive years.

- CSR Winners 2017 "Top Campaigns in the CSR & Nonprofit Sector 2017" from PR News USA.

- Asia Responsible Entrepreneurship Awards 2017, in Investment in People category (IRPC Cubic Academy) from Enterprise Asia, an independent organization promoting organizations' CSR and sustainability in Asia Pacific.

- Sustainability Report Awards 2017: Excellent Level, presented by SET for 5 consecutive years.

## Corporate Governance



### NACC Integrity Awards 2017

An honorary reward in recognition of morality, ethics, integrity from the Office of the National Anti-Corruption Commission (NACC) for 2 consecutive years.

- The Best Corporate in Asia 2017 Award in the category of Asia's Outstanding Company on Corporate Governance from Corporate Governance Asia Magazine.

- Golden Peacock Global Award for Excellence in Corporate Governance 2017, presented by Institute of Directors (IOD), India, in recognition of its outstanding corporate governance policies for 5 consecutive years.



- 2017 Certificate for CSR and occupational promotion of the disabled, presented by the Ministry of Labour.

## Energy and Industry



### Thailand Energy Awards 2017

In the category of Outstanding Personality: teamwork in energy management of the controlled plant and an outstanding award in energy accountability of the controlled plant, presented by the Department of Alternative Energy Development and Efficiency, Ministry of Energy, which represents the admiration and respect towards the plant, personnel including every supporting entity that encourage energy conservation and the development of alternative energy with an outstanding performance. Such plant is considered a good example for various organizations of its participation of employees of every level.



- Thailand Quality Prize 2017 Award, Diamond Award Level, in the category of Task Achieving QCC Prize from work achievement called “the control of hydrocarbon emission at the fare due to crake gas compressor shut down. Silver Award Level in the category of Junior Manufacturing QCC Prize from work achievement called “the reduction of product AB quantity from the production system of Bagging Machine Line 4”, presented by the Ministry of Industry.

- First Prize Winner of Best Practice Sharing Award from PTT Group Operational Excellence Award 2017, representing the Company’s constant support and promotion on efficiency improvement of the plant, exchange of body of knowledge in terms of technique, method and work experience as well as further the knowledge, applied



### Eco Factory Awards

Presented to 9 plants, namely EPS plant, PTK Catalyst plant, water supply plant, wastewater treatment plants 1 and 2, wastewater treatment plant 3, Catalyst HA1 plant, ABS plant, CCM plant and ethyl benzene styrene monomer plant, all presented by the Industrial Environmental Institute, Federation of Thai Industries.



### Zero Accident Campaign 2017 Awards

in a national level and plaque of honour from the campaign “Minimize workplace accident to zero”, Silver Award Level for the first time after being awarded with the Bronze Award Level for 4 consecutive years, presented by Thailand Institute of Occupational Safety and Health.

operation to enhance efficiency, minimize or increase expenditures by compiling them as a body of knowledge which is deemed significant in leading the Company to become organization of excellence.

- “Pleasant, enjoyable, clean, safe, environmentally friendly and lively workplace” Award 2017, very good level and “Disease-free, safe and pleasant environment workplace” Award 2017, excellent level for IRPC’s Phra Padaeng Oil Terminal, presented by the Ministry of Public Health.

- National Outstanding Workplace for Safety, Occupational Health and Work Environment Award 2017, presented by the Department of Labour Protection and Welfare.



## The Prime Minister's Industry Awards 2017

With 3 awards in total representing that the Company has implemented an efficient management while taking into account worthwhile resource allocation with highest benefits.

- Olefins Plant for Outstanding Industry Award. Category: Productivity.

- Base Lube Oil Plant for Outstanding Industry Award. Category: Energy Management, all awards were presented by the Ministry of Industry.

- Outstanding Prototype Workplace Award: Diamond Level, presented to IRPC's Ayutthaya Oil Terminal for 5 consecutive years.

- Outstanding Administrative Personality Award and Outstanding Supervisor Award: National Level

- Green Industry 4 (GI 14) Award, presented to 15 plants, namely Ban Khai Water Filtering Plant, refinery, condensate residue plant, combined gas oil plant, base oil plant, ethylene plant, propylene plant, acetylene black plant, cogeneration plant, benzyne/ toluene/xylene plant, polystyrene plant, compound polymer plant, polypropylene plant, high-density polyethylene compound plant, polyol plant, all presented by the Ministry of Industry.

## Innovation



## Best Innovative Company Awards

Best Innovative Company Award for the work on Ultra High Molecular Weight Polyethylene (UHMWPE) in SET Awards 2017, hosted by SET and Money & Banking magazine.



## Organizational Image



## Thomson Reuters 2017 Top 100 Global Energy Leader



The Company was selected by Thomson Reuters as, in recognition of its strong commitment and dedication on striving to become an energy leader and operational excellence in 8 criteria, namely, finance, investors and executives' confidence, risk management and security enhancement, compliance with laws, innovation, people and social responsibility, management of environmental impact and the Company's image.



## 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**NDIVIDUAL OWNERSHIP

**S**YNERGY

**P**ERFORMANCE EXCELLENCE

**I**NNOVATION

**R**ESPONSIBILITY FOR SOCIETY

**I**NTEGRITY & ETHICS

**T**RUST & RESPECT





# BOARD RESPONSIBILITY

BOARDS OF DIRECTORS

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ORGANIZATION STRUCTURE

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MANAGEMENT TEAM

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INTERNAL CONTROL

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MESSAGE FROM THE CHAIRMAN,  
RISK MANAGEMENT COMMITTEE

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REPORT OF THE AUDIT COMMITTEE

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MESSAGE FROM THE CHAIRMAN,  
NOMINATION AND REMUNERATION COMMITTEE

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MESSAGE FROM THE CHAIRMAN,  
CORPORATE GOVERNANCE COMMITTEE

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CORPORATE GOVERNANCE REPORT

## Boards of Directors



**Standing :** Mr. Kris Imsang  
Director/  
Member of Corporate  
Governance Committee

**Mr. Jessada Promjart**  
Independent Director/  
Member of Audit  
Committee

**Mr. Ekniti Nitithanprapas**  
Director/  
Member of Risk  
Management Committee

**General Sasin Thongpakdee**  
Independent Director/  
Member of Corporate  
Governance Committee

**Miss Nantika  
Thangsuphanich**  
Director/  
Member of  
Nomination  
and Remuneration  
Committee

**Seated :** Mr. Anusorn Sangnimnuan  
Independent Director/  
Chairman of Corporate  
Governance Committee

**Mr. Tevin Vongvanich**  
Chairman



**Mr. Chansin Treenuchagron**  
Director/ Member of Risk  
Management Committee

**Miss Ruenvadee  
Suwanmongkol**  
Independent Director/  
Member of Audit  
Committee

**General Theppong Tippayachan**  
Independent Director/  
Member of the Corporate  
Governance Committee

**Mr. Somnuk Bomrungsalee**  
Independent Director/  
Chairman of Audit  
Committee

**Mr. Chavalit Punthong**  
Director/ Member of  
Nomination and  
Remuneration  
Committee

**Mr. Woothisarn Tanchai**  
Independent Director/  
Chairman of Nomination  
and Remuneration  
Committee

**Mr. Sukrit Surabotsopon**  
Director/ Member of Risk  
Management Committee/  
President/ Secretary of  
the Board of Directors

**Mr. Nuttachat Charuchinda**  
Director/ Chairman of Risk  
Management Committee

# Boards of Directors, IRPC Public Company Limited

## Mr. Tevin Vongvanich

Chairman/

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

Age 59 Years Directorship Starting Date: 20 October 2015

### Education/ Training

- B.E. Chemical Engineering (1<sup>st</sup> Class Honor), Chulalongkorn University, Thailand
- 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
- 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 Joint State Private Sector Course, Class 22, National Defense College
- The Executive Program in Energy Literacy for a Sustainable Future (TEA), Class 3, Thailand Energy Academy
- Democratic Politics and Governance for High-Level Administrators Program, Class 10, King Prajadhipok's Institute
- Public Director Certification Program (PDI), Class 7, King Prajadhipok's Institute
- Director Certification Program (DCP), Class 21/ 2002, Thai Institute of Directors (IOD)
- Financial Statements for Directors (FSD), Class 6/ 2009, Thai Institute of Directors (IOD)
- Role of the Compensation Committee (RCC), Class 13/ 2011, Thai Institute of Directors (IOD)
- Anti-Corruption for Executive Program (ACEP), Class 15/ 2015, Thai Institute of Directors (IOD)
- Ethical Leadership program (ELP), Class 7/2017, Thai Institute of Directors (IOD)

### Possession of IRPC shares (%)

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

### Family relationship within the Company, major shareholder of subsidiaries

None

### Work experience within the past 5 years

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
Apr 2009 – Mar 2011	Chairman, PTT ICT Solution Company Limited

### Current Position

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

Oct 2015 – Present	Chairman, IRPC Public Company Limited
Sep 2015 – Present	President/ Chief Executive Officer, PTT Public Company Limited
Sep 2015 – Present	Director/ Secretary to the Board, PTT Public Company Limited
Nov 2009 – Present	Director, PTT Exploration and Production Public Company Limited

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

Aug 2017 – Present	Director, Member of the Economic Reform Commission
Jun 2016 – Present	Honorary Board Member, The Public Sector Development Commission
Jul 2015 – Present	Honorary Board Member, National Science and Technology Development Agency
Jul 2014 – Present	Director to the Board of Trustee, Thailand Management Association (TMA)
Nov 2014 – Present	Chairman, Information and Public Communication Management Sub-committee, National Committee on Competitive Advantage (NCC), National Economic and Social Development Board (NESDB)

## Mr. Nuttachat Charuchinda

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

Age 62 Years Directorship Starting Date: 29 April 2016

### Education/ Training

- Bachelor of Engineering, Chiang Mai 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
- The Joint State-Private 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 of 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

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

## Mr. Woothisarn Tanchai

Independent Director/  
Chairman of Nomination and Remuneration  
Committee

Age 59 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 of subsidiaries

None

### Work experience within the past 5 years

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	Member, the National Culture Commission
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 63 Years Directorship Starting Date: 27 August 2016**

### Education/ Training

- Ph.D. (Chemical Engineering), Monash University, Melbourne, Australia
- M.Eng. (Environmental Engineering), Asian Institute of Technology (AIT)
- B.Sc. (Chemical Engineering), Chulalongkorn University
- Diploma, The joint State-Private Sector Course, Class 20, 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
- 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/ 205, Thai Institute of Directors Association (IOD)
- DCP Refresher Course (DCP RE), Class 1/ 2008, 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 - 2016	Chairman, The Transport Company limited
2013 - 2016	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	Chariman, Bangchak Solar Energy Company Limited
2011 - 2012	Chariman, The Ubon Bioethanol Company Limited
2008 - 2012	Chariman, 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, Prukha 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

2014 - Present	Independent Director, Prukha Real Estate Public Company Limited
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## Mr. Somnuk Bomrungsalee

Independent Director /  
Chairman of Audit Committee

**Age 60 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)
- Energy Executive Course, Class 2/ 2008, Ministry of Energy
- Executive Training Course, Class 65/ 2009, Office of the Civil Service Commission
- Executive Training Course 2, Class 5/ 2013, Office of the Civil Service Commission
- The Executive Program in Energy Literacy for a Sustainable Future, Class 5/ 2014, Thailand Energy Academy (TEA)
- The Program for Senior Executive on Justice, Class 20/ 2015, Administration Batch, National Justice Academy
- Course in Politics and Governance in Democratic Systems for Executives, Class 16/ 2012, King Prajadhipok's Institute
- Director Certification Program (DCP), Class 233/ 2017, Thai Institute of Directors (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

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

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

None

## General Theppong Tippayachan

Independent Director/  
Member of the Corporate Governance Committee

**Age 59 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
- The National Defence College (NDC), Class 54/2011

### 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 2016 – Sep 2017	Assistant Commander in Chief, Royal Thai Army
Aug 2014 – Nov 2016	Director, Provincial Waterworks Authority
Oct 2015 – Sep 2016	1 <sup>st</sup> Army Area Commander
2014	1 <sup>st</sup> Corps Commander
2013	Deputy Commander of 1 <sup>st</sup> Army Area
2011	Commanding General of 2 <sup>nd</sup> Infantry Division, Queen's Guard

### Current Position

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

Apr 2017 – Present	Member of the 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

Oct 2017 – Present	Permanent Secretary for Defence, Office of the Permanent Secretary for Defence
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## General Sasin Thongpakdee

Independent Director/  
Member of Corporate Governance Committee

**Age 59 Years Directorship Starting Date: 1 September 2014**

### Education/ Training

- Armed Forces Academy Preparatory School
- Chulachomklao Royal Military Academy
- Royal Thai Army Command and General Staff College, Class 68/ 1989
- Joint Services Staff College, Thailand, Class 40/ 1998
- The Joint State-Private Sector Course, Class 24/ 2011, National Defence College
- Armour Officer Advance Course, Class 7/87, FT.KNOX, KY, USA
- Junior Maintenance Officer Course, FT.KNOX, KY, USA
- 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 2016 – Sep 2017	Chief of Staff, Royal Thai Army
2016	Deputy Chief of Staff, Royal Thai Army
2012	Director-General, Directorate of Operations, RTA

### 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

Oct 2017 – Present	Deputy Commander in Chief, Royal Thai Army
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## Mr. Ekniti Nitithanprapas

Director /  
Member of Risk Management Committee

**Age 46 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
- Director Certification Program (DCP), Class 93/ 2007, Thai Institute of Directors (IOD)
- Corporate Governance for Capital Market Intermediaries (CGI), Class 4/ 2015, Thai Institute of Directors (IOD)
- Role of the Nomination and Governance Committee (RNG), Class 8/ 2016, Thai Institute of Directors (IOD)
- Board Matters and Trend (BMT), Class 4/ 2017, Thai Institute of Directors (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 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 U.K. and Europe, Royal Thai Embassy, U.K.

### Current Position

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

Mar 2016 – Present	Member of Risk Management Committee, IRPC Public Company Limited
Nov 2015 – Present	Director, IRPC Public Company Limited
Nov 2015 – Present	Director, Siam Commercial Bank Public Company Limited
Nov 2015 – Present	Member of Nomination, Compensation and Corporate Governance Committee, Siam Commercial Bank Public Company Limited
	Board member/ Management in Non-Listed Company – The Stock Exchange of Thailand
Oct 2015 – Present	Director-General of the State Enterprise Policy Office, Ministry of Finance
Nov 2015 – Present	Chairman, National Credit Bureau Company Limited

## Miss Ruenvadee Suwanmongkol

Independent Director / Member of Audit Committee

**Age 53 Years Directorship Starting Date: 1 April 2016**

### Education/Training

- LL.B. (1<sup>st</sup> 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, U.S.A.
- 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,  
The National Defence College (NDC)
- 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
- 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 2019 - 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 Corporate Social Responsibility Committee, Dhanarak Asset Development Committee Member, The Foundation Assanee Pollajan
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. Chansin Treenuchagron

Director / Member of Risk Management Committee

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

**Age 57 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
- 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
- Advance Senior Executive Program (ASEP-5), Class 5/ 2010, KELLOGG & SASIN, Chicago, 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
- Leadership Development Program III (LDP III), Class 1/ 2014, PTT Public Company Limited
- The National Defence College (NDC), Class 57/ 2014
- The Executive Program in Energy Literacy for a Sustainable Future, Class 7/ 2015, Thailand Energy Academy (TEA7)
- Reward for Thammasat Best Economics Alumni 2015
- Reward for Thammasat Best Alumni 2017 by Thammasat University
- Reward for Best Alumni 2017 by Directorate of Civil Affairs
- Director Certification Program (DCP), Class 85/ 2007, Thai Institute of Directors (IOD)
- Financial Statements for Directors (FSD), Class 12/ 2011, Thai Institute of Directors (IOD)
- Director Accreditation Program (DAP), Class 93/ 2011, Thai Institute of Directors (IOD)
- Chartered Director Class (CDC), Class 11/ 2015, Thai Institute of Directors (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

Apr 2017 – Dec 2017	Chairman, PTT Asahi Chemical Company Limited
Jan 2016 – Sep 2017	Senior Executive Vice President, Downstream Business Group Alignment, PTT Public Company Limited
Nov 2015 – Dec 2017	Chairman, PTT Polymer Marketing Company Limited
Nov 2015 – Mar 2016	Chairman, PTT Polymer Logistics Company Limited
Oct 2015 – Dec 2015	Senior Executive Vice President, Petrochemicals & Refining Business Unit PTT Public Company Limited

Apr 2015 – Oct.2015	Director, Thai Oil Public Company Limited
Oct 2014 – Sep 2015	Senior Executive Vice President, Corporate Strategy, PTT Public Company Limited
Oct 2014 – Dec 2015	Chairman, PTT Green Energy (Thailand) Company Limited
Mar 2013 – Sep 2014	Senior Executive Vice President, Corporate Commercial and Marketing, IRPC Public Company Limited
Nov 2012 – Sep 2014	Director, PTT Polymer Marketing Company Limited
Jun 2012 – Sep 2014	Director, UBE Chemical (Asia) Public Company Limited
Jun 2012 – Sep 2014	Director, PTT Polymer Logistics Company Limited
Feb 2012 – Sep 2014	Director, Rayong Acetylene Company Limited
Dec 2011 – Jun 2014	Director, Technology IRPC Company Limited
Nov 2011 – Sep 2014	Director, IRPC Polyol Company Limited
Nov 2011 – Aug 2014	Chairman, Rak Pa Sak Company Limited
Oct 2011 – Feb 2013	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

Oct 2017 – Present	Chief Operating Officer, Infrastructure and Sustainability Management Business Group, PTT Public Company Limited
Oct 2017 – Present	Director / Member of Risk Management Committee / Member of Nomination and Remuneration Committee, Global Power Synergy Public Company Limited
Apr 2016 – Present	Member of Risk Management Committee, IRPC Public Company Limited
Oct 2015 – Present	Director, IRPC Public Company Limited

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

Dec 2017 – Present	Chairman, PTT Digital Solutions Company Limited
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## Mr. Jessada Promjart

Independent Director/  
Member of Audit Committee

Age 56 Years Directorship Starting Date: 16 March 2016

### Education/ Training

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

### Possession of IRPC shares (%)

No. of share "IRPC": 25,000

(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

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
2008 – 2015	Director, D-Land Development 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

2008 – 2014	Independent Director and Audit Committee, Chu Kai Public Company Limited
2009 – 2013	Chief Financial Officer, MCOT Public Company Limited
2011 – 2012	Director, True Corporation 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	Independent Director and Audit Committee, Nation Broadcasting Corporation 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

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, Paholyothin road's advantage between State Railway of Thailand and Central Inter Patthana Company Limited

## Mr. Kris Imsang

Director/  
Member of Corporate Governance Committee

**Age 52 Years Directorship Starting Date: 2 December 2017**

### Education/ Training

- Bachelor of Engineering (Civil Engineering), Chulalongkorn University
- Leadership Development Program III, Class 2, PTT Public Company Limited
- Certification in Top Executives in the Poom Palung Pandin Program, Class 3, Chulalongkorn University
- 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 (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

Feb 2016 – Dec 2017	Senior Executive Vice President, Human Resources & Organization Excellence, PTT Public Company Limited
Feb 2016 – Dec 2017	Chairman, PTT ICT Solutions Company Limited
2015 – Jan 2016	Executive Vice President, Retail Marketing, PTT Public Company Limited
2013 – 2015	Executive Vice President, Petroleum Terminal Operations, PTT Public Company Limited
2012 – 2013	Executive Vice President, Lubricant Business, PTT Public Company Limited

### Current Position

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

Dec 2017 – Present	Director/ Member of Corporate Governance Committee, IRPC Public Company Limited
Jan 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

Sep 2017 – Present	Chairman, Sarn Palung Social Enterprise Company Limited
Feb 2016 – Present	Chairman, Energy Complex Company Limited
2016 – Present	Committee, Chulalongkorn University Alumni Association (CUAA)
2009 – Present	Committee, Chulalongkorn Engineering Alumni

## Miss Nantika Thangsuphanich

Director/  
Member of Nomination and Remuneration Committee

**Age 52 Years Directorship Starting Date: 2 December 2017**

### 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

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

Dec 2017 – Present	Director/ Member 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

Oct 2017 – Present	Deputy Secretary of Energy
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## Mr. Sukrit Surabotsopon

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

**Age 59 Years Directorship Starting Date: 1 October 2013**

### Education/ Training

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

### Possession of IRPC shares (%)

No. of share "IRPC": 8,500,000

Share Possession: 0.04160%

### Family relationship within the Company, major shareholder or subsidiaries

None

### Work experience within the past 5 years

Jan 2014 – Feb 2018	Chairman, Petroleum Refining Industry Club, The Federation of Thai Industries
Feb 2015 – Jun 2017	Chairman, IRPC PCC Company Limited
Aug 2014 – Jul 2016	Chairman, Thai ABS Company Limited
Nov 2013 – Jun 2015	Director, PTT Polymer Marketing 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

Oct 2014 – Present	Member of Risk Management Committee, IRPC Public Company Limited
Oct 2013 – Present	Director/ President/ Secretary of the Board of Directors, IRPC Public Company Limited
Oct 2013 – 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

Jan 2017 – Present	Chairman, PTT Energy Solutions Company Limited
Jan 2014 – Present	Director, The Federation of Thai Industries
Mar 2015 – Present	Chairman, IRPC Technology Company Limited
Aug 2014 – Present	Chairman, IRPC Oil Company Limited
Aug 2014 – Present	Chairman, IRPC Polyol Company Limited
Nov 2013 – Present	Chairman, IRPC A&L Company Limited
Nov 2013 – Present	Director, UBE Chemicals (Asia) Public Company Limited



## Miss Jiraphon Kawswat

Director/ Member of Nomination and Remuneration Committee

**Age 56 Years Directorship Starting Date: 14 February 2018**

### Education/ Training

- Bachelor of Science (Accounting), Kasetsart University
- Master of Accountancy (Cost Accounting), Chulalongkorn University
- Master of Business Administration (Financial Management), Kasetsart University
- Executive Development Program (EDP), Thai Listed Companies Association
- Senior Executive Program, London Business School, United Kingdom
- 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
- Leadership Development Program III, Class 2/ 2015, PTT Leadership and Learning Institute, PTT Public Company Limited
- Directors Certification Program Update (DCPU), Class 2/ 2014, Thai Institute of Directors (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 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

Feb 2018 – Present	Director/ Member of Nomination and Remuneration Committee IRPC Public Company Limited
Oct 2017 – Present	Senior Executive Vice President, Oil Business Unit, PTT Public Company Limited

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

Sep 2018 – Present	Chairman, PTT Retail Management Company Limited
Jan 2016 – Present	Director, PTT Oil and Retail Business Company Limited

## Mr. Chavalit Punthong

Director/ Member of Nomination and Remuneration Committee/ A Director who is authorized to sign on behalf of the Company  
(Resigned, effective from 31 January 2018)

**Age 61 Years Directorship Starting Date: 17 November 2015**

### Education/ Training

- Bachelor of Engineering (Mechanical), Kasetsart University
- MBA, Central Missouri State University, USA.
- Senior Executive Program (SEP), Sasin Graduate Institute of Business Administration of Chulalongkorn University
- PTT: GE Executive Leadership Program, GE Croton Ville, USA
- Nida: Wharton Executive Leadership Program 2009, The Wharton School, University of Pennsylvania, USA
- Capital Market Academy Leader Program, Class 18, Capital Market Academy
- Director Certification Program (DCP), Class 177/2013, Thai Institute of Directors (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 2015- Oct 2017	Chief Operating Officer Infrastructure and Sustainability Management Business Group, PTT Public Company Limited
Oct 2016 – Oct 2017	Member of Risk Management Committee, Global Power Synergy Public Company Limited
Dec 2015 – Oct 2017	Director, Global Power Synergy Public Company Limited
2013 – Nov 2015	Chairman, Thai Petroleum Pipeline Company Limited (Thapline)
2013 – 2015	Senior Executive Vice President, Oil Business Unit, PTT Public Company Limited
2012 – Nov 2015	Chairman, PTT Retail Management Company Limited (PTTRM)
2012 – Nov 2015	Chairman, PTT Retail Business Company Limited (PTTRB)
2011 – 2013	Executive Vice President, Retail Marketing, PTT Public Company Limited
2010 – 2011	Executive Vice President, Commercial & International Marketing, PTT Public Company Limited

### Current Position

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

Apr 2016 – Present	Member of Nomination and Remuneration 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

None

## Mr. Songpope Polachan

(Resigned, effective from 31 January 2018)

**Age 63 Years Directorship Starting Date: 5 April 2013**

### Education/ Training

- Bachelor of Science (Geology), Chiang Mai University
- Ph.D. (Petroleum Geology), Royal Holloway and Bedford New College, University of London, U.K.
- Top Executive Program in Administrative Justice Development, Class 3, Administrative Justice Development Institute
- The Executive Program in Energy Literacy for a Sustainable Future (TEA), Class 2, Thailand Energy Academy
- The National Defence College (NDC), Class 50
- Advanced Executive Program, Kellogg School of Management, Northwestern University, USA
- ASEAN Executive Program, New York, USA
- Senior Executive Service Course, Class 42, Office of the Civil Service Commission
- Director Accreditation Program (DAP), Class 23/ 2004, Thai Institute of Directors (IOD)
- Finance for Non-finance Directors Program (FND), Class 9/ 2004, Thai Institute of Directors (IOD)
- 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

Sep 2016 – Nov 2017	Chairman of Audit Committee, IRPC Public Company Limited
Jun 2015 – Nov 2017	Member of Audit Committee, IRPC Public Company Limited
Oct 2014 – Nov 2017	Independent Director, IRPC Public Company Limited
Apr 2013 – Nov 2017	Director, IRPC Public Company Limited
Apr 2013 – Apr 2016	Member of Nomination and Remuneration Committee, IRPC Public Company Limited
Jul 2014 – Sep 2014	Inspector General, Ministry of Energy
2010 – 2014	Director General, Department of Mineral Fuels, Ministry of Energy

### 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

2015 – Present	Chairman, Right Tunnelling Company Limited
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## Mr. Pramoul Chanpong

(Resigned, effective from 31 January 2018)

**Age 62 Years Directorship Starting Date: 1 April 2014**

### Education/ Training

- Bachelor of Engineering in Electrical Engineering (Electrical Power), Rajamangala Institute of Technology
- Master of Arts (Political Science), Kasetsart University
- Certificate of Rational Use of Energy, Asian Institute of Technology (AIT)
- Professional Engineer
- Diploma, The State Private Political Sector Course, Class 6, National Defence College
- Senior Executive Training Course, Batch 45, The Civil Service Training Institute, Office of the Civil Service Commission
- Energy Executive Course, Class 2, Ministry of Energy
- The Course for Middle Executive Officer, Ministry of Science and Technology
- 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 2016 – Nov 2017	Independent Director, IRPC Public Company Limited
Oct 2014 – Nov 2017	Member of Corporate Governance Committee, IRPC Public Company Limited
Apr 2014 – Nov 2017	Director, IRPC Public Company Limited
Jul 2014 – Sep 2016	Inspector General, Ministry of Energy
2013 – 2014	Director-General, Dept. Of Alternative Energy Development and Efficiency

### Current Position

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

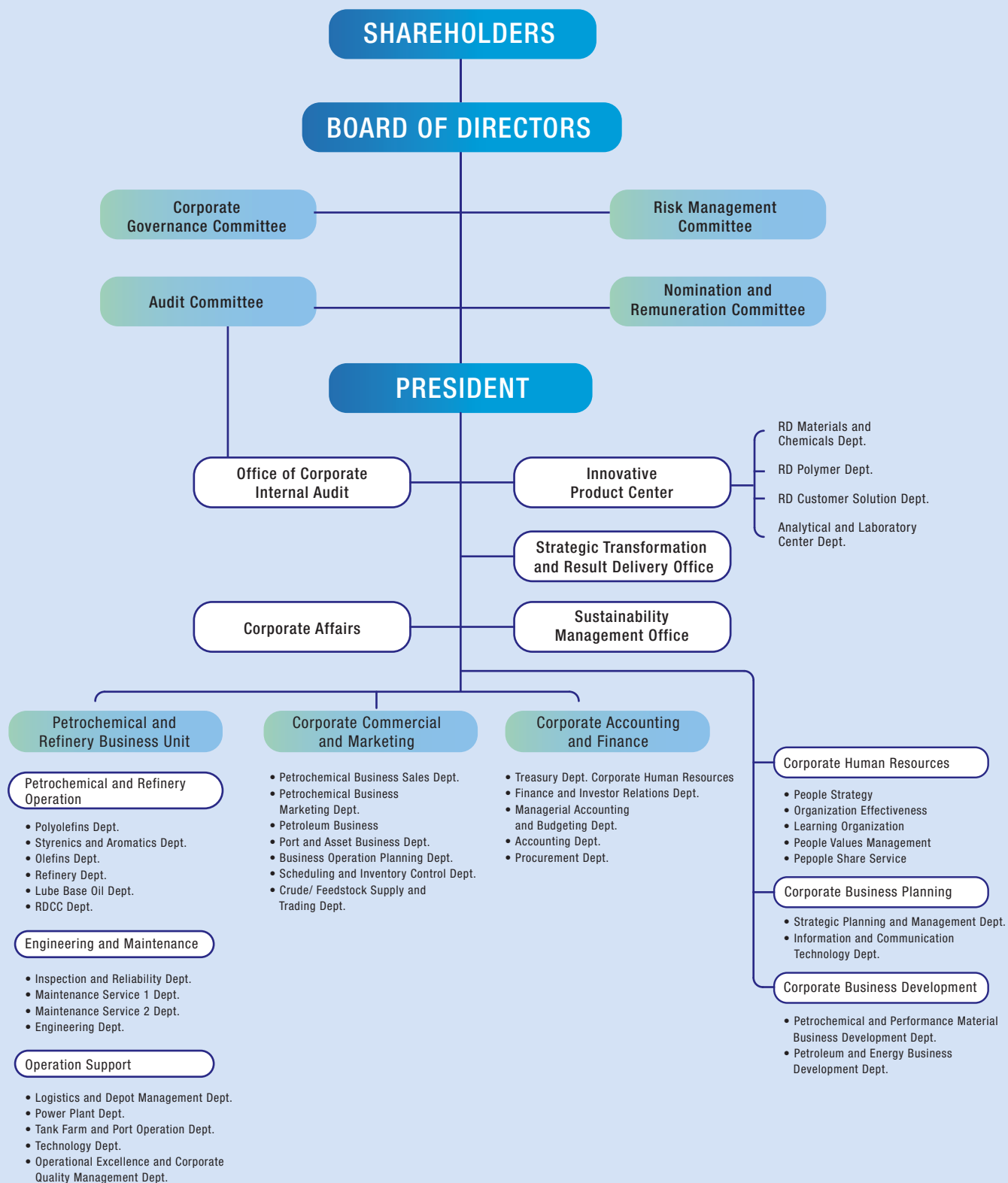
None

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

None

# Organization Structure

As of February 1, 2018



## Managements Team



**Mr. Pongraphan Titathavewatana**  
Senior Executive Vice President,  
Petrochemical & Refinery  
Business Unit

**Mr. Sukrit Surabotsopon**  
President

**Mrs. Rachadaporn Rajchataewindra**  
Senior Executive Vice President,  
Corporate Accounting & Finance

**Mr. Somkiat Lertritpuwadol**  
Senior Executive Vice President,  
Corporate Accounting & Finance





**Miss Wanida Utaisomnapa**  
Executive Vice President,  
Corporate Business Planning



**Mr. Sirimet Leepagorn**  
Executive Vice President,  
Strategic Transformation and  
Result Delivery Office



**Mr. Chalor Panutrakul**  
Executive Vice President,  
Corporate Business  
Development



**Mr. Pravet Assavadakorn**  
Executive Vice President,  
Innovative Product Center



**Mr. Thammasak Panyowatkool**  
Executive Vice President,  
Officiate as Office of  
Internal Audit Manager



**Miss Monwipa Choopiban**  
Executive Vice President,  
Corporate Affairs/  
Company Secretary



**Mr. Veerawat Srinoradithlert**  
Executive Vice President,  
Engineering & Maintenance



**Mr. Woravuth Sivapetranart**  
Executive Vice President,  
Refinery and Petrochemical  
Operation



**Mr. Vichit Nittayanonte**  
Executive Vice President,  
Operation Support



**Mr. Phothiwat Paopongchuang**  
Executive Vice President,  
President Office/  
Managing Director,  
Technology IRPC  
Company Limited.



**Miss Awrapin Ketatanakul**  
Executive Vice President,  
Sustainability Management Office



**Mr. Kraisit Anukoolutaiwong**  
Executive Vice President,  
Corporate Human Resource

# Management Team

## Mr. Sukrit Surabotsopon

President

**Age: 59 Years Appointed as a Executive under the regulations of SEC since October 1, 2013**

### Education/ Training

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

### Possession of IRPC shares (%)

No. of share "IRPC": 8,500,000

Share Possession: 0.04160%

### Family relationship within the Company, major shareholder or subsidiaries

None

### Work experience within the past 5 years

Feb 2015 – Jun 2017	Chairman, IRPC PCC Company Limited
Aug 2014 – Jul 2016	Chairman, Thai ABS Company Limited
Nov 2013 – Jun 2015	Director, PTT Polymer Marketing 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

Oct 2014 – Present	Member of Risk Management Committee, IRPC Public Company Limited
Oct 2013 – Present	Director/ President / Secretary of the Board of Directors, IRPC Public Company Limited
Oct 2013 – 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

Jan 2017 – Present	Chairman, PTT Energy Solutions Company Limited
Mar 2015 – Present	Chairman, IRPC Technology Company Limited
Aug 2014 – Present	Chairman, IRPC Oil Company Limited
Aug 2014 – Present	Chairman, IRPC Polyol Company Limited
Nov 2013 – Present	Chairman, IRPC A&L Company Limited
Nov 2013 – Present	Director, UBE Chemicals (Asia) Public Company Limited

## Mr. Pongpraphan Titathavewatana

Senior Executive Vice President,  
Petrochemical & Refinery Business Unit

Age: 59 Years Appointed as a Executive under the regulations  
of SEC since January 2, 2015

### 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": 414,478  
Share Possession: 0.00203%

### Family relationship within the Company, major shareholder or subsidiaries

None

### Work experience within the past 5 years

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

Jan 2016 - 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 2016 - Present	Director, IRPC A&L Company Limited
Jan 2016 - Present	Director, IRPC Clean Power Company Limited

## Mr. Somkiat Lertritpuwadol

Senior Executive Vice President,  
Corporate Commercial and Marketing

Age: 55 Years Appointed as a Executive under the regulations  
of SEC since January 2, 2015

### 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
- Director Accreditation Program (DAP), Class 111/ 2014,  
Thai Institute of Directors (IOD)
- Director Certification Program (DCP), Class 224/ 2016,  
Thai Institute of Directors (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

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 - May 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 2016 - Present	Senior Executive Vice President, Corporate Commercial and Marketing, IRPC Public Company Limited
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#### Board member/ Management in Non-Listed Company - The Stock Exchange of Thailand

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. Rachadaporn Rajchataewindra**

Senior Executive Vice President,  
Corporate Accounting & Finance

Age: 59 Years Appointed as a Executive under the regulations  
of SEC since January 2, 2015

**Education/ Training**

- Bachelor of Art (Accounting), Chiang Mai 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
- TLCA Executive Development Program (EDP), Class 4/ 2009, Thai Listed Companies Association
- Capital Market Academy Leader Program, Class 25/ 2017, Capital Market Academy, The Stock Exchange of Thailand
- Director Accreditation Program (DAP), Class 111/ 2014, Thai Institute of Directors (IOD)
- Corporate Governance for Executive, Class 1/ 2014, Thai Institute of Directors (IOD)
- Successful Formulation and Execution of Strategy, Class 21/ 2014, Thai Institute of Directors (IOD)
- Director Certification Program (DCP), Class 204/ 2015, Thai Institute of Directors (IOD)
- The Board's Role in Strategic Formulation, Governance Matters Australia

**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**

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**

Nov 2015 - Present	Senior Executive Vice President, Corporate Accounting & Finance, IRPC Public Company Limited
Nov 2015 - Present	Executive Vice President, Corporate Finance & Accounting, PTT Public Company Limited

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

Dec 2015 - Present	Director, IRPC OIL Company Limited
Dec 2015 - Present	Director, IRPC Polyol Company Limited
Dec 2015 - Present	Director, UBE Chemicals (Asia) Public Company Limited
Nov 2015 - Present	Director, IRPC Clean Power Company Limited
Nov 2015 - Present	Director, IRPCA&L Company Limited

**Mr. Vichit Nittayanonte**

Executive Vice President,  
Operation Support

Age: 58 Years Appointed as a Executive under the regulations  
of SEC since January 2, 2015

**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 (IOD)
- Financial Statements for Directors (FSD), Class 12/ 0211, Thai Institute of Directors (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 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 - 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**

Mar 2017 - Present	Director, Rakpasak Company Limited
Dec 2014 - Present	Director, IRPC A&L Company Limited
Feb 2012 - Present	Director, IRPC Oil Company Limited
Feb 2012 - Present	Director, IRPC Polyol Company Limited
Feb 2012 - Present	Director, Thai Polyurethane Industry Company Limited

## Mr. Woravuth Sivapetranart

Executive Vice President,  
Refinery and Petrochemical Operation

Age: 54 Years Appointed as a Executive under the regulations  
of SEC since January 2, 2015

### Education/ Training

- Bachelor of Science (Chemistry), Prince of Songkla University
- Master of Business Administration (Business Administration), Chulalongkorn University
- MINI MBA, Thammasat University

### Possession of IRPC shares (%)

No. of share "IRPC": 179,351  
Share Possession: 0.00088 %

### Family relationship within the Company, major shareholder or subsidiaries

None

### Work experience within the past 5 years

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 2017 - Present	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

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

## Mr. Veerawat Srinoradithlert

Executive Vice President,  
Engineering & Maintenance

Age: 55 Years Appointed as a Executive under the regulations  
of SEC since January 2, 2015

### Education/ Training

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

### 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. Sirimet Leepagorn

Executive Vice President,  
Strategic Transformation and Result Delivery Office

Age: 50 Years Appointed as a Executive under the regulations of SEC since January 2, 2015

### Education/ Training

- Bachelor of Science (Chemistry), Chiang Mai University
- Master of Business Administration, Burapha University
- PTT Leadership Development Program (LDP II), Harvard 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": 143,154  
(Self: 113,292 Share Possession: 0.00055%)  
(Spouse: 29,862 Share Possession: 0.00015%)

### Family relationship within the Company, major shareholder or subsidiaries

None

### Work experience within the past 5 year

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
Oct 2014 - 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
2010 - 2013	Vice President Refinery and Related Business Development, IRPC Public Company Limited

### Current Position

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

Dec 2017 - Present	Executive Vice President, Strategic Transformation and Result Delivery Office
Jan 2016 - Present	EVEREST Project Director

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

Jan 2015 - Present	Acting President, IRPC Clean Power Company Limited
Sep 2014 - Present	Director, IRPC Clean Power Company Limited
Feb 2012 - Present	Director, IRPC Oil Company Limited

## Miss Wanida Utaisomnapa

Executive Vice President,  
Corporate Business Planning

Age: 51 Years Appointed as a Executive under the regulations of SEC since January 2, 2015

### 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
- 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
- IRPC Middle Management Leadership Development Program Wave, Class 1
- 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

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 2015 - Present	Executive Vice President, Corporate Business Planning, IRPC Public Company Limited
Feb 2015 - Present	Secretary of the Risk Management Committee, IRPC Public Company Limited

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

None

## Mr. Chalor Panutrakul

Executive Vice President,  
Corporate Business Development

Age: 59 Years Appointed as a Executive under the regulations  
of SEC since January 2, 2015

### Education/ Training

- Bachelor of Engineering (Chemical Engineering), Chulalongkorn University
- Master of Business Administration (Management), Sasin Graduate Institute of Business Administration of Chulalongkorn University
- Thai ASEAN Economic Community, Class 4/ 2013, College of Politics and Governance, King Prajadhipok's Institute
- Power of the Kingdom, Class 3/ 2014, Chula Unisearch, Chulalongkorn University
- 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 (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

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

2014 - Present	Executive Vice President, Corporate Business Development, IRPC Public Company Limited
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#### Board member/ Management in Non-Listed Company - The Stock Exchange of Thailand

None

## Mr. Pravet Assavadakorn

Executive Vice President,  
Innovative Product Center

Age: 59 Years Appointed as a Executive under the regulations  
of SEC since January 2, 2015

### Education/ Training

- Bachelor of Chemical (Engineering), University of Tokyo
- Master of Chemical (Energy Engineering), University of Tokyo
- Mini MBA, Thammasat University
- The Board's Role in Strategic Formulation, Governance Matters Australia
- 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
- Director Accreditation Program (DAP), Class 98/ 2012, Thai Institute of Directors (IOD)
- Director Certification program (DCP), Class 238/ 2017, Thai Institute of Directors (IOD)

### Possession of IRPC shares (%)

No. of share "IRPC": 278,600

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

(Spouse: 25,000 Share Possession: 0.00012%)

### Family relationship within the Company, major shareholder or subsidiaries

None

### Work experience within the past 5 years

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

Apr 2015 - Present	Executive Vice President, Innovative Product Center, IRPC Public Company Limited
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#### Board member/ Management in Non-Listed Company - The Stock Exchange of Thailand

Mar 2015 - Present	Director, IRPC Polyol Company Limited
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## Mr. Kraisit Anukoolutaiwong

Executive Vice President, Corporate Human Resource/  
Acting People Strategy/  
Acting Organization Effectiveness

Age: 56 Years Appointed as a Executive under the regulations  
of SEC since January 2, 2015

### 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 - May 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. Thammasak Panyowatkool

Executive Vice President,  
Officiate as Office of Internal Audit Manager

Age: 51 Years Appointed as a Executive under the regulations  
of SEC since January 2, 2015

### 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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## Miss Awrapin Ketratanakul

Executive Vice President,  
Sustainability Management Office

Age: 58 Years Appointed as a Executive under the regulations  
of SEC since January 2, 2015

### 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 By 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 VP 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

### Possession of IRPC shares (%)

No. of share "IRPC": 92,721  
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

None

## Mr. Phothiwat Paopongchuang

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

Age: 56 Years Appointed as a Executive under the regulations  
of SEC since January 2, 2015

### Education/ Training

- Bachelor of Engineering (Mechanical Engineering), Khon Khan 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 (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

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

## Miss Monwipa Choopiban

Executive Vice President, Corporate Affairs/  
Company Secretary

Age: 59 Years Appointed as a Executive under the regulations  
of SEC since January 2, 2015

### 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)
- Company Secretary Program (CSP), Class 40/ 2011, Thai Institute of Directors (IOD)
- Director Certification Program (DCP), Class 164/ 2012, Thai Institute of Directors (IOD)
- Director Certification Program Update (DPCU), Class 3/ 2015, Thai Institute of Directors (IOD)
- Anti-Corruption: The Practical Guide (ACPG), Class 24/ 2015, Thai Institute of Directors (IOD)
- Anti-Corruption in Practice (ACPC), Thai Institute of Directors (IOD)
- Corporate Governance for Executives (CGE), Thai Institute of Directors (IOD)
- Board that Makes a Difference (BMD), Thai Institute of Directors (IOD)
- The Board's Role in Strategic Formulation, Governance Matters Australia
- Programme of Activities 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
- National Dialogue on Business and Human Rights (Global Compact Network Thailand)
- Sustainable Brand 2016, 2017
- Social Enterprise and Human Right

### 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 - 2015	Acting Executive Vice President, Corporate Affairs, IRPC Public Company Limited
Oct 2012 - Apr 2015	Director, TPI Internet Portal Company Limited
Feb 2012 - Mar 2015	Director, IRPC Oil 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

2015 - Present	Executive Vice President, Corporate Affairs, IRPC Public Company Limited
2013 - Present	Secretary of Nomination and Remuneration Committee, IRPC Public Company Limited
2012 - Present	Company Secretary/ Secretary of Corporate Governance Committee, IRPC Public Company Limited
2011 - Present	Secretary of the Management Committee, IRPC Public Company Limited
2011 - Present	Vice President, Downstream Petroleum Business Group PTT Public Company Limited

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

2015 - Present	Director, Technology IRPC Company Limited
2017 - Present	Director, Sarn Palung Social Enterprise Company Limited

## Summary of the Board's Opinion regarding 2017 Internal Control System

At Board meeting No. 2/2018, held on February 13, 2018 in which independent directors and Audit committee attending the meeting, the Board has summarized their opinion pertinent to an internal control system of the Company in terms of sufficiency, appropriateness, weakness and solutions to resolve such weakness of the internal control system. This can be accomplished by inquiring information from the management, internal control department, business plan team as well as considering an evaluation form prepared by the management. The Board agreed that the Company's internal control system is adequate and appropriate with five elements of the internal control. In addition, IRPC has provided sufficient personnel to efficiently operate the system while establishing the internal control system in monitoring and following-up the operation of its subsidiaries so that they can protect the Company's and its subsidiaries' property from being misused or exploited by the directors or executives, including any transactions with any individuals with possible conflict and other related persons. As for other topics of the internal control, the Board also agreed that the Company had set up an adequate internal control system.

IRPC's internal control system has regularly been updated with changes in internal and external circumstance. In 2017, the Company developed the system and summarized these following steps for inclusions in its annual report under the COSO (the Committee of Sponsoring Organizations of the Treadway Commission) which consists of 5 major components as described below:

### 1 Control environment

The Board and the management encourage a corporate culture focusing on having smart and conscientious employees to help accomplish its vision and mission in a sustainable way with efficiency and effectiveness. The Board also encourages business operation and governance to follow IRPC's code of conduct. To achieve this end, a sound and appropriate controlled environment should be set up as follows:

The Board, independent of the management, strictly steers business as a whole, provides viewpoints on corporate strategic directions to guide preparation of business plans and operating plans. The Board constantly monitors corporate and the sub-committee performance to ensure goal accomplishment. The Board and the Management cooperatively define a written policy on corporate governance along with a policy on compliance with relevant laws, regulations, internal control policy and anti-corruption guidelines. These elements, in turn, will frame the performance of the directors, the management and employees through the requirement that every employee are responsible for internal control. To achieve this objective, IRPC regularly informs and publicizes such policies to all related parties.

IRPC's corporate structure is in the form of business groups and functions for corporate management efficiency and unison, with segregation of duties in key functions for checks and balances. IRPC defines individual positions' qualifications to guide the selection and development of the workforce, specifies key succession plans and defines performance appraisal processes marked by high standards and reasonable systems so that rewarding will be fair and equitable and efficiently inspire employees. IRPC has actively implemented Three Lines of Defense, an internationally recognized approach. To elaborate this further, the first line consists of workers and their supervisors, the internal control unit and the compliance unit, the second line means other support units while the third line or Office of Corporate Internal Control consistently directs the operation, starting from risk assessment, specification of internal control activities, monitoring and evaluation. The first line plays a pivotal role in the success and efficiency of this approach.



## 2 Risk assessment

The Board and the management value the significance of risk management to boost confidence in steering the organization toward both short-term and long-term goals. Therefore, the Board appointed the Risk Management Committee (RMC) and the President will be accountable in appointing the Risk Management Steering Committee (RMSC) to move forward the Company's risk management policy in a suitable and effective manner and seriously implement risk management under the following approaches:

IRPC leverages risk management under ISO 31000 and COSO Enterprise Risk Management and defines risk management policy as its guidance to alleviate possible impacts on its goal achievement. IRPC's risk management consists of such management at the corporate level, the operating and work process level and the project level. The Company also takes into account possible internal and external factors as well as the likelihood of fraud and corruption. Risk management entails the formulation of risk management guidance and features processes designed to review risks and also consists of risk review and implementation process monitoring. All units are responsible for managing risks to an acceptable level. In addition, IRPC has applied Business Continuity Management (BCM) under the ISO 22301 international standard to its management when faced with emergencies and crises so that its business can continue uninterrupted, potential impacts can be alleviated and corporate reputation and image can be successfully maintained.

## 3 Control activities

IRPC has defined efficient and effective control activities to minimize the risk of not achieving its goals and objectives to be in an acceptable level by setting up controlling procedures which taking into consideration good internal control principles such as segregation of duties with applicable policies and guidelines for engaging in transactions with conflicts of interest or those with potential conflicts of interest, transaction engagement with transparency and transaction approval for IRPC's best interests. Furthermore, IRPC has established written policies, regulations and operation guidelines by clearly specifying the authority, duty and responsibility of executives and employees at every level while identifying operational steps to be employed as a guideline in its daily operation as well as regularly reviewing operation to be in line with prescribed regulations, policies, specifications and operation manual.

The Company has defined IT security control processes in conformity to ISO 27001 (information security management) to strengthen confidence in the efficiency and effectiveness of IRPC's IT system. In addition, CCMS (Continuous Control Monitoring System) has been applied to procurement and payment procedures by continually tracking and detecting irregular procurement and payment. CCMS correlates with the principle of segregation of duties and currently, this system is being developed in sales and payment processes which will be completed in 2018.

#### 4 Information and communication

IRPC values the quality of information and communication since they are critical in supporting the effectiveness of internal control system. The Company regularly communicates with the Board, the management, employees and stakeholders with regard to significant contents of the Company's operation result. Meeting documents will be sent to the Board prior to the meeting, so they can utilize such information to make proper decision.

IRPC has set up various channels for internal communication, consisting of Town Hall meeting between senior executives and employees the Company's intranet and electronic mail. The Company also implements channels to communicate with external stakeholders such as website, electronic mail and the Company's facebook page. Moreover, the unit directly responsible for disclosing information to stakeholders and complaint-handling unit have been established. The whistleblower system is clearly specified so that employees and external parties can be confident that complaints will be resolved in due time and in a transparent, straightforward, fair and confidential manner.

#### 5 Monitoring activities

IRPC has established monitoring and evaluation activities of its internal control system to ensure its efficiency and effectiveness. The Company requires executives of every level (first line) to monitor and follow-up the work process of their respective unit so that they will efficiently conform to the policies, requirements and strict regulations. Internal control and corporate risk management (second line) is responsible for reviewing the adequacy and suitability of the internal control system. If any defects are found, this second line is responsible for providing advice and recommendation in solving such defects. IRPC has instituted a process for promptly reporting any defects to executives and ensure effective and timely remedial actions.

The Office of Internal Audit (Third Line) an independent unit reporting directly to the Audit Committee, reviews and assesses the effectiveness of internal control of various activities under the audit plan approved by the Audit Committee. This plan follows IRPC's strategic directions as well as major risks affecting the business operation. The unit also provides recommendations to improve internal control efficiency and effectiveness by informing executives to take proper action. Lastly, the unit is responsible for reporting audit results to the Audit Committee as well as monitoring the progress or remedial actions until completion.



**Mr. Tevin Vonvanich**

Chairman

## Message from the Chairman, Risk Management Committee

Dear Shareholders,

IRPC Public Company (Limited) recognizes and highly values efficient and effective risk management across the organization to assure its stakeholders of its ability to achieve goals and the prevention and mitigation of potential losses under its business circumstances and uncertainty arising from business operation. The Board of Directors appointed the Risk Management Committee to specify policies and guidance in managing risks regarding business operation appropriately and effectively. The Risk Management Committee also defines risk management plans and procedures across the organization. The Risk Management Committee also approves the principles and financial tools regarding derivatives, including filtering and providing recommendations on risk management of investment project with technically complex nature that may incur long-term obligation. The current Committee is chaired by Mr. Nuttachat Charuchinda, with Mr. Chansin Treenuchakorn, Mr. Ekniti Nitithanprapas and Mr. Sukrit Surabotsopon as members. In 2017, these qualified and competent directors had held 4 meetings throughout the year.

Summary of the operation of the Risk Management Committee is as follows:

1. Steered and reviewed corporate risk management, consisting of identification, analysts and risk evaluation, specification of risk management measures as well as quarterly following-up and reviewing risk management result to keep risks manageable in an acceptable level, encompassing strategic risk, business risk and operational risk.
2. Provided recommendations and guidelines on risk management to the Risk Management Steering Committee that supervised and supported risk management in organizational level to comply with established policies and guidelines and the Supply Chain and Financial Risk Management Committee, responsible for monitoring and analyzing market situations, risk management in terms of price and amount of crude oil, raw materials, petroleum and petrochemical products as well as financial transactions to ensure efficient operation and risk minimization
3. Considered and provided opinions on operations that may incur risks, consisting of safety risk, occupational health risk, risks concerning environment and interrupted production process, community risk to ensure sufficient and appropriate measures in protecting lives, properties, IRPC's business as well as every stakeholder group.
4. Reviewed and commented on risk management of oil transportation between different oil reservoirs and the transportation of polypropylene to customers, including related risks to ensure safe, efficient and punctual transportation as specified.

5. Considered and provided opinions to the Risk Management Committee regarding major projects of IRPC such as PPE project, PPC project and the Everest project, including reviewed and followed up performance results of UHV project and other extended projects.

6. Considered and provided opinions on risk management of personnel development to be in line with IRPC's established strategies and objectives, including systematic succession plan that will not affect its business operation.

7. Provided opinions and recommendations on IRPC's business operation in response to the policies of public sector in promoting Eastern Economic Corridor (EEC) project with the purpose to follow up, be well prepared and search for business opportunity to respond with future growth of the organization.

8. Considered and provided opinions on risk management concerning the safety of IT system by setting up the Security Operation Center and created awareness among IRPC's personnel of safety use of IT while simultaneously preventing cyber attack of ever form.

9. Considered and commented on organizational risks 2018 before proposing for the Board's approval in which consideration on any risk items must be relevant to IRPC's business directions, strategies, objectives and changing environment.

10. Reviewed its own charter and added the mandate for screening significant investment projects that may incur high technical complexity, long-term obligation and other significant risks.

11. Reported its performance results for the Board's acknowledgement on a quarterly basis.

The Risk Management Committee executed its duties systematically, prudently and thoroughly with full competency, independence and alignment with corporate governance for the highest benefits of IRPC, shareholders and stakeholders.



**Mr. Nuttachat Charuchinda**

Chairman, Risk Management Committee



# Report of the Audit Committee

## Dear Shareholders,

IRPC's Audit Committee consists of three independent directors who are qualified and highly experienced in fields of the energy business, finance and accounting, and law. Chaired by Mr. Somnuk Bomrungsalee, it features Mr. Jessada Promjart and Ms. Ruenvadee Suwanmongkol as members. The year saw the resignation of the former chairman (Mr. Songpope Polachan), with effect from December 1, 2017. Board Meeting No. 11/2017 of November 21, 2017, appointed Mr. Somnuk Bomrungsalee as his replacement.

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

Meeting 11 times this year, the committee met with the management, internal auditors, and the external auditor on relevant items. The committee's performance this year is highlighted below.

### 1 Review of financial reports:

The committee reviewed material data of quarterly and annual financial statements by inviting the 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 in the statements, and the auditor's observation. The committee concluded that these financial statements showed essentially correct entries under financial reporting standards.

The committee also held an exclusive meeting with the 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 expressed views. Priority was given to the presentation of key audit matters (KAM),

### 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) were set to track changes in various risk factors. Additional measures were defined to efficiently and promptly address changes. The Board appointed the Risk Management Committee to steer IRPC's 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 IRPC's 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 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 helps the Office of Corporate Internal Audit constantly audit work. The Procure to Pay process was first used in 2017, whereas the Order to Cash process was under development, with completion set for 2018.

In addition, the committee agreed to launch a project on the assessment of internal audit quality by a third-party assessor. Besides such assessment, the objective was to recommend quality improvement approaches based on the International Standards for the Professional Practice of Internal Auditing and good practices. It was found that most of IRPC's current practices were up to standard and no non-compliance significantly affected internal audit work.

#### 5 Review of corporate governance:

The committee focused on ensuring business performance under a sound code of conduct. 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 compliance with corporate governance; and ensured complete information disclosure under SET's requirements. Finally, the committee advocated to IRPC and its affiliates membership of CAC (Collective Action Coalition against Corruption) of the Anti-Corruption Organization of Thailand.

#### 6 Review of compliance:

By reviewing IRPC's compliance with securities and exchange laws, SET 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 IRPC Audit Committee Charter:

The committee endorsed amendment of the charter's contents in line with the international standard on professional internal audit. The internal auditors were to adopt this guideline with effect from October 9, 2017.

#### 8 Recommendation of the external auditor for 2017:

The committee reviewed, selected, nominated, and proposed fees for IRPC's external auditor that is independent by reviewing its qualifications, caliber, and professional skills. This year it nominated as the external auditor Deloitte Touche Tohmatsu Jaiyos Ltd. for the Board's endorsement and the shareholders' approval.

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 legitimate 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, Nomination and Remuneration Committee

Dear Shareholders,

This year, the Nomination and Remuneration Committee is led by (1) Mr. Woothisarn Tanchai (Independent Director acting as the Chairman), (2) Mr. Chavalit Punthong and (3) Miss Nuntika Tungsapanich as members (appointed on December 2, 2017). The Committee realizes its roles, duties and responsibilities while appropriately and fairly valuing the best interests of shareholders and stakeholders in relevant to corporate governance with excellence practice based on international standard as well as new CG Code, announced by SET on March 17, 2017 as a guideline for the Nomination and Remuneration Committee to be apply to suit its business with the objective to create sustainable value to its business as intended by business operation, investors, the capital market, public sector and society in general.

In 2017, the Nomination and Remuneration Committee organized 6 meetings in total and also set up its charter by adhering to recommendations and guidelines of IOD, coupled with new CG Code. The Committee agreed that the nomination of directors who possessed high qualification and good governance is a major factor influencing effectiveness and efficiency of IRPC's sustainable growth and result in personnel's performance at every level to move forward in the same direction based on corporate governance, direction with responsibility towards society, environment and stakeholders.

In fulfilling its 2 major missions; namely, the nomination of directors and the sub-committee as well as the specification of remuneration of directors and the President in 2017, the Committee performed such duty with careful consideration and with complete information as a reference for decision making to propose to the Board for their approval. The Board approved and accepted agenda items as proposed by the Nomination and Remuneration Committee as reported to shareholders via SET channels throughout the year.

In reviewing the compensation of directors, the Nomination and Remuneration Committee considered the best interests of shareholders in an appropriate proportion and employed such factor in determining the compensation of its directors. The Committee proposed the previous compensation rate approved by the shareholders since 2006. The specification of compensation components and objectives of performance assessment of the President, the Committee applied all factors with fairness in setting an overall performance based on corporate KPI at 70 percent. Factors supporting sustainable growth of IRPC include responsibility towards society and community, transparent operation leadership and ability to cope and resolve various problems of the organization with fairness which in turn will have a positive impact on IRPC's image and the credibility of every group of stakeholders.

In 2018, the Nomination and Remuneration Committee plans to develop guidelines on specifying compensation with highest benefits to IRPC, shareholders and stakeholders. The Committee will remain committed to performing its tasks transparently with full efficiency for the organization's sustainable development.



**Mr. Woothisarn Tanchai**

Chairman, the Nomination  
and Remuneration Committee

## Message from the Chairman, Corporate Governance Committee

Dear Shareholders,

In supervising IRPC Plc's business, the Corporate Governance Committee applied SEC's modified Corporate Governance Code (CG Code), seen as suitable for the corporation's business context, for maximum efficiency. Quarterly monitoring is done to review and intensify corporate governance practices at IRPC; this committee reports the outcomes to the Board of Directors. A five-year CG roadmap compatible with IRPC's vision and strategies is in place. Major policies and operating plans for this year were laid out in advance, equipped with Board concurrence. The committee also prudently reviewed risks concerning its CG image and reputation before identifying accommodating measures. Finally, IRPC has allocated suitable resources and supports essential activities, valuing innovations and technology promoting socio-environmental responsibility. Below are the highlights of CG performance this year.

Upgrading of directors' roles and responsibilities: The Board received a briefing on "CG Code 2017", designed for new listed companies, and applicable laws on Board responsibility, aimed to stress their awareness and understanding of their proper roles and responsibilities. Director training was staged on directors' and the management's duties under a new law on market misconduct, civil penalty, and class action. Also, directors were encouraged to individually attend IOD's training courses. Orientation was provided for incoming directors, who received adequate information for their job performance. And finally, the Board endorsed this committee's charter as well as that of the Nomination and Remuneration Committee, both revisions with wider scopes of mission.

Policy and activities promoting good governance and sustainable growth: The Board defined a global corporate citizen policy under UNGC's guidelines together with a human rights policy on business conduct. In March, IRPC won its second CAC certification renewal; another IRPC Group company earned its inaugural CAC membership this year. Concerning compliance, IRPC completed its Corporate Compliance Framework and began staging its workshop for the first group of executives and staff whose jobs closely involved assorted regulations, including financial units and oil market units. Finally, this committee updated its CG manual in line with CG Code 2017 and emerging Board-defined policies.

Stakeholder stewardship: IRPC thoroughly preserves shareholders' lawful rights while treating shareholders equitably by disclosing its information clearly, transparently, and regularly through its communication channels and SET's venues. Through the year, its executives provided information to the public and investors in general through the mass media and analyst meetings. As for other stakeholders, IRPC ensured that they duly benefit, fostered good relations with them, and established networks of participation with a commitment to good governance and responsibility to communities, society, and the environment. In addition, IRPC promotes employees' CG awareness and volunteering spirit for public service, with directors and executives providing role models.

The Corporate Governance Committee is determined to foster strong work ethics among IRPC's executives and employees under everyone's cooperative spirit, which would automatically give IRPC an image of trustworthiness and acceptability from all stakeholders. For then it could achieve business goals in parallel with the balanced stewardship of communities and society-including the goal of being a good global corporate citizen.



**Mr. Anusorn Sangnimnuan**

Chairman, Corporate Governance Committee



## Corporate Governance Report

The Board of IRPC Public Company (Limited) has constantly valued good corporate governance and strives to operate its business with transparency which can be inspected as well as adhering to the intention to create value for every stakeholder group, together with the Company's growth while elevating people's quality of life, including that of society and environment. In 2017, IRPC was awarded an Honorable Mention Award of transparent organization category 2017 from the Office of the National Anti-Corruption Commission (NACC) for 2 consecutive years and was rated at an "excellent level" with the score of 96/100 in an evaluation of survey project for CGR in 2017, presented by Thai Institute of Directors (IOD), which was considered higher than the scores of 2015 and 2016 with 92 and 94 scores respectively. Apart from corporate governance awards, IRPC also emphasizes on sustainable performance results, anti-corruption, social and environmental responsibility as prescribed by national and international standards. Details can be seen in the award and success section on page 14-17.



In 2017, the Board of Directors employed good corporate governance of SET 2017 (CG Code) as performance guidelines in parallel with 5 sections of CG Code and reported directly to shareholders on an annual basis. Consequently, this CG report 2017 has explained performance results based on new CG Code and 5 sections of CG guidelines.

### Corporate Governance based on CG Code 2017 of SET

The Board of Directors realize that the significance of an ability to adapt amidst different changes in the business world and petrochemical industry by adhering to business ethics and social responsibility that ultimately enable long-term



competitiveness of IRPC. The Board has adapted CG Code 2017 prescribed by SET as guidelines for monitoring, following up, revising and improving the operation of the Board and the management in which “Board That Makes a Different” strategy was efficiently and concretely put in place. Major operations in 2017 can be summarized below:

- **Recognition of roles and responsibility of the Board as the leader of an organization that creates sustainable business value**

The Board organized meetings as planned in 2017 for the total of 12 meetings. Directors attended the meetings at the average of 96 percent throughout the year and performed their duty with full responsibility and capability. Directors studied information relating to meeting agendas proposed by the management in advance. During meeting sessions, directors expressed their opinions independently and also took part in consulting, analyzing, exchanging ideas as well as inquiring the management with different perspectives of knowledge and experience until no further questions are left to be asked and sufficient information derived before voting. Besides, the Board fostered a good relation with the management and expressed their leadership by providing recommendations and support

the management in solving operation problems of IRPC such as problems relating to the community's complaint in which the directors visited the problem area in Rayong province to participate in the community activities, to acknowledge the true condition of the problem while expressing their sincerity and intention to help solve such problem and also encouraged the community's involvement. The Board strongly realizes the significance of the issues in question, whether money is involved or not, including other issues affecting IRPC's reputation and image, the stakeholders' trust and confidence and factors having an impact on corporate governance and environment. In considering meeting agendas and specifying important policies, the Board must ensure that they can appropriately respond to the objective of value creation of IRPC and the business operation must conform to the strategic plan established by the Board. If any changes do occur, explicable reasons and necessities for an overall success of the entire organization.

- **Promotion of innovation and responsible business operation**

In specifying important business policies and the approval of investment plans, IRPC strives to utilize its assets for highest efficiency as well as investments in



Board of Directors visited "Model Plant" a part of EVEREST Project's success, which was the improvement of planning tools and process for higher efficiency.

the new asset which create added value to its business and maintain quality of the environment; for example, the investment on product transformation for use as raw materials of petrochemical purpose that yields higher ROI such as UHV project and PPE/PPC project, the investment on research and development of catalyst to extend the product's life cycle and minimize costs. In addition, the Everest project was established with the purpose to increase production and maintenance efficiency, production planning, procurement of raw materials and equipment as well as personnel development that ultimately create higher revenues and benefits as intended while continued projects have been set up to maintain such strength.

The Board values innovation while elevating the importance of research and development center and allocating appropriate budgets to this center at the amount comparable to other leading industries. IRPC also aspires for an invention of high-quality products which help reduce environmental impact to the lowest level as well as minimizing the consumption of natural resources both in terms of materials and energy employed in the manufacturing process.

- **Maintenance of financial credibility and information disclosure**

As for fund raising activities for investments in various projects, the Board will consider factors as prescribed by law and will maintain its financial credibility, financial proportion as referred from standard practice accepted by leading companies and credit rating institutions in an international arena. IRPC has meticulously specified its filtering procedures such as marketing risk, world's economy, financial market, exchange rate, interest rate etc.

- **Specification of goals and objectives of the business for sustainability (society and environment)**

The Board cooperatively prepares an annual STS to identify long-term business path of the organization and to build a strong foundation to respond to changing situations whether they will be risks or business opportunities that might come in different types. Apart from the financial perspective, IRPC also emphasizes on three other dimensions promoting sustainable growth and development; namely, stakeholders' perspective, internal process perspective and learning

& growth perspective.

IRPC realizes the importance of the quality of life of employees, community and overall society, both inside its facilities and surrounding areas of its business operation. IRPC also specifies a high level of safety, sanitation and environmental standard as required by law. IRPC has also established OEMS to achieve its desired objective as an entrepreneur with excellence on operation, ethics, social and environmental responsibility and good corporate citizen. IRPC has consistently participated in various activities aiming at sustainable development in line with SDGs17 and developed IRPC to be acceptable and become one member of DJSI in emerging markets group of oil and gas industry for 4 consecutive years. IRPC also participated in UNGC and was a founding member of GCNT that constantly strives to create a quality society based on 4 dimensions of an agreement with UNGC, especially in the area of ethical business operation, solid anti-corruption policies and guidelines while simultaneously participating in an expansion of anti-corruption network with the society. In 2017, IRPC had implemented human rights policy and promoted such campaign alongside the environment in the project concerning responsible plastic consumption with its shareholders during shareholders' business visit 2017 in Na Klue community, Pattaya in "Doen Kin Tin Na Klue" etc.

- **Supervision of appropriate risk management and internal control systems**

The preparation of strategic plan shall be scrutinized relevant to brainstorming procedures and risk evaluation, including sufficiency of internal control, risk management plan and Business Continuity Management (BCM) plans to ensure that IRPC has been efficiently prepared for different circumstances. Afterwards, the President and senior executives (not the same person as the Chairman) shall accept clear strategy, objectives and indicators of which the results can be concretely evaluated. Objectives, indicators and evaluation criteria of senior executives' performance shall also be specified for effective synchronization to support an overall operation to achieve its mission and to fairly evaluate performance and remuneration.

The budgeting system and information technology





for business operation such as purchasing system, accounting, finance and budget, fast CCMS system with real-time inspection of every step can be employed in monitoring, following up and reviewing performance results for the highest benefits of every related business partners in the supply chain. In addition, performance results will be reported to the sub-committee and the Board at the appropriate deadline which suits the type of operation to be responsive to a specific situation in case any revision or improvement is necessary. Furthermore, the specification of policies, monitoring of the Company's subsidiaries, including other businesses IRPC has invested shall be in compliance with guidelines defined by the Board and must be approved by the director of any authorized individual identified by the Board and also indicated in CG Code. The Board shall specify report on performance progress on a regular basis and at appropriate time to revise operation plan in due time.

- **Support of participation and communication with shareholders**

IRPC strongly adheres to SET's regulations. Information disclosure in terms of performance results, progress or any events of the Company will be proceeded with great care and caution. Information disclosure must be performed via SET Portal in a suitable timing for shareholders. Meeting with analysts, institutional investors, media and other relevant individuals must be appropriately executed. In addition, IRPC has regularly participated in various activities

with SET in order to foster growth and confidence of the capital market and economic system of the country.

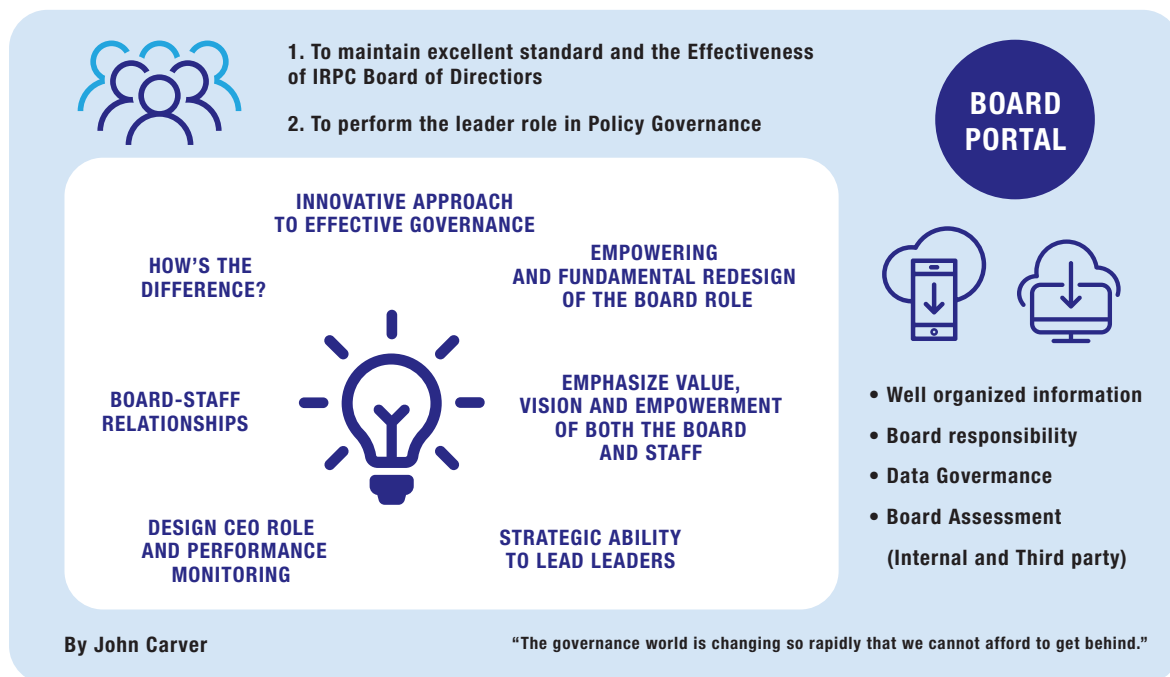
- **Selection and development of senior executives and personnel management**

IRPC realizes the importance of human resource management; therefore, the Company has established a systematic administration policy which is fair, equitable and comparable to other leading international industries. IRPC also stresses on developing efficiency, fostering corporate culture by instilling what is called "IRPC DNA" to build employees to become a major driving force of IRPC in the long run. IRPC also set up the talent management and succession plan as well as develop its personnel with PTT to broaden the executives' vision.

- **Strengthening the effective Board**

The Nomination and Remuneration Committee is responsible for nominating directors as obliged by its charter to appoint directors with appropriate qualification, knowledge and experience (Board Matrix) which, in turn, will facilitate performance integration more efficiently and effectively, achieve defined objectives, respect human rights and no discrimination owing to differences. Throughout 2017, the Board's performance evidently illustrates their responsibility and dedication by regularly attending the Board's meetings (information of the Board's meetings). During meeting, the Board can freely express their opinions while striving to foster good relationship with the management. The Board possesses different perspectives of knowledge, experience and

## BOARD THAT MAKES A DIFFERENCE



qualification while retaining necessary business elements of large companies. Every sub-committee shall perform self-evaluation annually for future improvement. In 2017, IRPC organized a training program and seminar for the Board under the topic of "Duties of directors and executives" within new legal principle regarding market misconduct, civil penalty, class action, presented by IOD's speaker and held on September 19, 2017 before the Board's meeting took place. In addition, there were 3 directors attending "Board's Role in Strategic Leadership", hosted by IOD.

The Board received adequate information for the meeting and other necessary information through "IRPC Board Portal Website"

The President possesses solid knowledge, expertise and experiences accepted in the petroleum and petrochemical industry, coupled with a broad vision and strong leadership skill, well qualified to move the organization towards its growth and development. The President is also the Chairman of Thailand's Petroleum Refining Industry.

The Board agreed to revise the company's charter for two sub-committees; namely, the Nomination and Remuneration Committee and the Corporate Governance

Committee to encompass broader missions, to enhance effectiveness of directors' operation to be in line with the business type as well as be compatible with SET's guidelines and international standard.

The Company Secretary is appointed by the Board. He/she shall possess knowledge, expertise, experience and qualifications that can support necessary information to the Board in an efficient and satisfactory manner. (Details shown in "Management Team" page 46).

### Activities and good corporate governance operations of IRPC in 2017

The Board has consistently monitored the Company to perform its business in conformity to good corporate governance which can be summarized as follows:

#### 1 Shareholders' rights

The Company realizes that shareholders are the owner of IRPC; therefore, the Company has granted them with all aspects of rights as prescribed by law and IRPC's regulations; for example, right in attending the shareholders' meeting, right to express their opinion, voting right, right to propose the meeting agenda



before the actual meeting date, right to nominate or remove any directors, right to consider remuneration for directors and auditor, right to consider the sharing proportion of benefits/ dividends and right to access adequate and complete information via different channels to facilitate the shareholders' decision making.

#### **AGM with shareholders**

IRPC has specified an annual AGM with shareholders within 4 months from the end of the accounting year of the Company and in case when any emergency arises that it requires the resolution or when such urgent matters may affect interests of shareholders or related to conditions or regulations prescribed laws that require the shareholders' approval. The Company will arrange for extraordinary shareholders' meeting on a case by case basis. In 2017, the AGM date was April 4, 2017.

#### **Before the Meeting**

The right in attending the 2017 AGM and the right in receiving dividend must be in compliance with the Securities and Exchange Act B.E.2535. IRPC will communicate and publicize details of the 2017 meeting via IRPC newsletter, issue no.23/2017, Thai version with translation. Such newsletter will be delivered to every shareholder, coupled with the meeting invitation as well as encouraging shareholders and institutional investors to attend the AGM to exercise their rights and to be informed of the Company's performance directly from the Board of Directors.

February 14, 2017

- The Board's resolution on the record date is March 1, 2017 and the 2017 AGM will be held on April 4, 2017.

- The Company will inform the Board via information dissemination system of SET as well as the Company's website.

February 24, 2017

- The closing date of registration book to compile lists of shareholders who are entitled to attend the meeting and receive dividend.

March 1, 2017

- Date specified the right to attend the 2017 AGM and right to receive dividend (record date)

March 3, 2017

- Submit the complete version of meeting invitation, including meeting-related documents, both Thai and English on [www.irpc.co.th](http://www.irpc.co.th) 30 days prior to the meeting

March 13, 2017

- Mail the meeting invitation to shareholders (via registered mail), performed by TSD 21 days prior to the meeting

March 20-22, 2017

- Publicize details of the 2017 AGM via daily newspaper, both Thai and English (stock newspaper and the Bangkok Post) for 3 consecutive days prior to the meeting

April 4, 2017

- The 2017 AGM will be held at 9.30 hours at Bangkok Convention Center, 22nd floor, Centara Grand Hotel and Bangkok Convention Center, Central World, 999/99 Rama I Road, Pathumwan district, Bangkok 10300

- IRPC gives the right to every shareholder with a combined 4 percent or more, higher than 5 percent prescribed by law, to propose agenda items for the 2017 AGM and nominate directors in advance during September 20, 2016 and January 31, 2017. Nonetheless, no additional agenda items nor nomination of directors was proposed in the 2017 AGM in advance.

- As for the quality of the meeting invitation, IRPC had clearly specified 7 agenda items for the 2017 AGM (there were no agenda items for adoption of the minutes of the previous meeting since IRPC had sent them to the shareholders on April 20, 2016 – May 31, 2016 for their review, objection or amendment. No shareholders had objected to the meeting minutes; therefore, they were automatically adopted). For each agenda item, reasons and opinions of the Board were stated as explained below:

- Acknowledgement of the 2016 performance and approval of IRPC's 2016 financial statements had been audited and certified with no further conditions by an authorized external auditor (page 2)
- Approval of dividend payment for the 2016 performance. IRPC disclosed its dividend payment policy and successfully maintained



suitable financial liquidity in line with its business operation, with categories and sources of retained earnings from which the dividends to be paid, proposed dividend rate, dividend payment date complete with clear rationale and data for consideration. Details have been clearly highlighted on pages 2-3 of the 2017 AGM meeting invitation.

- Appointment of directors to replace those who completed their terms. IRPC provided directors with complete information encompassing name-last name, age, education background, work experience and previous positions of each director to be appointed so that the shareholders would have sufficient information for their consideration. Details are further explained on pages 16-27 of the 2017 AGM meeting invitation.
- Specification of directors' compensation for 2017. IRPC proposed a policy for directors' compensation; namely, retention fees, meeting fees and bonuses. Besides, no other compensations or benefits had been given to directors. Details are explained on pages 7-8 of the 2017 AGM meeting invitation.
- Appointment of the external auditor for 2017. IRPC stated details and information of an external auditor such as the auditor's name,

company, experience and expertise, including other issues regarding his/her independence, audit fees and non-audit fees together with other services provided. Details were given in full and clearly on pages 8-9 of the 2017 AGM meeting invitation.

#### Meeting day

- IRPC's 2017 AGM was held on April 4, 2017 at 09.30 hours at the Bangkok Convention Center, 22nd floor, Centara Grand Hotel and Bangkok Convention Center, Central World, no.999/99 Rama I Road, Pathumwan district, Bangkok 10330, under the "Green Meeting" concept to keep up with the standard certified by Thailand Business Council for Sustainable Development (TBCSD) and Thailand Environment Institute (TEI) for 5 consecutive years.
- The meeting was held at a convenient meeting venue for public transport (BTS and buses) with spacious parking lots and efficient security system, including officers who will attend to help with any inquiries and registration. Sufficient registration points were also arranged, with registration process starting 2 hours prior to the meeting of which the shareholders were informed in the meeting invitation. The barcode system was leveraged during registration and vote-counting procedures for higher efficiency, accuracy and speed. In addition, IRPC facilitated

proxy-giving by making free duty stamps available for legal completeness of all documents. IRPC also organized an exhibition near AGM meeting rooms which consists of the following:

- Exhibitions regarding work plans and significant operations of IRPC such as:
  - The progress and performance outcome of the Everest Project
  - IRPC's role as a good corporate citizenship in operating its business in compliance with SDGs 17
  - An establishment of Global Compact Network Thailand in cooperation with 15 leading organizations in Thailand
- IRPC Innovation Product Bazaar was introduced to provide a channel for manufacturers, one of IRPC's customers, to meet directly with customers and to offer them with special price products such as luggage made of green ABS with natural rubber or plastic boxes using natural colors from fruits and vegetables for maximum safety etc.
- Booths to introduce foundations and social organizations which are IRPC's alliances (for example, Pediatric Cardiac Surgery Foundation and Her Royal Highness the Princess Mother's Prostheses Foundation) and to encourage IRPC's shareholders to donate and present their kindness to other disabled or underprivileged persons in order to improve their quality of life.
- IRPC realizes the importance of AGM; thus, the meeting began as scheduled with the Chairman of the Board served as the Chairman of the meeting. In attendance were the sub-committee chairs, directors and the President, together with senior executives and the Company Secretary. (complete details of the meeting were record in the AGM minutes and disclosed on IRPC's website). A total of 15 directors or 100 percent of the Board attended the meeting.
- IRPC requested an independent legal advisor from Weerawong Chinnawat and Partners Company Limited (Ms.Phiangphanor Boonklum and company) to ensure that the AGM was legitimate and provide legal information as needed. The external auditor attending the AGM 2017 was Mr.Wichien Kingmontree, CPA no.3977, Pricewaterhouse



Coopers ABS (PWC). IRPC also arranged for verifiers to verify the votes and serve as a neutral party in vote tallying, namely Miss Pranisa Suksomboon and Miss Woraporn Porapaskham, volunteer from the shareholders in attendance.

- Before starting the meeting agenda, the Chairman clearly informed the meeting about voting method and vote tallying. IRPC issued only one class of shares in which one share equals one vote.

- On the agenda of directors' appointment, IRPC allowed the shareholders to vote for directors individually with an individual name on the ballot. Directors with vested interests would leave the meeting on the agenda items in question. For this meeting, five directors with vested interests; namely, Mr. Somnuk Bomrungsalee, Mr. Ekniti Nitithanprapas, Mr. Anusorn Sangnimnuan, Mr. Jessada Promchart and Mr. Woothisan Tanchai left the meeting room until deliberation and voting were completed.

- During the meeting, the Chairman allowed the shareholders to exercise equal rights in asking questions or giving comments at the AGM while allocating sufficient time and asking related directors to provide them relevant data until no further questions were asked. IRPC arranged for ballot casting and ensured that all ballots were collected and inspected the voting results and recording of votes from the ballots. To achieve higher efficiency and speed, the barcode system was employed

to record and calculate voting results. Meeting resolutions were announced clearly for each and every agenda item, together with the numbers of yes, no or abstained votes which would be displayed on the projector for clarification.

- The Chairman strictly conducted the meeting based on the sequence given in the meeting invitation. No other agenda items were added apart from the topics listed in the meeting invitation.

#### **After the meeting**

- IRPC disclosed the resolutions of the 2017 AGM for each agenda item both in Thai and English via IRPC's website and SET Portal on the meeting date (April 4, 2017) after the meeting was completed.

- As for the quality of meeting minutes, IRPC recorded complete meeting minutes which include contents of the meeting, lists of directors and senior executives attended the meeting, questions of shareholders as well as clarifications of directors and executives on each question, meeting resolution and voting results for each agenda item, complete with details of yes, no and abstained votes on each voting agenda item.

- IRPC made available the minutes of 2017 AGM on SET's and IRPC's website on April 18, 2017 (14 days after the meeting). IRPC newsletter, special issue, volume 23/2017 was published and mailed to every shareholder on April 24, 2017 and also notifying them to forward any amendment or disagreement points to the Company Secretary by May 31, 2017. At the end of such period, if no shareholder objected the meeting minutes; therefore, such meetings were considered final.

## **2 Equitable treatment of shareholders**

IRPC pledges equitable treatment of all shareholders together with strict compliance with corporate governance principles. The 2017 business operation can be summarized below:

- IRPC issued only one class of shares
- IRPC provided the opportunity for one or more shareholders with a combined 4 percent or more of the eligible voting shares to propose agenda items and nominate directors in advance from September

20, 2016 to January 31, 2017. IRPC also publicized clear criteria and procedures on its website and notified shareholders via SET's news channel.

- IRPC disseminated meeting documents on its website both in Thai and English 30 days prior to the meeting date and mailed these documents to all shareholders 21 days in advance (March 13, 2017).

- In case any shareholders could not attend the meeting, IRPC would facilitate by sending proxy forms (Form A and Form B) together with the meeting invitation to such shareholders. The form would state the documents, evidence, advice and proxy procedures to accommodate the shareholders in their preparation and their proxy in attending the meeting. Shareholders could assign the proxy to attend the meeting and vote on their behalf under one share per vote by filling the proxy form as explained in detail and without complicated criteria in the proxy procedure. In addition, the shareholders could download the proxy forms, form A, form B and form C from IRPC's website. Nonetheless, IRPC submitted the names of the independent directors who had no vested interests in the meeting as proxies for shareholders, namely (1) Mr. Songpope Polachan and (2) Mr. Pramual Chanpong

- IRPC established a policy of no trading of securities 45 days ahead of the disclosure of financial statements and 2 days after such disclosure. IRPC would ensure that directors and executives would strictly comply to SEC's criteria.

- IRPC set up a written policy and guidelines to keep and prevent the use of inside information and notified all employees to strictly conform to. Directors and executives were legally responsible for reporting portfolios and regularly submitting a report to directors for acknowledgement. In 2017, IRPC's directors and executives were not reproached or warned by SET on selling shares by employing inside information.

- IRPC prepared a report of security holding by directors and executives and also specified that directors and executives must accurately and completely comply with SET's and SEC's rules and regulations. IRPC submitted this report to the Board for acknowledgement on a monthly basis. IRPC has never received such warning from the regulatory body.



- In 2017, the Board together held no more than 25 percent of IRPC's issued and paid-up shares, with a total shareholding of 0.04185 percent (as of December 31, 2017)

- According to SET's criteria, such transactions were not normal business and procured with comparison with other companies. The Audit Committee must screen them before submitting them to the Board for transparency and fairness to all relevant parties. The Board approved related transactions by taking into consideration the best interests of IRPC and transparently reported/ disclosed such transactions as prescribed by SET's regulations in an annual financial report. (Details shown in "Connected Transaction" page 139)

- When directors change or assume new positions, the latest information must be submitted to SEC for acknowledgement.

- IRPC had not provided any financial assistance to companies that were not its subsidiaries. There was neither cross-sharing in IRPC's group nor share repurchasing.

- IRPC stipulated that all executives and employees, including those of its subsidiaries must report every transaction of possible conflicts of interest with IRPC via on-line system for 3 consecutive years, apart from the report made by directors and executives as specified by SEC. This report is to raise awareness of transparent, fraud-free operation which must be submitted to the Corporate Governance Committee.

### 3 Roles of stakeholders

IRPC values the rights of all stakeholders by clearly specifying policies and treatment guidelines for each stakeholder group in its corporate governance handbook and considered them as part of IRPC's strategic plan and operation. IRPC has determined KPI to facilitate clear evaluation and performance assessment. Every stakeholder will be fairly and equally protected whether they will be employees, executives of IRPC and its subsidiaries, including external stakeholders.

#### Treatment of stakeholders will be described below:

##### Shareholders/ investors

IRPC is committed to perform its business operation which results in good performance, steady growth, competitiveness by taking into account major risks on current and future business to increase long-term value for shareholders. Consequently, IRPC is responsible for disclosing information by adhering to transparency and fairness while forging good relationship and focusing on communication with shareholders/ investors via numerous channels and activities such as:

- Arrange shareholders' visit of IRPC's business operation in Rayong province on November 16, 2017. On this occasion, IRPC together with the shareholders, organized an activity to instill knowledge to children in Rayong province by giving the signboard to encourage







*Analyst Plant visit to RDCC Plant.*

the use of plastic with responsibility and social conservation to schools attending the project, consisting of students from 15 schools (5 districts) located near IRPC's facilities; namely, Wat Tapong Nok School, Wat Yaida School, Wat Chang Chin Sirirat Bumrung School, Baan Nern Sao Tong School, Wat Baan Don School, Baan Nong Jok School, Wat Koh Kloi School, Wat Pluak Kade School, Wat Baan Laeng Community School, Ta Krao Thong School, Wat Natakwan School, Baan Chawuek School, Baan Kao Wang Marn School, Wat Nam Korn School and Satit Municipal Rayong School.

- Communication via printed media, radio, television, on-line activities with stakeholders and other public relations channels such as quarterly newsletters to keep shareholders informed of IRPC's operations and major activities.

- Arrange regular meetings with investors and analysts in Thailand and abroad (more details will be described in information disclosure and transparency section).

- Information disclosure to the public via news conferences and various media channels throughout the year.

- IRPC prepared an integrated report in conformity to <IR> framework which focuses on the treatment of stakeholders. The report was easy to understand and suitable for communication with extensive target groups and publicized on IRPC's website.

#### **Customers/consumers**

IRPC believes that customers' satisfaction and confidence are very crucial. IRPC; therefore, committed to offering products with quality and safety through innovations to develop excellent and environmental friendly products based on international standards. IRPC is also committed to disclosing marketing information to its entirety with accuracy and completeness without covering or distorting facts as well as to develop efficient information technology in responding to the requirement of customers in a timely manner. IRPC's IT system helps facilitate the management of the entire chain of data from purchasing and placement of order, payment, work order monitoring to product delivery. IRPC also provides consultation, recommendation, technical solutions as well as organizing customer relation activities. Details are listed in "Market Situation and outlook" page 135.

### Business partners

IRPC treats every business partners with equality and fairness which is in line with honest and transparent business competition while taking into account mutual benefits, developing and maintaining sustainable relationship, confidence and trust with its business partners. IRPC also adheres to procurement excellence policy under the Everest Project in which the Company's consultant has applied the best practice within the organization on the treatment of business partners as required by law and procurement contracts that are in compliance with the standards recognized by leading industries. IRPC is strongly committed to anti-corruption policy, money-laundering by registering approved vendors, manufacturers and a contractor list with efficient, accountable procurement and Procurement Web Portal which is the channel for communicating information and news regarding procurement such as bidding, e-sourcing (RFP, RFS), evaluation (AVL, ACL) which will facilitate business partners in terms of convenience, speed, transparency and accountability in all procedures. IRPC also organizes activities to foster good relationship with business partners. Activities will be described below:

- IRPC invited 19 business partners to attend "PTT Group CG Day 2017", hosted by PTT Group to promote its business partners to acknowledge, be informed and conform to IRPC's operation guidelines pertinent to corporate governance, business ethics and anti-corruption policy.
- IRPC organized "Supplier Recognition & Appreciation Day 2017" to express its sincere gratitude to business partners and contractors, considered as an important part of the overall success of IRPC's Annual Maintenance 2017 activity. On this occasion, IRPC granted an honorable reward to business partners and contractors who passed an evaluation test based on environmental, social and corporate governance criteria (ESG), including those who value sustainable operation. On this day, IRPC also communicated significant information regarding business ethics, human rights policy, labor rights policy and guidelines on safety, occupational health and environmental responsibility for strict compliance of business partners and contractors.
- IRPC arranged a training session on the evaluation of business partners based on ESG criteria.

IRPC selected major business partners to participate in such training by allowing them to complete self-assessment test by themselves for better understanding before an on-site audit takes place. This training is considered part of a cooperation between PTT Group companies with the purpose of sharing information and inspecting their major business partners in the area of environment, society and CG which will ultimately minimize IRPC's operation expenditures as well as strengthen good relationship with these business partners for sustainable growth and development.

### 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 has set up a policy and practices regarding treatment of creditors, especially guarantee conditions, capital management as well as establishing policy regarding non-compliance of contracts by strictly complying to contracts under creditors' stipulations.

### Employees

IRPC realizes the importance of equitable treatment of all employees regardless of their gender, nationality, race, religion or belief. The employees are considered as a major driving force of the organization to achieve its business success. Therefore, IRPC promotes continuous development of employee's skill and expertise under the project called the "Everest" to ensure that its employees are well-equipped with potentials comparable to other leading companies in the same industry. IRPC has specified suitable and fair compensation and welfare to retain high quality employees in the long run. In addition, IRPC has consistently fostered a favorable and pleasant workplace and environment by focusing on employees' right, safety and occupational health across the organization. IRPC also respects employees' personal rights by developing numerous methods as follows:



- IRPC conducts an annual survey of employees' engagement. Survey results will be used to formulate work plans across the organization to increase employees' engagement with the organization through activities and continuous work plans and incorporates into KPIs of the executives. From the survey in 2017, IRPC was ranked in the first quartile. Further details will be in the report of Human Resources Administration on page 168-170.

- IRPC sets up performance management system (PMS) of employees with specific sets of KPIs for equitable performance evaluation. A salary structure comparable to other companies in the same industry to retain quality employees. IRPC has specified promotion criteria which are fair and explicable to everyone alike, with specific sets of knowledge and capability for each job which can be used to design proper training and development programs for each employee.

- Knowledge and capability development
  - Identify human resource policies and guidelines by systematically developing the handbook of "Human Resource Management Policies and Guidelines" in a written form to communicate to employees for their acknowledgement and better understanding of policies, procedures and regulations including employees' remunerations.
  - Develop training and development policies for employees through "Handbook of learning and development" to be employed as a tool

and guidance in managing employees' development. IRPC has identified criteria and standards for its training needs for every employees and executive which comprise of 4 main categories which are management, safety & environment, quality & productivity and technical, including courses in business code of conduct and anti-corruption policy. Moreover, IRPC had encouraged supervisors and employees to jointly prepare individual development plans (IDP) to fit individual needs for development. IRPC has set average training hours per employee per year for each level and also discloses such statistic in its SD report.

- Communication and activities with employees
  - IRPC has implemented the communication system in both forms of "top down" and "bottom up". The meeting of Management Committee is held weekly while that of the Vice-President level is held on a monthly basis. Moreover, "The President Townhall" activities will be held quarterly and whenever any critical need for communication arises. The objectives of such activities are to communicate operational results, policies as well as IRPC's directions to employees while allowing them to ask questions and exchange opinions. The activity is held in a conference room with video broadcast to cover all office areas for two-way communication via IRPC's



intranet. Besides, Employees Committee is another forum where employees can systematically communicate their request or requirements in which the President acts as the chairman of such meeting.

- With full attention on the rights and benefits of all employees, the President always chairs the Employees Committee to efficiently develop resolutions agreed by both employer and employees in a timely manner. IRPC also supports various activities of IRPC's 8 labour unions.
- The President, executives and employees have attended an annual retirement party to honor and encourage employees who have devoted themselves to IRPC while fostering good model for corporate culture.
- Compensation and welfare of employees
  - IRPC has developed a compensation policy conforming to work performance both in the short-term and long-term. The review process is appraised with assessment of agreed KPI and competency at an organizational, business unit and individual levels, starting from the beginning of each year. Variation bonus is also granted to senior executives in proportion to specific achievements.
  - IRPC has improved its welfare structure such as medical fees, rental fees and non-resident allowances to retain quality employees with the organization as well as promoting and upgrading the quality of life of employees.
  - IRPC has organized a provident fund for the long-term welfare of employees, with higher corporate contribution than legal requirement and exponential to service years. Employees are given sufficient information and training with options for appropriate investment depending on an individual's need for maximum return and investment's flexibility.
  - IRPC has organized an annual recognition service years awards for employees with 10, 20 and 30 service years.
  - IRPC consistently promotes and fosters awareness among its workforce to recognize commercial patents and intellectual property.

Several campaigns were organized to remind employees to fully comply with the Copyright Act B.E.2537. IRPC also published its policy on standard practices for its computers and computer networks, including good operation practices to prevent employees from using illegal computer programs and software. Periodic reviews and monitoring are set up to prevent any infringements.

- An internal audit is responsible for monitoring and auditing any violations on the use of copyrights owned by IRPC and to protect and optimize IRPC's intellectual properties.

### Community and Society

IRPC realizes its role as a good citizen while incorporating itself to community and society with the responsibility of assisting them, supporting community services and developing sustainable quality of life. Community and social programs on public health, education, religion, culture and quality of life which can be summarized in "Corporate Social Responsibility Project" page 192-201.





*Mangrove Reforestation project to protect waves in collaboration with Chumporn Nation Park*

#### Environment and natural resources

IRPC has consistently acted as a good citizen, taken into account the responsibility for the environment and natural resources including safety concerns. IRPC was selected by the Industrial Environment Institute of the Federation of Thai Industries as a role model for eco-industrial operations. The 2017 activities pertinent to the development of environment, natural resources and society are listed in “Quality Safety Health and Environment” page 205

#### 4 Information disclosure and transparency

IRPC devises a policy to disclose both financial and non-financial information in a sufficient, accountable and timely manner via different channels such as 56-1 form, annual report, IRPC website (both Thai and English), including the media. IRPC has established investor relations unit to coordinate between IRPC and shareholders, analysts and other relevant persons. In 2017, IRPC conducted information disclosure activities as follows:

- IRPC prepared reports on its information in conformity to SEC and SET; for example,
  - Report of directors’ and executives’ vested interests based on SEC’s criteria.
  - Report of significant information and financial

statements and important operation of IRPC via SET channels.

- IRPC prepared the 2016 Annual Report illustrating financial statements and significant operation information which were unconditionally approved by the auditor and IRPC has never been ordered by SEC and SET to rectify its financial statements.

- Disclosure of transactions or agreements between shareholders with significant impact on other shareholders or IRPC.

- IRPC prepared reports in compliance with international standards

- IRPC prepared Corporate Sustainability Report 2016 to communicate guidelines of management and performance results in terms of economics, social and environmental dimensions by using Sustainability Reporting Guidelines of Global Reporting Initiative (GRI G.4) to ensure that information disclosure compiled with international standards and to assess the completeness and accordance of contents at core level. IRPC also hired an external agency to cross-check information for accountability and then submitted it to shareholders together with the Annual Report and publicized on IRPC’s website.

- IRPC prepared Communication on Progress (CoP) report and submitted it to UN Global Compact as one of its members. IRPC has committed to operate and report its performance results in compliance with UN Global Compact’s guidelines in which IRPC has been a member since 2011. In 2017, IRPC upgraded its report to become GC Advanced Level, the highest level of reporting for 4 consecutive years. An electronic report was sent to the website of UN Global Compact ([www.unglobalcompact.org](http://www.unglobalcompact.org)) and also publicized on IRPC’s website.

- IRPC prepared Integrated Report 2016 in conformity to IR guidelines and also publicized it on IRPC’s website.



- IRPC disclosed significant information via electronic mail at [www.irpc.co.th](http://www.irpc.co.th) to present IRPC's up-to-date information, both Thai and English such as vision, business characteristics of the company, financial statement, press release, shareholding structure, organization structure, business group structure, information pertinent to the Board and executives, information on investors' relation, IRPC's certificate, regulations, memorandum of association, annual report (disclosed within 120 days after the end of an accounting year), integration report, shareholders' meeting invitation (can be downloaded), documents regarding shareholders' meeting, financial statement, 56-1 form, meeting related documents, analyst meeting, good corporate governance policy and other business information, accountability of organization, treatment of stakeholders and sustainable business operation.

- IRPC communicated via printed media, radio, television, activities with stakeholders and other public relations channels; for example, newsletter in order to report quarterly performance results as well as important activities to shareholders.

- IRPC communicated with analysts via line group in case of important events as well as to enhance communication efficiency.

- Direct information disclosure with shareholders, investors, stock analysts and media which was performed by the Managing Director and executives during meeting session with each group of stakeholders throughout the year.

- Activities for investors and stock analysts are as follows:

- Regular meeting with investors, stock analysts, domestic and foreign asset managers to provide insights, directions and business policies of IRPC in which in 2017, IRPC:
- Organized quarterly analysts meeting for 4 times in total
- Arranged audio conference with domestic analysts to clarify performance results on a quarterly basis for 4 times in total
- Organized roadshow and provided domestic and foreign analysts with information for 15 times in total
- Organized meeting with IRPC's executives based on the appointment of investors and analysts (company visit) for 31 times in total

- Organized activity with SET to disseminate IRPC's information in SET in the City 2017, held annually

- "Opportunity Day" activity, held by SET on a quarterly basis

- "Analyst Site Visit 2017" by stock analysts who visited UHV project as well as PPE & PPC projects. "IRPC Clean Power" project was also launched with the objective to provide knowledge and understanding of business and progress of IRPC's major investment projects

- Organized "Knowledge Sharing" (KM) seminar to stock analysts and institutional investors to employ information in analyzing operation results of the company as well as to utilize such information as basic factor of IRPC that reflects its shares' price, for 2 times in total under the topic called "2017 Petrochemical Market Outlook" and "Petrochemical: Moving forward to the Future"

- IRPC organized conference calls with stock analysts after the disclosure of financial statements 2016 to SET by providing opportunity to xx analysts to phone in and listen to clarification to help save travel time and could be deemed as "Green Meeting". The analysts would simultaneously receive complete, accurate and transparent information and in 2017, IRPC successfully arranged the total of xx conference calls.

- Refrain from disclosing information regarding IRPC's business performance to investors and analysts. IRPC will not make any appointments or providing information to analysts for 7 days prior to IRPC's performance report will be submitted to SET. Nonetheless, investors can find additional IRPC's information from [www.irpc.co.th](http://www.irpc.co.th) or from direct inquiry at Investor Relations Department.

Tel: 0 2765 7380

E-mail: [ir@irpc.co.th](mailto:ir@irpc.co.th)

Fax: 0 2765 7379

## Communication and information disclosure/clarification of complaints

Among factors regarding good corporate governance, communication of information to



stakeholders and the public in a transparent, adequate and correct manner is considered as significant as the Best Practice. IRPC has employed various communication channels and easy-to-understand language to ensure that the issue to be communicated, whether it will be information required to be disclosed by law or information dissemination of the company in different matters will achieve its ultimate goal; that is, the acknowledgement of various target groups in every sector. Consequently, the Board strongly emphasizes on information disclosure and clarification that can respond to any questions or complaints of the community as well as striving to provide complete and correct information to the public sector or regulatory body such as information relating to the complaint of the community that promotes environmental conservation at Baan Laeng in which Mrs. Payung Meesabai and others had filed a complaint and lawsuit to Rayong Administrative Court with regard to compliance based on Land Code, Section 8 concerning with “Change of land into public path inside the operation facilities and the community’s land outside the operation facilities” which is considered an operation allowed by legal requirements. The land that IRPC bought from the community in exchange will enable the community to benefit the most from such land. Besides, during a major maintenance set by operation plan during the first quarter, IRPC has established measures to cope with potential impact from light, noise, odor and air. To achieve this purpose, IRPC had communicated directly with the public, related public agencies and media while 24-hour complaint reception had also been put in effect in that the officer will inspect the area in question as soon as the complaint arises and

in 2017, IRPC already disclosed such information to the Sustainability Evaluation Committee, SET and Office of the National Anti-Corruption Commission to represent the company’s sincerity in solving the community problems. The communication project were shown in “Cprpolate Social Responsibility page “186-204”

## 5 Responsibility of the Board of Directors

### Annual performance appraisal

IRPC conducted a performance appraisal of the Board of directors and the sub-committee. Evaluation results are summarized below:

### 1. The Board’s performance appraisal results as a whole

In 2017 received an average score of 97.04% (compared to 95.32% in 2016)

Appraisal topics	Scores
• Board structure and qualifications	97.80 %
• Board’s roles and responsibilities for business strategy specification	97.90 %
• Board’s practices	97.70 %
• Board’s meetings	94.77 %

Additional recommendations from directors are as follows: succession plan of senior executives of every important position must be clearly identified and successfully completed in a timely manner.

- Sustainable business operation, policy, responsibility for society and environment as well as treatment of stakeholders must be taken into account the importance of area and community participation.

## 2. Individual appraisal outcome

- The average scores of performance self-assessment in 2017 was 97.73% (compared to 97.29% in 2016)

- The average scores of other directors (cross-evaluation method) in 2017 was 98.48% (compared to 98.20% in 2016)

Appraisal topics	Self-assessment score	Cross-evaluation score
• Directors' qualifications	96.80%	96.80%
• Responsibility for one's own decision and action which are explicable	99.11%	98.89%
• Responsibility for duties with sufficient competency and efficiency	97.33%	98.13%
• Fair and equitable treatment of stakeholders which is explicable	96.89%	98.67%
• Transparent and auditable operation with information disclosure	98.67%	99.00%
• Vision of long-term value addition to the business	96.44%	98.00%
• Compliance with ethics and business codes of conduct	98.89%	99.89%

## 3. Performance appraisal of the Audit Committee

3.1 Performance appraisal of the Audit Committee by the Chairman in 2017 earned an average score of 100% (same as 2016)

Appraisal topics	Scores
• Independence in performance duties	100%
• Review of financial statements	100%
• Consideration of related transactions	100%
• Review of internal control system	100%
• Review of IRPC's risk assessment	100%
• Review of compliance with criteria specified By SET and SEC	100%
• Performing other assigned duties	100%
• Reporting IRPC's operation to the Board on	100%

3.2 The Audit Committee's appraisal outcome as a whole in 2017 earned an average score of 100% (compared to 99.31% in 2016)

Appraisal topics	Scores
• Structure and components of the Audit Committee	100%
• Roles and responsibilities	100%
• Relations with internal and external auditors	100%
• Relations with the management	100%
• Reporting	100%
• Quality control	100%

3.3 The Audit Committee's individual appraisal outcome in 2017 earned an average score of 97.38% (compared to 88.39% in 2016)

Appraisal topics	Scores
• Business knowledge	91.67%
• Proficiency in performance duties	97.22%
• Assigned authority and duties	97.22%
• Independence and fairness	100%
• Understanding of duties and responsibility	100%
• Performance and meetings	98.15%

## 4. Performance evaluation outcomes of the sub-committee 2017

- The Nomination and Remuneration Committee earned an average score of 98.54% (compared to 95.35% in 2016)

- The Corporate Governance Committee earned an average score of 96.44% (compared to 97.30% in 2016)

- The Risk Management Committee earned an average score of 99.27% (same as 2016)

Appraisal topics	The Nomination and Remuneration Committee	The Corporate Governance Committee	The Risk Management Committee
• Board structure	100%	96.67%	100%
• Board's policies	98.33%	95.00%	100%
• Board's practices	97.50%	97.85%	98.33%
• Preparation of Board meetings	98.33%	96.25%	98.75%

## 5. Efficiency evaluation outcomes of preparation of Board meeting 2017

(average score of 97.20%)

Appraisal topics	Score
• Meeting preparation	96.00%
• Meeting procedures	98.40%

## Performance appraisal of the President

The President's performance appraisal and remuneration are specified under explicit and transparent criteria which fairly and concretely reflect his performance and suit his responsibilities. Details of operation in 2017 will be described in the management structure page 101.

## Orientation of newly appointed directors

To ensure that newly appointed directors understand IRPC's business, including their roles and responsibilities as required by law and international CG standards, in 2016, IRPC held an orientation session for all newly appointed directors before their first attendance of the Board's meeting. The President shall summarize meeting report by himself and then submit corporate information, regulations and operation manual to the Board prior to the meeting. Newly appointed directors in 2017 are as follows:

1. Mr. Kris Imsaeng
2. Ms. Nantika Thangsupanich

Details of orientation session consisted of:

1. The President summarized corporate information consisting of IRPC's vision, policies, organization structure, business overview, business performance

outcomes as well as other related information to enhance their knowledge and understanding of IRPC's business. The session should take at least one hour and directors were allowed to ask questions without any time limitations.

2. The Company Secretary prepared director's handbook and documents for newly appointed directors consisting of director's handbook (books 1-3), corporate governance handbook, code of conduct, company's certificate, objectives, company's regulations, list of directors, duties of the sub-committee, minutes of shareholders' meetings 2014-2017, minutes of previous Board's meetings (2014-2017). Disclosure report concerning additional information (form 56-1), annual report 2016, sustainability report 2016, Institute of Directors (IOD) training courses and the schedule of Board meetings for 2017-2018.

## Knowledge development

IRPC has encouraged every director and executive to attend the training and seminar beneficial to their performance both in business management/ industry administration, roles, duties and responsibilities of directors. Each director has attended basic training program with IOD (details of directors' autobiography can be seen in page 22-33). Nonetheless, the Company Secretary has coordinated with the directors to arrange suitable timing for attending new training program of IOD in which in 2017:

- Directors attended the seminar under the topic of directors' and executives' duties under the new law pertinent to market misconduct, civil penalty and class action, held by IOD's speakers; namely, Mr.Weerawong Jitmittraparb from Weerawong Shinawatr and Partners Company Limited.
- Three directors (Mr.Anusorn Saengnimnual, Mr.Charnsilp Trinuchakorn and Mr.Chavalit Puntong) attended the seminar "Board role in strategic leadership", held by Mr.Christopher Hafner (IOD's speaker).
- Mr.Anusorn Saengnimnual, one of IRPC's directors, attended the training called "Independent Director Forum 2017" on the topic of "Update COSO Enterprise Risk Management: Integrating with Strategy and Performance".



- Executives attended seminars/ meetings/ lectures on anti-corruption and corporate governance, hosted by IOD, SET or other academic institutions throughout the year.

### Nomination of the President

The Nomination and Remuneration Committee is responsible for nominating an individual with knowledge, expertise and capability appropriate to be assigned as the President of IRPC. Such candidate must possess experience, knowledge and understanding of petroleum and petrochemical business as well as having good image, leadership skills in compliance with CG. The nomination of the President must be approved by the Board.

### Succession plan

The Board ensures that IRPC has a proper human resource management plan and recruitment system in place for all those who will become top executives as well as planning on training courses to enhance their skills and knowledge and career path development under HR excellence program. IRPC has established a succession plan for the President, top management and middle management to efficiently nurture successors and to promptly handle all situations whether they will be academic, management or leadership. The executives attended “Leadership Greatness” and 7 habits training courses. The plan also includes job rotation so that they may gain knowledge of business operations as well as on-the-job training.

### Corporate governance of IRPC, its subsidiaries and associated companies

- Management structure

The Board has approved IRPC’s management structure to ensure efficiency of business management led by the President. In 2017, the Board approved a new, streamlined organization structure with fewer authority levels to avoid redundancy and better suit mandate and business nature of IRPC as shown under organization chart page 34

- Monitoring mechanism

Besides the nomination of the President and top management, the Board has set monitoring guidelines for IRPC, its 6 subsidiaries and 5 associated companies. (Details of shareholding structure are explained on page 116)

To serve as a director or other positions in IRPC or other organizations, the President must gain approval from the Board. On the other hand, top management of the company must receive approval from the President to serve as a director or other positions in other organizations. IRPCs representatives need an approval of the Board to serve as a director or members of the management team of IRPC’s subsidiaries and associated companies.

- Role as shareholders of subsidiaries and associated companies

IRPC’s representatives can exercise their voting right at the shareholders’ meeting under rules and regulations specified by subsidiaries and associated companies and within the Board’s approved authority.

- Management mechanism of subsidiaries and associated companies



Business management must be aligned with IRPC's main policy and conform to market prices on a fair basis for related transactions. Reporting of any conflicts of interest must be undertaken properly, completely, transparently based on CG.

Management of subsidiaries and associated companies will be performed by IRPC's representatives who are also IRPC's executives. However, key decision-making must, in any circumstances, gain approval from IRPC's Board.

### Dividend policy

IRPC has a policy for dividend payment of no less than 25 percent of the annual net profit after deduction of taxes and all provisional reserves required by law and IRPC's regulations. The dividend payment also depends on investment plans, necessity and other factors as seen appropriate by the Board. The 2016 AGM approved the dividend payment of 0.23 baht per share or 48.35% of dividend payment ratio for 2016 performance.

### Use of inside information

The Board has specified a policy of information disclosure and good practices on maintaining confidentiality of information in its CG manual requiring the directors, executives and employees to take precaution in maintaining inside information as well as disclosing confidential information to outsiders. Therefore, IRPC has established system for maintaining confidential information, specifying levels of confidentiality and restricting right for data access. IRPC's policy forbids disclosure and use of inside information not yet revealed to the public for the benefit of oneself or others, including the trading of IRPC's shares.

### Major conflicts or disputes with stakeholders

No significant conflicts or disputes with stakeholders were reported this year.

### Audit fee

In 2017, IRPC appointed Deloitte Touche Tohmatsu Jaiyos Company Limited to serve as an external auditor. This company has been proved by the Shareholders' Meeting 2017 as an independent and reliable auditor

and does not have any relations or vested interests or both, with IRPC, its subsidiaries, directors, executives, major shareholders or other related parties.

#### 1. Audit fees paid to auditor or audit company

Items	Amount
1. audit fees of IRPC	3,100,000
2. audit fees of subsidiaries	900,000
3. other expenditures such as travel expenses of employees, postage fees, report publication expenditures	Not more than 120,000
<b>Total</b>	<b>4,000,000</b>

#### 2. Other expenditures paid to an auditor or audit company

Items	Amount
1. hiring fees for financial, tax and legal consultants	4,000,000
2. hiring fees for consultants of CCMS development and installation project	4,800,000
<b>Total</b>	<b>9,008,830</b>

## Corporate Citizenship

Apart from good corporate governance, the Board strongly promotes IRPC to act as one of the good corporate citizenship to set a good example while encouraging every relevant stakeholder in its supply chain to adhere and strictly comply to its corporate citizenship policy for the quality of the society. In 2017, IRPC's operations based on UNGC's 4 obligations (anti-corruption, labor rights, human rights and environment) can be summarized as follows:

### Anti-corruption

- IRPC was granted a recertification membership of Thailand's Private Sector Collective Action Coalition Against Corruption or CAC on March 9, 2017.

- IRPCT Technology Company Limited and IRPC Polyol Company Limited cooperatively prepared self-evaluation form to request for a membership of CAC project in which CAC granted a certification on March 9, 2017 and on November 10, 2017 respectively.

- The establishment of anti-corruption network and support of IRPC's business partners in joining force with CAC by organizing a lecture on anti-corruption policy and participation with CAC in anti-corruption



practices, presented to business partners and contractors who performed their duties during project turn around 2017 on June 29, 2017 at IRPC Technology College. IRPC also acted as a medium in coordinating with business partners who presented their intention to become CAC member.

- Coordinate with Cubic Academy year5 by Associate Professor Saowanee Thairungroj, Ph.D, President of Thai Commerce University to organize a training program on anti-corruption to staffs, both in Bangkok and Rayong who have never been attended this course on October 12, 2017 at Suan Son Room, 6th floor and at the auditorium of the 10th Year Building, Rayong plant. There are 650 more employees attending the training (363 employees from Bangkok 287 employees from Rayong) with a total of 4,249 employees from 5,310 employees who already attended the training program. Therefore, only 1,061 employees left who have not participated in such training which will be implemented in 2018.

- IRPC had been invited from IOD to join in the discussion regarding the project evaluation of CAC for SME on December 18, 2017 with the purpose to enable small business to participate and become the membership.

- An internal audit agency has set up 5-year internal audit plan and an annual plan for completion and efficiency in relevant to the significance and impact of the operation. Besides, IRPC also established Self Audit Project to instill employees' awareness in complying to specified operation procedures. On this occasion, the Internal Audit Committee arranged the "Diamond Award" 2017 activity which has been held for 7 consecutive years since 2011. The objective of such award is to praise

the regulatory body, the internal audit agency and the cooperation in transparent inspection that promotes efficient internal control and internal audit systems for the organization, deemed one of the most important foundations of good corporate governance.

- The Board specified whistleblowing policy by providing channels for whistleblowers to inform the trace and accept complaints from inside and outside organization relating to illegal acts, unethical performance or any fraud actions of every personnel

of every level, starting from the President, executives and employees of IRPC, including those of its subsidiaries and other stakeholders related to the company's business. The Board also defined clear steps of inspection and rectification which must be impartial and transparent while whistleblowers' protection procedures must be put in place.

Channels to inform traces and complaints

- Via e-mail: auditor@irpc.co.th
- Via letter: The Chairman of Internal Audit Committee  
IRPC Public Company (Limited)  
555/2 Energy Complex, Building B, 6<sup>th</sup> floor  
Vibhavadi Rangsit Road, Chatuchak  
sub-district, Chatuchak district Bangkok 10900
- Via PO.box: PO.box 35 Suntower Building,  
Bangkok 10900

- Steps of inspecting trace and complaint shall begin with the internal audit department that is responsible for managing and following up results as well as compiling information concerning any wrongdoings or unethical behavior to directly report to the Internal Audit Committee and the Board on a monthly and quarterly basis respectively. In practical, the internal audit department shall consider the accuracy of such complaint and then appoint the directors to further the investigation. If there is an actual wrongdoing or unethical behavior, punishment based on IRPC's rules and regulations shall be enforced.

- In 2017, IRPC received 21 complaints in total, among which 18 cases are not pertinent to corporate governance and business ethics and 3 recommendations. IRPC successfully summarized and ended 17 complaints whereas 4 complaints are being processed.

## Labor

IRPC has constantly promoted equitability and fairness policy, legal use of labor, whether they will be employees, labor of its business partners, labor of the contractors and customers throughout the supply chain. IRPC also respects individuals' right and freedom without any indiscrimination due to differences in gender, age, educational background, religion and nationality.

## Human rights

- As for networking, IRPC is one of the founders of Global Compact Network Thailand (GCNT) which is the result of the merging of 15 leading organizations in Thailand, certified members of UN Global Compact with the mission to promote business operation with respect to human rights and assist the company to achieve 17 goals of sustainable development. In 2017, GCNT joined force with partnership networks of 7 public and private sectors in total in signing the declaration of national cooperation to move forward the principles regarding business and human rights of UN (UNGPs) in Thailand, hosted by the Office of the National Human Rights Commission of Thailand. General Prayut Chanocha, the Prime Minister also witnessed such event to become one of the driving forces of business operation with respect to human rights policy in Thailand and to encourage the awareness of related agencies regarding this issue while simultaneously extending practical outcome concretely and further it to the regional level.

- IRPC cooperated with GCNT in organizing an exhibition displaying "Best Practice" of human rights in private sector, in the preparation before announcing national agenda under the topic of "Human rights join the driving force to move forward to Thailand 4.0 for sustainable development", chaired by General Prayut Chanocha, the Prime Minister.

- IRPC announced its human rights policy as well as comprehensively performing risk evaluation, impact on human rights owing to IRPC's business operation and employ such information to plan risk management of the organization.

## Environment

IRPC has been committed to efficient consumption of natural resources by minimizing wastes that may cause environmental pollution and has strictly conformed to EIA conditions. Furthermore, IRPC ensured that its facilities and other nearby industrial

plants become an ecological industry that can live harmoniously with local community and endeavored to minimize every negative impact on environment to the lowest level possible.

In 2017, IRPC, together with shareholders and stakeholders, implemented various social responsibility activities by providing knowledge in terms of plastic use and building a network to instill awareness among students living near IRPC's facilities with the total of 15 schools from 5 tambons.

## Operation plans 2017

IRPC has defined major objectives in developing its corporate governance policies to be comparable to international standard and also endeavors to foster cooperation with every private and public sector, including independent organizations in order to become a driving force that moves the company towards sustainable growth and development. IRPC's major operation plans include the following:

- Improvement of corporate governance handbook as well as providing knowledge in terms of corporate governance to executives and employees to be employed as a guideline of impeccable business operation with ethics and morality.

- Use of Technology 4.0 as a tool to improve the efficiency of corporate governance policy.

- Knowledge sharing on CG Web Page: Digital 4.0

- Development of CG Self-Assessment (online quiz)

- Support and cooperate with other organizations regarding human rights.

- Prepare Stakeholders Engagement to ensure that every stakeholder group will receive equal benefits and highest satisfaction.

IRPC has planned to develop and implement its corporate governance policy 2018, continued from 2017 and consists of operation plan in compliance with law and strategic plan, including communication and promotion plan, environment governance plan, CSR, community relations plan and stakeholders engagement plan as approved in the Board's Meeting No.2/2017 on February 13, 2017.



# MANAGEMENT STRUCTURE

MANAGEMENT STRUCTURE

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IRPC INFORMATION

# Management Structure

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.



## 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.

APPOINTMENT

## 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.

## 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 2017, 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.





## 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 Board of Directors

### MANAGEMENT

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.

- 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.

## 8 Management Structure

The management Structure or Organization Structure of IRPC comprises of 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 of Directors. Efficient management and corporate governance are evident in the management structure, and relationship among the shareholders, the Board and the management is taken into consideration to ensure competitiveness, sustainable growth, and value addition for the shareholders in the long run as well as all stakeholders on an equitable basis.

In monitoring the business, the shareholders elect the Board of Directors to manage the operations for them. The Board defines vision, business directions, policies, and strategic plans and assign the management to implement them in an efficient manner to achieve the goals, and follow up on the progress to ensure efficiency of operations to the utmost benefits and appropriate returns to shareholders' investment.

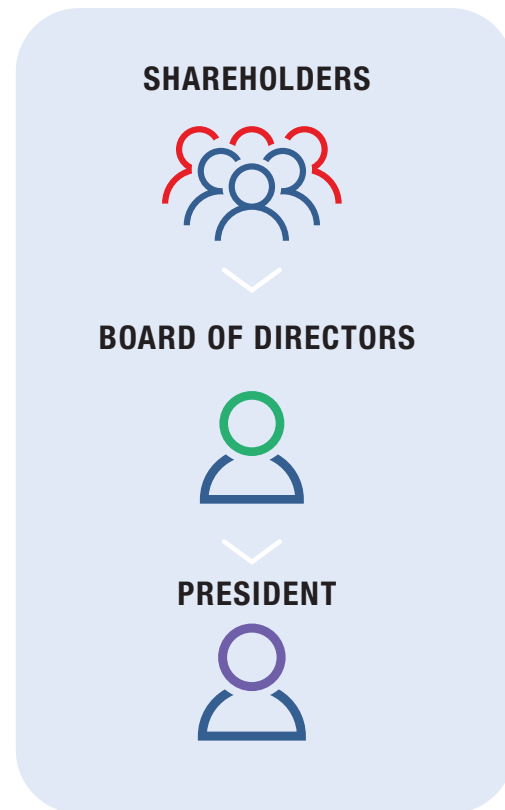
### 8.1 Board of Directors

As of December 31, 2017, the Board consisted of 15 members, which suit the sizes, types and complexity of its businesses as follows:

- 14 non-management directors (93.34% of the entire Board)

- One management director (President)

Seven members of the Board are independent directors (46.67% of the entire Board, two of whom are female).



Details of the Board of Directors as of December 31, 2017 are as follows:

No.	Name	Position		Appointed Date	
1.	Mr. Tevin Vongvanich	Director	Chairman	October 20, 2015	1 <sup>st</sup> term
2.	Mr. Woothisarn Tanchai	Independent Director	Chairman of the Nomination and Remuneration Committee	June 19, 2015 April 4, 2017	1 <sup>st</sup> term 2 <sup>nd</sup> term
3.	Mr. Nuttachat Charuchinda	Director	Chairman of the Risk Management Committee	April 29, 2016	1 <sup>st</sup> term
4.	Mr. Chansin Treenuchagron	Director	Member of the Risk Management Committee	October 20, 2015	1 <sup>st</sup> term
5.	Mr. Chavalit Punthong	Director	Member of the Nomination and Remuneration Committee	November 17, 2015	1 <sup>st</sup> term
6.	Mr. Somnuk Bomrungsalee	Independent Director	Chairman of the Audit Committee	April 9, 2014 April 4, 2017	1 <sup>st</sup> term 2 <sup>nd</sup> term
7.	Mr. Anusorn Sangnimnuan	Independent	Chairman of the Corporate Director Governance Committee	August 27, 2016 April 4, 2017	1 <sup>st</sup> term 2 <sup>nd</sup> term
8.	Gen. Sasin Thongpakdee	Independent Director	Member of the Corporate Governance Committee	September 1, 2014 April 3, 2015	1 <sup>st</sup> term 2 <sup>nd</sup> term
9.	Gen. Theppong Tippayachan	Independent Director	Member of the Corporate Governance Committee	September 1, 2016	1 <sup>st</sup> term
10.	Mr. Ekniti Nitithanprapas	Director	Member of the Risk Management Committee	November 17, 2015 April 4, 2017	1 <sup>st</sup> term 2 <sup>nd</sup> term
11.	Mr. Jessada Promjart	Independent Director	Member of the Audit Committee	March 16, 2016 April 4, 2017	1 <sup>st</sup> term 2 <sup>nd</sup> term
12.	Ms. Ruenvadee Suwanmongkol	Independent Director	Member of the Audit Committee	April 1, 2016	1 <sup>st</sup> term
13.	Ms. Nantika Thangsuphanich	Director	Member of the Nomination and Remuneration Committee	December 2, 2017	1 <sup>st</sup> term
14.	Mr. Kris Imsang	Director	Member of the Corporate Governance Committee	December 2, 2017	1 <sup>st</sup> term
15.	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	1 <sup>st</sup> term 2 <sup>nd</sup> term

Note: 1. Mr. Songpope Polachan, Independent Director and Chairman of the Audit Committee resigned on December 1, 2017. The Board appointed Ms. Nantika Thangsuphanich as a director to fill the vacant position.

2. Mr. Pramual Chanpong, Independent Director and Member of the Corporate Governance Committee resigned on December 1, 2017. The Board appointed Mr. Kris Imsang as a director to fill the vacant position.

### Directors authorized to sign for IRPC

The directors authorized to sign for IRPC as of December 31, 2017, comprise (1) Mr. Tevin Vongvanich, (2) Mr. Chansin Treenuchagron, (3) Mr. Sukrit Surabotsopon, (4) Mr. Nuttachat Charuchinda, and (5) Mr. Chavalit Punthong. 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 listed companies on the Stock Exchange of Thailand (SET) must not exceed five companies in total (including IRPC).

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 be without the 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 be without the prohibitions according to the Cabinet resolution on January 24, 2011, on the appointment of high-ranking government officers and that of directors in state enterprises and/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.

### Independent Directors

Independent directors mean directors who are independent from the major or group of major shareholders and the Company'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 the 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. 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.

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 three percent or more of the net tangible asset value of Baht 20 million or more, whichever is lesser. 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 Baht 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. Not engaged in any 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 one percent of the voting shares in another company engaging in a similar business and in competition with IRPC or its subsidiaries.

9. Not having any 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 locate 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 of IRPC.

### 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 Chair of that meeting will cast a decisive vote.

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

3. The Board selects one member as the President and as the 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 in 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 by 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 duty of care and duty of loyalty. It is responsible for its shareholders on IRPC's business operations, ensure that management is in compliance with policies, guidelines, and targets for the highest benefit of shareholders based on ethics and benefits 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.

2. Review and approve IRPC's major policies, strategies, objectives, financial targets and action plans at least once a year, as well as regular follow-up on the implementation of the defined action plans in compliance with IRPC's direction and strategies.

3. Ensure a reliable accounting system, financial reporting and auditing, as well as supervise the 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, as well as 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 account IRPC's performance, 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, excluding the appointment of directors in IRPC's subsidiaries or joint-venture companies proportional to its shareholding or to shareholders' agreements, as determined to be the Board's authority.

8. Ensure regular assessment of the President's performance and determine the President's compensation in accordance with his performance to foster short-term and long-term motivation.

9. Provide suitable communication channels with each group of shareholders and assess the information disclosure to ensure its accuracy, clarity, transparency, reliability, and high standards.

10. Assume leadership and act as a role model in conducting business in compliance with IRPC's corporate governance and CSR guidelines.

11. Encourage IRPC to undertake anti-fraud and anti-corruption activities in every form and promote IRPC's good governance.

12. Appoint a qualified Company Secretary as stipulated by law to perform and assume responsibilities in compliance with the Securities and Exchange Act.

### Approval Authority

1. Vision, strategies, short-term and long-term corporate plans, and major policies such as the corporate governance policy, risk management policy, anti-corruption policy and information disclosure policy.

2. IRPC's financial criteria, investment, and investment direction, as well as financial targets, action plans, and annual budget.

3. Procurement that exceeds the President's approval as authorized for each item.

4. IRPC's major operations under its objectives, articles of association, resolutions of the shareholders' meeting and relevant laws, as well as 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.

7. Performance targets/ goals and results, and determination of President's compensation.

8. 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

Moreover, 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.

1. Sale or transfer of the entire or essential parts of IRPC's 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 IRPC's businesses.

4. Assigning other parties to manage IRPC's business.

5. Merger of IRPC's business with other parties for profit/ loss sharing.

6. Making amendments to IRPC's Memoranda of Association or Articles of Association.

7. Increase or decrease of IRPC's registered capital or issuance of debentures.

8. Merger or dissolution of IRPC.

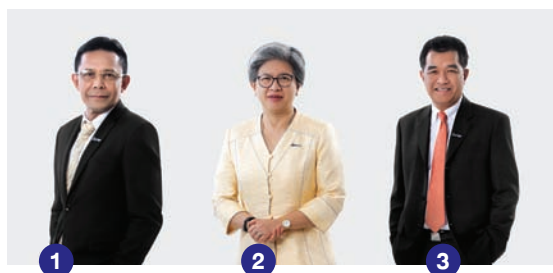
## Duties and Responsibilities of the Chairman

To ensure the clear division of duties of IRPC's policy formulation and IRPC's operation, and the role of Board to lead and monitor the management's performance, the Company 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, chair Board meetings and shareholders' meeting, as well as 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 to express their independent views with adequate information provided.
4. 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.
5. Supervise and follow up the work of the Board and the committees to ensure that IRPC's objectives are reached.
6. 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, 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 and IRPC's CG Handbook. The Audit Committee must have at least one director who possesses sufficient knowledge and experience to review the reliability of the budget:

- (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 IRPC's operations are executed in compliance with the laws, related rules and regulations and the set internal control system, and to handle both internal and external complaints. The Vice President, Office of Corporate Internal Audit, commands independence and reports directly to the Audit Committee.

The Audit Committee appoints the Vice President, Office of Corporate Internal Audit, Secretary to facilitate its work on meeting appointments, preparation of meeting agenda, dispatch of accompanying documents, and minutes of meetings. The secretary must possess knowledge, ability, and experience to assist the Audit Committee.

### Mr. Thammasak Panyowatkool

Was appointed : Vice President, Office of Corporate Internal Audit, and Secretary of the Audit Committee

Effective Date: January 1, 2016-to present

(Mr. Thammasak Panyowatkool's profile is shown under "Management Team" in page 44)

### 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, the reason must be given to SET.

4. In case of vacancies in 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 IRPC's financial reports to meet accounting standards with correctness and sufficiency, as stipulated by law.

2. Review IRPC's internal control and internal audit systems to ensure their suitability and effectiveness, and review effectiveness and sufficiency of the risk management process.

3. Review IRPC's operations to ensure compliance with the Securities and Exchange laws, and other laws relating to IRPC's business.

4. Review IRPC's 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 highest benefit for IRPC.

5. Select and nominate independent persons as external auditors and make recommendations on their dismissal, fees, and hold a meeting with them in the absence of the management at least once a year.

6. Consider the scope of auditing and auditing plans of the external auditors and the Office of Corporate Internal Audit for complementarity and reduced redundancy on the matter of financial auditing.

7. Approve the auditing plans, as well as provide views on budget and manpower of the Office of Corporate Internal Audit.

8. Consider, appoint, transfer, or dismiss the Executive Vice President, Office of Corporate Internal Audit, as well as consider the independence of the office.

9. Review the efficiency and effectiveness of information technology systems relevant to internal control and risk management.

10. Arrange for an internal audit report to be included in IRPC's annual report.

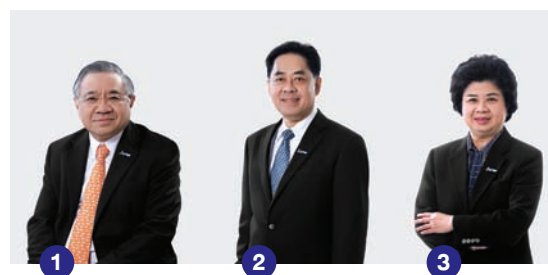
11. Possess the authority to have access to the information of the review and investigation of relevant persons under the duties and responsibilities of the Audit Committee as stipulated by IRPC's regulations.

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

- 1) List of conflicts of interest
- 2) Fraud or abnormality or major faults 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 list or the action 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 appoints at least three directors, at least one of whom must be an independent director.

- (1) Mr. Woothisarn Tanchai  
(Independent Director) Chairman
- (2) Mr. Chavalit Punthong (Director) Member
- (3) Ms. Nantika Thangsuphanich (Director) Member  
Ms. Monwipa Choopiban, Executive Vice President, Office of Corporate Affairs and Company Secretary, serves as Secretary.

### 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 two parts:

### 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, not being afraid to freely express different and independent point of views, adherence to principles and standards as a professional, and diversity in knowledge, work experience, age and gender.
- 3) Skilled characteristics which suit IRPC's business, needs and required conditions. It will be also of IRPC's benefit if the candidate is on the list guaranteed by a government agency.
- 4) Consider directors' dedication, that is, the number of listed companies where each director holds tenure of up to five listed companies for each director and three listed companies for each management director.

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 qualified candidates for incoming directors and submit them to the Board for approval.

5. Screen appropriate candidates for consideration of 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 list of directors for membership of the Sub-committees and table it to the Board for approval.

7. Screen appropriate candidates for the position of the 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, implementation under the strategies, financial performance, relation between the Board and the management, and the succession plan, to be used as criteria in the President's performance assessment and annual compensation adjustment, and submit to the Board for approval.

9. Assess the yearly performance and the compensation of the President such as salary, pension, bonus, welfare and other monetary and non-monetary benefits based on the set criteria, and submit to the Board for approval.

10. Consider succession plans for the position of 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

11. 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.

12. Define criteria and forms of compensation which are appropriate, adequate and fair for the President to foster motivation for sustainable value addition to IRPC and to keep capable executives with the Company. The President's compensation is approved by the Board.



13. 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.

14. 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, with experience in the same fields of business or industry as IRPC's to supplement the required Board component, and set it in Board Skills Matrix, so that the nomination is in line 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 to the maximum benefit 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).

4. Consider directors' dedication, in case of returning directors, past performance, number of listed companies that each director holds tenure in of not exceeding five listed companies, to suit IRPC's nature of business and in compliance with the Cabinet resolution on 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 of independent directors at three years. Directors/ independent directors can serve up to three consecutive terms (nine 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 consideration before submitting the list to the shareholders' meeting for approval. The Board, however, appoint directors to fill vacancies or resigned posts during the year as stated in IRPC's Articles of Association and Public Limited Company Act.

9. For sub-committees, the Nomination and Remuneration Committee will consider 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, as well as monitoring IRPC's operation:

- (1) Mr. Anusorn Sangnimnuan  
(Independent Director) Chairman
- (2) Lt. Gen. Sasin Thongpakdee  
(Independent Director) Member
- (3) Gen. Theppong Tippayachan  
(Independent Director) Member
- (4) Mr. Kris Imsang (Director) Member  
Ms. Monwipa Choopiban, Executive Vice President, Office of Corporate Affairs, and Company Secretary, serves as Secretary.

### 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 IRPC's operations comply with policies and guidelines, and that corporate governance is being continually developed and elevated.

3) Consider and endorse the method to be used in the assessment of the Board and the sub-committees' performance and report the assessment results to the shareholders' meeting annually.

4) Monitor the work of the management to ensure compliance with corporate governance.

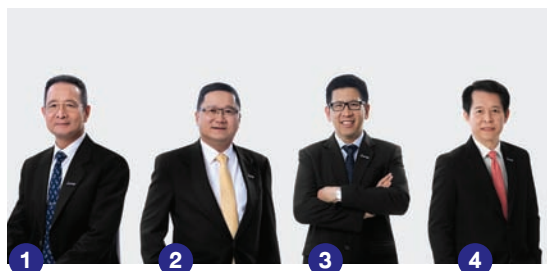
5) Monitor the work under the corporate governance policy and annual corporate governance work plan as approved by the Board.

6) Monitor implementation under the anti-corruption policy, sustainability management, social, communities and environment responsibility, and other GRC (good governance, risk management and compliance management) related policies to ensure efficiency and suitability with 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 IRPC's corporate and strategic plans:

- (1) Mr. Nuttachat Charuchinda  
(Director) Chairman
- (2) Mr. Chansin Treenuchagron  
(Director) Member
- (3) Mr. Ekniti Nitithanprapas  
(Director) Member
- (4) Mr. Sukrit Surabotsopon  
(Director) Member

Ms. Wanida Utaisomnapa, Executive Vice President, Corporate Business Planning, serves as Secretary.

### 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 IRPC's business operations.

2) Define risk management plans and enterprise risk management processes.

3) Consider financial instruments and derivatives contracts, such as futures contracts and hedging.

4) Develop an enterprise risk management system to ensure efficiency.

5) Monitor and assess performance of enterprise risk management implementation.

6) 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.

7) Support the Risk Manager's operation and continuously assess the major factors of risk management in compliance with corporate plans and on a par with other leading companies.

8) Screen and provide advice on risk management for investment projects with high technical complication, long-term obligations and significant risks.

9) Perform other tasks as assigned by the Board.

### **Risk Management Committee at Management level**

Apart from a Risk Management Committee at the Board level, IRPC has set up a Risk Management Steering Committee at the management level and working groups to monitor its overall risk management and internal control system as follows:

1. Risk Management Steering Committee (RMSC)

2. Financial and Supply Chain Risk Management Committee (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, report on follow-up and on risk management performance to manager or project director to ensure appropriate, sufficient risk management that responds to risks at the unit level.

6. License and Compliance Working Team manages compliance of risk management and report the results of the performance to the Risk Management Committee for acknowledgement, provide advice on legal compliance, and compiles all regulations relevant to IRPC's operations, set 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. In 2017 the Board held meetings once a month on every Tuesday of the third week of the month. Extraordinary meetings might be called as seen fit. The Chair and the President will jointly set the meeting agenda and matters, as well as

encouraging directors to propose the matters for the Board meeting. The Company Secretary arranges the meeting and ensures that the meeting proceeds smoothly and facilitates the work of the directors, such as providing advice and recommendation on laws, regulations, and IRPC's Articles of Association. In 2017 IRPC set up Board Portal via the internet from the computer, smartphone and tablet. This use of electronic system helps the Board work with more flexibility and efficiency, such as filing and retrieving of IRPC's critical document, supplementary documents for the Board and sub-committees meeting, 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 Chair gave opportunities for directors to express their opinions freely, and all enquiries will be clarified before voting decided by majority votes or special resolution (as defined in IRPC's Articles of Association), cast by at least two-thirds of the directors. The minutes of the meeting on this 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 will be systematically filed for easy reference in the electronic format as confidential document.

In 2017 the Board held 12 meetings, the independent directors held two meetings, and one meeting without the management. One special meeting to define and review IRPC's vision, direction, strategies and business plans (BOD-STs). The resolutions from the independent directors' meetings and the meeting without the management were so diverse and useful that the Board assigned the management for implementation based on the resolutions and report the results to the Board.

The meeting attendance of the entire Board in 2017 was higher than 80% (96%) and the individual attendance of each director was higher than 75% (75-100%) as summarized below.

## Meeting Attendance of the Board and Sub-committees in 2017

(Unit: Meetings)

Name	Board (15 members) Number of meetings this year: 12	Risk Management Committee (4 members) Number of meetings this year: 5	Audit Committee (3 members) Number of meetings this year: 11	Corporate Governance Committee (3 members) Number of meetings this year: 7	Nomination and Remu- neration Committee (3 members) Number of meetings this year: 6	Independent Directors Number of meetings: 2	Board without Management Number of meetings: 1
1. Mr. Tevin Vongvanich	12/12	-	-	-	-	-	1/1
2. Mr. Woothisarn Tanchai	12/12	-	-	-	6/6	2/2	1/1
3. Mr. Nuttachat Charuchinda	12/12	4/4	-	-	-	-	1/1
4. Mr. Chansin Treenuchagron	12/12	4/4	-	-	-	-	1/1
5. Mr. Chavalit Punthong	12/12	-	-	-	6/6	-	1/1
6. Mr. Somnuk Bomrungsalee <sup>(1)</sup>	12/12	-	-	-	5/5	1/1	1/1
7. Mr. Anusorn Sangnimnuan	12/12	-	1/1	7/7	-	2/2	1/1
8. Lt. Gen. Sasin Thongpakdee	12/12	-	-	7/7	-	2/2	1/1
9. Gen. Theppong Tippayachan	9/12	-	-	4/5	-	1/2	1/1
10. Mr. Ekniti Nitithanprapas	11/12	4/4	11/11	-	-	-	1/1
11. Mr. Jessada Promjart	12/12	-	-	-	-	2/2	1/1
12. Ms. Ruenvadee Suwanmongkol	10/12	-	7/11	-	-	1/2	1/1
13. Ms. Nantika Thangsuphanich <sup>(2)</sup>	1/1	-	-	-	1/1	-	-
14. Mr. Kris Imsang <sup>(3)</sup>	1/1	-	-	1/1	-	-	-
15. Mr. Sukrit Surabotsopon	12/12	4/4	-	-	-	-	-
16. Mr. Songpope Polachan <sup>(4)</sup>	11/11	-	10/10	-	-	2/2	1/1
17. Mr. Pramual Chanpong <sup>(5)</sup>	11/11	-	-	6/6	-	2/2	1/1

Note:

1. Mr. Somnuk Bomrungsalee was appointed Chairman, Audit Committee, following the resolution of Board Meeting No. 11/60 on November 21, 2017, with effect from December 2, 2017.
2. Ms. Nantika Thangsuphanich was appointed director following the resolution of Board Meeting No. 11/60 on November 21, 2017, with effect from December 2, 2017.
3. Mr. Kris Imsang was appointed director following the resolution of Board Meeting No. 11/60 on November 21, 2017, with effect from December 2, 2017.
4. Mr. Songpope Polachan tendered his resignation with effect from December 1, 2017.
5. Mr. Pramual Chanpong tendered his resignation with effect from December 1, 2017.



## The Management

IRPC's management structure has the President as the chief executive officer responsible for the management of operations assigned by the Board for the best interests of the company under appropriate situations. The President reports any significant change to the management structure to the Board for approval. There was, however, no significant change in 2017.

## The President

The Board assigns the President as the chief executive officer of the management team to manage IRPC's business under IRPC's objectives and articles of association, and the Board-defined policy. His authority is clearly defined in writing. Regulations on IRPC's business operations are issued for all employees to acknowledge and adhere to.

Mr. Sukrit Surabotsopon was appointed President with effect from October 1, 2013-present.

## Duties and Responsibilities

1) Manage IRPC's business under the laws, IRPC's objectives and articles of association, the Board's policy and the resolutions of shareholders' meeting.

2) Manage all IRPC's executives and employees, draw up regulations and terms of works, appoint, establish salary, wage, welfare, transfer, dismiss, promote executives and employees either to a higher position or salary, and execute disciplinary punishment under the Board's policy.

3) Perform in compliance with the Company's policy, strategic and business plans, vision and

mission as approved by the Board, with efficiency and for the best interests of IRPC.

4) Approve a budget for the 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 IRPC's performance and submit the proposed interim and annual dividend payment to the Board's or shareholders' meeting (as the case may be) 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 make good image of the organization, and adhere to good environmental governance with social and community responsibility with an emphasis on safety and occupational health.

10) Ensure that the operations align with anti-corruption and anti-bribery guidelines.

11) Ensure implementation in complying with the Sustainable Development Goals (SDGs) in pursuit of a Good Corporate Citizenship.

12) Perform other acts to support IRPC's operation under the responsibilities delegated by the Board.



## The management

As of December 31, 2017, IRPC Management consists of 16 members as follows:

No.	Name	Position
1.	<b>Mr. Sukrit Surabotsopon</b>	President
2.	<b>Mr. Pongpraphan Titathavewatana</b>	Senior Executive Vice President, Petrochemical & Refinery Business Unit
3.	<b>Mr. Somkiat Lertritpuwadol</b>	Senior Executive Vice President, Corporate Commercial and Marketing
4.	<b>Ms. Rachadaporn Rajchataewindra</b>	Senior Executive Vice President, Corporate Accounting & Finance
5.	<b>Mr. Thammasak Panyowatkool</b>	Executive Vice President, Officiate as Office of Internal Audit Manager
6.	<b>Mr. Pravet Assavadakorn</b>	Executive Vice President, Innovative Product Center
7.	<b>Ms. Monwipa Choopiban</b>	Executive Vice President, Office of Corporate Affairs/ Company Secretary
8.	<b>Ms. Awrapin Kettratanakul</b>	Executive Vice President, Office of Sustainability Management
9.	<b>Mr. Sirimet Leepagorn</b>	Executive Vice President, Office of Strategic Transformation and Result Delivery
10.	<b>Mr. Kraisit Anukoolutaiwong</b>	Executive Vice President, Corporate Human Resources
11.	<b>Ms. Wanida Utaisomnana</b>	Executive Vice President, Corporate Business Planning
12.	<b>Mr. Chalor Panutrakul</b>	Executive Vice President, Corporate Business Development
13.	<b>Mr. Veerawat Srinoradithlert</b>	Executive Vice President, Engineering and Maintenance
14.	<b>Mr. Woravuth Sivapetranart</b>	Executive Vice President, Refinery and Petrochemical Operation
15.	<b>Mr. Vichit Nittayanonte</b>	Executive Vice President, Operation Support
16.	<b>Mr. Phothiwat Paopongchuang</b>	Executive Vice President, President Office

## Duties and Responsibilities

1. Ensure that the policies and goals defined by the Board are put into practice.

2. Define strategic plans, objectives and major goals of business functions in line with IRPC's vision and mission, for implementation and use as working 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 efficient and effective performance of the subordinates.

5. Promote the development of subordinates and apply their potential to the maximum benefit for themselves and the corporation.

6. Support sustainable corporate growth under corporate governance, good governance and a socially and environmentally responsible organization.

## 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 Secretary to the management Committee.

The management Committee schedules a meeting in advance once a week on Monday. In 2017, the management Committee held 45 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 manage 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 the investment management, budget allocation for investment, and support the operation of IRPC and its affiliates.
- Consider and screen essential business matters to be submitted for the Board's approval.
- Consider important operation directions, based on accurate and complete information
- Acknowledge reports on IRPC's, national and global situations which impact IRPC's business.
- Consider and acknowledge progress of the operation under IRPC's major strategies.
- Approve important investment budgets within the authority given by the President.
- Set human resource (HR) management policy and mechanisms for HR system management.
- Consider and review risk management in business operations.
- 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 overall development.
- Follow up on progress and operational results 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 appoints sub-committees and other working groups 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. In 2017, The Committees were appointed to manage the license issues based on clause 9 for public use to handle complaints from communities with transparency and to the utmost benefit of the communities and corporate business operation.

The Quality, Security, Safety, Occupational Health, Environment Committee (QSSHE) was appointed to manage IRPC 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 the VP on operational results in all aspects, and 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 Ms. Monwipa Chooipiban, Executive Vice President, Office of Corporate Affairs, as Company Secretary, with effect from January 24, 2012, to perform duties under the above-mentioned act and the announcements of the Capital Market Supervisory Board.

The main duties and responsibilities of the Company Secretary are summarized as follows:

- Perform the duties with accountability, care, and integrity
- Provide to directors advices and recommendations on the laws and IRPC's Articles of Association

and rules and regulations, and ensure that IRPC's businesses comply with the laws and relevant regulations, and report to the Board of any significant changes.

- Arrange Board's Meetings and Shareholders' Meetings in compliance with the 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 his/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 in 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 both 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 Date : January 24, 2012 - present.

(Ms. Monwipa Choopiban's profile is shown under "Management Term" in page 46 attachment )

## Compensation Board of Directors

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

1. The compensation is divided into two portions, monthly pay 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 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 director. The compensation criteria surveyed by Thai Institute of Directors (IOD) and SET are also used in the consideration.

The compensation proposed for 2017 was comparable to the median of peer companies of the resources group (energy and infrastructure) according to the report on directors' compensation 2016, prepared by IOD in November 2016.

3. The scopes of work and assigned responsibilities of the directors and sub-committee members are also considered.

4. The Chair of the Board and the Chairmen of the committees are entitled to an additional 30% compensation of the other directors.

5. Members of the Audit Committee, Nomination and Remuneration Committee, Risk Management Committee and Corporate Governance Committee are entitled to only 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 2017 Annual General Meeting held on April 4, 2017, approved the compensation of the Board and committees at the same rate of those of 2016 as detailed below:

## 6.1. Board and sub-committees' compensation in 2017 (The compensation rate has been used since 2006).

Directors	Monthly compensation/ person (Baht)	Meeting allowance/ person (Baht)
<b>1. Board</b>		
Chair	60,000	60,000
Director	45,000	45,000
<b>2. Audit Committee, Nomination and Remuneration Committee, Corporate Governance Committee, Risk Management Committee and other committees to be established</b>		
Chair	-	60,000
Director	-	45,000

## 6.2 Bonuses for Directors:

Bonuses for directors correspond with IRPC's performance. The 2017 AGM of April 4, 2017, approved directors' bonuses totaling Baht 29 million or 0.30% of IRPC's net profit as proposed by the

Nomination and Remuneration Committee. The amount will be allocated to each director by their meeting attendance. In addition, the Board Chair will be paid 30 percent higher than other directors. Details are as summarized below.

## The Compensation received by each Director in 2017 is summarized below:

(Unit : Baht)

Name	Monthly compensation	Meeting allowance for Board	Meeting allowance for Sub-committees	Bonus (2016 performance)	Total
1. Mr. Tevin Vongvanich <sup>(1)</sup>	720,000	720,000	-	2,605,991	4,045,991
2. Mr. Woothisarn Tanchai	540,000	540,000	360,000	2,004,608	3,444,608
3. Mr. Nuttachat Charuchinda	540,000	540,000	240,000	1,336,406	2,656,406
4. Mr. Chansin Treenuchagron	540,000	495,000	180,000	2,004,608	3,219,608
5. Mr. Chavalit Punthong	540,000	540,000	270,000	2,004,608	3,354,608
6. Mr. Somnuk Bomrungsalee <sup>(2)</sup>	540,000	540,000	285,000	2,004,608	3,369,608
7. Mr. Anusorn Sangnimnuan	540,000	540,000	420,000	668,203	2,168,203
8. Lt. Gen. Sasin Thongpakdee	540,000	540,000	315,000	1,503,456	2,898,456
9. Gen. Theppong Tippayachan	540,000	405,000	180,000	501,152	1,626,152
10. Mr. Ekniti Nitithanprapas	540,000	495,000	180,000	2,004,608	3,219,608
11. Mr. Jessada Promjart	540,000	540,000	495,000	1,503,456	3,078,456
12. Ms. Ruenvadee Suwanmongkol	540,000	450,000	315,000	1,336,406	2,641,406
13. Ms. Nantika Thangsuphanich <sup>(3)</sup>	43,548	45,000	45,000	-	133,548

Name	Monthly compensation	Meeting allowance for Board	Meeting allowance for Sub-committees	Bonus (2016 performance)	Total
14. Mr. Kris Imsang <sup>(4)</sup>	43,548	45,000	45,000	-	133,548
15. Mr. Sukrit Surabotsopon	540,000	540,000	180,000	2,004,608	3,264,608
16. Mr. Songpope Polachan <sup>(5)</sup>	495,000	495,000	600,000	2,004,608	3,594,608
17. Mr. Pramual Chanpong <sup>(6)</sup>	495,000	495,000	270,000	2,004,608	3,264,608
18. Mr. Cherdpong Siriwit <sup>(7)</sup>	-	-	-	1,336,406	1,336,406
19. Mr. Watcharakiti Watcharothai <sup>(8)</sup>	-	-	-	1,169,355	1,169,355
20. Mr. Sarun Rungkasiri <sup>(9)</sup>	-	-	-	501,152	501,152
21. Mr. Trumph Jalichandra <sup>(10)</sup>	-	-	-	501,152	501,152
<b>TOTAL</b>	<b>8,277,096</b>	<b>7,965,000</b>	<b>4,380,000</b>	<b>29,000,000</b>	<b>49,622,096</b>

Note: (Apart from the above, IRPC does not pay any compensation or benefits in any other form to the directors).

1. Mr. Tevin Vongvanich had reimbursed PTT Plc his director's compensation in compliance with the conditions stipulated in PTT's President Employment Agreement.

2. Mr. Somnuk Bomrungsalee was appointed Chair of the Audit Committee following the resolution of the Board at Meeting No. 11/60, on November 21, 2017, with effect from December 2, 2017.

3. Ms. Nantika Thangsuphanich was appointed director following the resolution of the Board at Meeting No. 11/60 with effect from December 2, 2017.

4. Mr. Kris Imsang was appointed director following the resolution of the Board at Meeting No. 11/60 with effect from December 2, 2017.

5. Mr. Songpope Polachan tendered his resignation with effect on December 1, 2017.

6. Mr. Pramual Chanpong tendered his resignation with effect on December 1, 2017.

7. Mr. Cherdpong Siriwit reached 70 years of age (IRPC's good governance stipulates the age of directors of up to 70), with effect from September 1, 2016.

8. Mr. Watcharakiti Watcharothai tendered his resignation with effect from July 25, 2016

9. Mr. Sarun Rungkasiri tendered his resignation with effect from April 4, 2016

10. Mr. Trumph Jalichandra completed his term at the 2016 AGM on April 1, 2016

## Top Management Compensation

The President's compensation is designed under clear, transparent, fair and reasonable principles, taking into consideration duties and responsibilities and IRPC's performance outcomes. 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 or February.

2. After the approval of the Board, the President is informed and acknowledges them.

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, 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 2017 the Board, at the meeting No. 2/2560 on February 14, 2017, approved the performance assessment criteria for the President. The criteria were defined to cover challenging targets and both monetary and non-monetary performances, and social, community and environmental responsibility. The President accepted and employed his utmost potential in managing the business and leading the organization toward its goals according to the assessment components of Corporate KPIs and factors supporting IRPC's transparent and sustainable growth such as leadership and the prompt handling of problems which impact IRPC and the stakeholders in the right direction and with great success and good corporate governance.

In 2017, the President could successfully perform his duty in an excellent level for these two factors In which the compensation rate was comparable to other organizations in the same industry or similar industry.

## 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 alignment with the duties and responsibility of the management, and

2) Job competencies, a behavioral assessment tool for the management and employees' competency while performing their works, to ensure that IRPC achieve its goals with quality and sustainability

In 2017, compensation for 16 management members under SET's definition including the President in the forms of salary, bonuses, and contribution to provident fund totaled Baht 116.25 million.

Compensation	2016 (17 persons)	2017 (16 persons)
<b>Compensation</b>		
Salary	76.57	77.30
Bonus	28.87	32.08
<b>Other compensation</b>		
Provident Fund	6.95	6.87
<b>Total</b>	<b>112.39</b>	<b>116.25</b>

## Director of Subsidiaries (as of 31 December 2017)

## 1. IRPC Oil Co., Ltd.

Name	Position
1. Mr. Sukrit Surabotsopon	Chairman
2. Ms. Rachadaporn Rajchataewindra	Member
3. Mr. Vichit Nittayanonte	Member
4. Mr. Sirimet Leepagorn	Member
5. Mr. Chalermchai Somboonpakorn	Member
6. Mr. Somkiat Lertritpuwadol	Acting Managing Director

## 2. IRPC Polyol Co., Ltd.

Name	Position
1. Mr. Sukrit Surabotsopon	Chairman
2. Ms. Rachadaporn Rajchataewindra	Member
3. Mr. Woravuth Sivapetranart	Member
4. Mr. Pravet Assavadakorn	Member
5. Mr. Vichit Nittayanonte	Member
6. Mr. Rafal Zdon	Member
7. Mr. Sergiusz Stefanowski	Member
8. Mr. Chalermchai Somboonpakorn	Managing Director

## 3. IRPC Technology Co., Ltd.

Name	Position
1. Mr. Sukrit Surabotsopon	Chairman
2. Mr. Surachai Torapicharttrakool	Member
3. Ms. Monwipa Choopiban	Member
4. Mr. Kraisit Anukoolutaiwong	Member
5. Mr. Preecha Pokawat	Member
6. Mr. Phothisat Paopongchuang	Managing Director

## 4. IRPC A&amp;L Co., Ltd.

Name	Position
1. Mr. Sukrit Surabotsopon	Chairman
2. Ms. Rachadaporn Rajchataewindra	Member
3. Mr. Pongraphan Titathavewatana	Member
4. Mr. Toshiro Kojima	Member
5. Mr. Hideyuki Tokimasa	Member
6. Mr. Takayuki Mano	Member
7. Mr. Hiroshi Osubo	Member
8. Mr. Worawuth Sivapetranart	Member
9. Mr. Vichit Nittayanonte	Member
10. Mr. Somkiat Lertritpuwadol	Acting Managing Director

## 5. Rakpasak Co., Ltd.

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

Position Table of Directors and Executives (as of 31 December 2017)

No.	Name	IRPC Plc.	Subsidiaries					Associated Companies			Related Companies			
			IRPC Oil Co., Ltd.	IRPC Technology Co., Ltd.	IRPC Polyol Co., Ltd.	IRPC A&L Co., Ltd.	Rakpasak Co., Ltd.	PTT Energy Solutions Co., Ltd.	UBE Chemical (Asia) Plc.	IRPC Clean Power Co., Ltd.	PTT Plc.	PTT Exploration and Production Plc.	Sport Services Alliances Co., Ltd.	PTT Digital Solution Co., Ltd.
1.	Mr. Tevin Vongvanich	X									/, //	/		
2.	Mr. Woothisarn Tanchai	/												
3.	Mr. Nuttachat Charuchinda	/												
4.	Mr. Chansin Treenuchagron	/									//			X
5.	Mr. Chavalit Punthong	/									//			
6.	Ms. Nantika Thangsuphanich	/												
7.	Mr. Kris Imsang	/												
8.	Mr. Somnuk Bomrungsalee	/												
9.	Mr. Anusorn Sangnimnuan	/												
10.	Gen. Sasin Thongpakdee	/												
11.	Gen. Theppong Tipayachan	/												
12.	Mr. Ekniti Nitithanprapas	/												
13.	Mr. Jessada Promjart	/												
14.	Ms. Ruenvadee Suwanmongkol	/												
15.	Mr. Sukrit Surabotsopon	/, //	X	X	X	X		/	/		//			
16.	Mr. Pongpraphan Titathavewatana	//				/				/				
17.	Mr. Somkiat Lertritpuwadol	//	/			/			/					
18.	Ms. Rachadaporn Rajchataewindra	//	/		/	/			/	/	//			
19.	Mr. Thammasak Panyowatkool	//												
20.	Ms. Monwipa Choopiban	//		/										
21.	Mr. Pravet Assavadakorn	//			/									
22.	Mr. Phothiwat Paopongchuang	//		/									/	
23.	Ms. Awrapin Ketranakul	//												
24.	Ms. Wanida Utaisomnapa	//												
25.	Mr. Vichit Nittayanonte	//	/		/	/	/							
26.	Mr. Veerawat Srinoradithlert	//												
27.	Mr. Woravuth Sivapetranart	//			/	/								
28.	Mr. Kraisit Anukoolutaiwong	//		/										
29.	Mr. Sirimet Leepagorn	//	/							/				
30.	Mr. Chalor Panutrakul	//												

Note: X = Chairman / = Director // = Management Team

## Report on IRPC Shares held by the Directors and Management

## Number of shares held by the directors as of December 31, 2017

No.	Name	(As of December 31, 2016) Shareholding/ Number of shares	(As of December 31, 2017) Shareholding/ Number of shares	Share Increase (decrease) during the year	Remark
1.	Mr. Tevin Vongvanich	0.00000% 900	0.00000% 900	not change	
	Spouse	none	none	not change	
	Children under legal age	none	none	not change	
2.	Mr. Woothisarn Tanchai	none	none	not change	
	Spouse	none	none	not change	
	Children under legal age	none	none	not change	
3.	Mr. Nuttachat Charuchinda	none	none	not change	
	Spouse	none	none	not change	
	Children under legal age	none	none	not change	
4.	Mr. Charnsin Treenuchagron	none	none	not change	
	Spouse	none	none	not change	
	Children under legal age	none	none	not change	
5.	Mr. Chavalit Punthong	none	none	not change	
	Spouse	none	none	not change	
	Children under legal age	none	none	not change	
6.	Mr. Somnuk Bomrungsalee	none	none	not change	
	Spouse	none	none	not change	
	Children under legal age	none	none	not change	
7.	Mr. Anusorn Sangnimnuan	none	none	not change	
	Spouse	none	none	not change	
	Children under legal age	none	none	not change	
8.	Lt. Gen. Sasin Thongpakdee	none	none	not change	
	Spouse	none	none	not change	
	Children under legal age	none	none	not change	
9.	Gen. Theppong Tippayachan	none	none	not change	
	Spouse	none	none	not change	
	Children under legal age	none	none	not change	
10.	Mr. Ekniti Nitithanprapas	none	none	not change	
	Spouse	none	none	not change	
	Children under legal age	none	none	not change	

No.	Name	(As of December 31, 2016) Shareholding/ Number of shares	(As of December 31, 2017) Shareholding/ Number of shares	Share Increase (decrease) during the year	Remark
11.	Mr. Jessada Promjart	0.00002% 5,000	0.00002% 5,000	not change	
	Spouse	0.00010% 20,000	0.00010% 20,000	not change	
	Children under legal age			not change	
12.	Ms. Ruenvadee Suwanmongkol	none	none	not change	
	Spouse	none	none	not change	
	Children under legal age	none	none	not change	
13.	Ms. Nantika Thangsuphanich	N/A	none	not change	New director appointed with effect on December 2, 2017
	Spouse	N/A	none	not change	
	Children under legal age	N/A	none	not change	
14.	Mr. Kris Imsang	N/A	none	not change	New director appointed with effect on December 2, 2017
	Spouse	N/A	none	not change	
	Children under legal age	N/A	none	not change	
15	Mr. Sukrit Surabotsopon	0.03915% 8,000,000	0.04160% 8,500,000	0.00245% 500,000	
	Spouse	none	none	not change	
	Children under legal age	none	none	not change	
Directors who completed the terms/ resigned/ retired during the year					
16.	Mr. Songpope Polachan	none	none	not change	Director resigned with effect on December 1, 2017
	Spouse	none	none	not change	
	Children under legal age	none	none	not change	
17.	Mr. Pramual Chanpong	none	none	not change	Director resigned with effect on December 1, 2017
	Spouse	none	none	not change	
	Children under legal age	none	none	not change	

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, 2017

No.	Name	(As of December 31, 2016) Shareholding/ Number of shares	(As of December 31, 2017) Shareholding/ Number of shares	Share Increase (decrease) during the year
1.	Mr. Sukrit Surabotsopon	0.03915% 8,000,000	0.04160% 8,500,000	0.00245% 500,000
	Spouse	none	none	not change
	Children under legal age	none	none	not change
2.	Mr. Pongraphan Titathavewatana	0.00178% 364,478	0.00203% 414,478	0.00024% 50,000
	Spouse	none	none	not change
	Children under legal age	none	none	not change
3.	Mr. Somkiat Lertritpuwadol	0.00145% 295,580	0.00145% 295,580	not change
	Spouse	0.00008% 15,900	0.00008% 15,900	not change
	Children under legal age	none	none	not change
4.	Ms. Rachadaporn Rajchataewindra	0.00011% 22,000	0.00011% 22,000	not change
	Spouse	0.00029% 60,000	0.00029% 60,000	not change
	Children under legal age	none	none	not change
5.	Mr. Thammasak Panyowatkool	none	none	not change
	Spouse	none	none	not change
	Children under legal age	none	none	not change
6.	Mr. Pravet Assavadakorn	0.00124% 253,600	0.00124% 253,600	not change
	Spouse	0.00012% 25,000	0.00012% 25,000	not change
	Children under legal age	none	none	not change
7.	Ms. Monwipa Choopiban	none	none	not change
	Spouse	none	none	not change
	Children under legal age	none	none	not change
8.	Ms. Awrapin Kettratanakul	0.00045% 92,721	0.00045% 92,721	not change
	Spouse	none	none	not change
	Children under legal age	none	none	not change
9.	Mr. Sirimet Leepagorn	0.00055% 113,292	0.00055% 113,292	not change
	Spouse	0.00015% 29,862	0.00015% 29,862	not change
	Children under legal age	none	none	not change

No.	Name	(As of December 31, 2016) Shareholding/ Number of shares	(As of December 31, 2017) Shareholding/ Number of shares	Share Increase (decrease) during the year
10.	Mr. Kraisit Anukoolutaiwong	0.00000% 1	none	donate to Saijai Thai Foundation
	Spouse	none	none	not change
	Children under legal age	none	none	not change
11.	Ms. Wanida Utaisomnapa	0.00103% 210,440	0.00103% 210,440	not change
	Spouse	none	none	not change
	Children under legal age	none	none	not change
12.	Mr. Chalor Panutrakul	none	none	not change
	Spouse	none	none	not change
	Children under legal age	none	none	not change
13.	Mr. Veerawat Srinoradithlert	0.00005% 10,579	0.00005% 10,579	not change
	Spouse	none	none	not change
	Children under legal age	none	none	not change
14.	Mr. Woravuth Sivapetranart	0.00088% 179,351	0.00088% 179,351	not change
	Spouse	none	none	not change
	Children under legal age	none	none	not change
15.	Mr. Vichit Nittayanonte	0.00163% 333,394	0.00163% 333,394	not change
	Spouse	none	none	not change
	Children under legal age	none	none	not change
16.	Mr. Phothiwat Paopongchuang	0.00031% 64,320	0.00031% 64,320	not change
	Spouse	none	none	not change
	Children under legal age	none	none	not change

In 2017 and 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 hold 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.

### Compliance

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 defines a corporate compliance

policy of IRPC and Group and sets up a new unit (the 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 the laws and good governance. The unit reports the results to the Board for acknowledgement.

To ensure efficient compliance implementation, "The Corporate Compliance Policy of IRPC and Group Companies" was announced on November 17, 2016, 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 business operation to ensure smooth operation 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 the IRPC Group companies 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 the IRPC Group companies 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 the IRPC Group companies 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 the IRPC Group companies are to protect intellectual properties of IRPC or IRPC Group of Companies, 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 the IRPC Group companies are to avoid becoming part





of money laundering networks or sponsoring terrorism causes. To this end, it values oversight and provision of clues 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 the IRPC Group companies 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 benefits 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 the IRPC Group companies 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.

#### **Compliance mission:**

Compliance implementation in 2017 was highly evident. IRPC in collaboration with leading consultant PricewaterhouseCoopers ABAS Ltd (PwC) set a direction for its compliance framework to suit its organization structure and nature of business on a par with international best practices and international standard. The framework was completed in late 2017, and a Pilot Group was appointed to carry out a test for concrete implementation. In addition, to ensure implementation alignment with IRPC's vision and strategic plans, a five-year compliance roadmap was defined. The Board meeting to consider corporate strategic plans (2018 BOD-STs) approved the roadmap and the implementation under the roadmap, which targeted "zero non-compliance" in pursuing Compliance DNA.

## IRPC INFORMATION

<b>Company Name</b>	IRPC Public Company Limited
<b>Symbol/ Ticker</b>	IRPC
<b>Company Registration</b>	0107537002567
<b>Type of Business</b>	Petroleum and Petrochemical
<b>Industry</b>	Resources
<b>Sector</b>	Energy & Utilities
<b>Registered Capital</b>	Baht 20,475,000,000, consisting of 20,475,000,000 common shares at Baht 1 per share
<b>Paid-up Capital</b>	Baht 20,434,419,246, consisting of 20,434,419,246 common shares at Baht 1 per share
<b>Location</b>	<b>Headquarters and Plant:</b> 299 Moo 5, Sukhumvit Road, Choen Noen, Rayong, Thailand Tel. + 66 (0) 3861-1333 Fax. + 66 (0) 3861-2813 <b>Bangkok Office:</b> 555/2, Energy Complex, Building B, 6 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Tel. + 66 (0) 2765-7000 Fax. + 66 (0) 2765-7001
<b>Website</b>	www.irpc.co.th

### References

<b>Share Registrar</b>	Thailand Securities Depository Company Limited 93 Ratchadaphisek Road, Din Daeng, Bangkok 10400 Tel. + 66 (0) 2009-9000 Fax. + 66 (0) 2009-9991
<b>Auditor</b>	Mr. Permsak Wongpatcharapakorn CPA No. 3427, Deloitte Touche Tohmatsu Jaiyos Advisory Co., Ltd. 11/1 AIA Sathorn Tower, 23 <sup>rd</sup> -27 <sup>th</sup> Floor, South Sathorn Road, Yanawa, Sathorn, Bangkok 10120, Thailand Tel. + 66 (0) 2034-0000 Fax + 66 (0) 2034-0100
<b>Baht Bond Registrar</b>	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 the IRPC

No.	Company	% of shares holding	Paid- up Capital (Million Baht)
1.	<b>IRPC Oil Co., Ltd.</b> <b>Address:</b> 555/2 Energy Complex, Building B, 7 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Tel. +66 (0) 2646-6666 Fax. +66 (0) 2646-6677/ 6688 <b>Type of Business:</b> Sale of refined products	99.99%	2,000
2.	<b>Rakpasak Co., Ltd.</b> <b>Address:</b> 555/2 Energy Complex, Building B, 7 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Tel. +66 (0) 2646-6666 Fax. +66 (0) 2646-6677/ 6688 <b>Type of Business:</b> Marine logistics <i>Remarks: Subsidiary of IRPC Oil Co., Ltd.</i>	99.99%	30
3.	<b>IRPC Technology Co., Ltd.</b> <b>Address:</b> 309 Moo 5, Sukhumvit Road, Choeng Noen, Rayong Tel. +66 (0) 3889-9130-2 Fax. +66 (0) 3889-9130-2 ext. 301 <b>Type of Business:</b> Vocational School	99.99%	750
4.	<b>IRPC Polyol Co., Ltd.</b> <b>Address:</b> 555/2 Energy Complex, Building B, 7 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Tel. +66 (0) 2646-6700 Fax. +66 (0) 2646-6702 <b>Type of Business:</b> Production and sale of polyol	74.99%*	300
5.	<b>IRPC A&amp;L Co., Ltd.</b> <b>Address:</b> 555/2 Energy Complex, Building B, 9 <sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Tel. +66 (0) 2649-7511 Fax. +66 (0) 2649-7550 <b>Type of Business:</b> Sale of polymers and resins	59.98%	10
6.	<b>IRPC Clean Power Co., Ltd.</b> <b>Address:</b> 299 Moo 5, Sukhumvit Road, Choeng Noen, Rayong Tel. +66 (0) 3861-1333 Fax. +66 (0) 3861-2813 <b>Type of Business:</b> Generation and sale of electricity and stream	48.99%	3,083
7.	<b>UBE Chemicals (Asia) Public Company Limited</b> <b>Address:</b> 98 Sathorn Square Office Tower, 18 <sup>th</sup> Floor, North Sathorn Road, Silom, Bang Rak, Bangkok 10500 Tel. +66 (0) 2206-9300 <b>Type of Business:</b> Production and sale of petrochemicals	25.00%	10,739

No.	Company	% of shares holding	Paid- up Capital (Million Baht)
8.	<b>PTT Energy Solutions Co., Ltd.</b> <b>Address:</b> 555/1 Energy Complex, Building A, 4 <sup>th</sup> - 5 <sup>th</sup> Floors, Vidhavadi Rangsit Road, Chatuchak, Bangkok 10900 Tel. +66 (0) 2140-2000 <b>Type of Business:</b> Engineering Consultancy	20.00%	150
9.	<b>Sarn Palung Social Enterprise Co., Ltd.</b> <b>Address:</b> 555/2 Energy Complex Building B, 5 <sup>th</sup> Floor, Vibhavadi-Rangsit Rd., Chatuchak, Bangkok 10900 <b>Type of Business:</b> Supporting execution of social enterprise	15.00%	2.5
10.	<b>Rayong Acetylene Co., Ltd.</b> <b>Address:</b> 2/3 Moo 14, Bangna-Trad Road, Km. 6.5 Bang Kaeo, Bang Phli, Samut Prakan Tel. +66 (0) 2338-6100 Fax. +66 (0) 3862-1602 <b>Type of Business:</b> Production and distribution of acetylene gas	13.04%	115

## Remarks:

- The Board approved the increased selling of investment funds of IRPC Polyol Company Limited of approximately 25 percent to PCC Rokita SA, Poland on December 20, 2017. After such selling, the ratio of shareholders will be 50:50
- Illustrate only the companies with an operation.

## Shareholding Structure

As of February 24, 2017, the closing date of the share register book, IRPC's top ten shareholders were as follows.

Name	Shares	% shares
1. PTT Public Company Limited	7,869,694,600	38.51
2. Government Savings Bank	1,950,000,000	9.54
3. Thai NVDR Company Limited	1,704,884,129	8.34
4. CHASE NOMINEES LIMITED	437,751,314	2.14
5. Social Security Office	301,477,200	1.48
6. STATE STREET BANK AND TRUST COMPANY	299,506,147	1.47
7. STATE STREET BANK EUROPE LIMITED	268,791,579	1.32
8. HSBC (SINGAPORE) NOMINEES PTE LTD	176,023,417	0.86
9. PEOPLE'S BANK OF CHINA	134,589,600	0.66
10. EAST FOURTEEN LIMITED-DIMENSIONAL EMER MKTS VALUE FD	121,938,200	0.60

Note:

<sup>(1)</sup> PTT Public Company Limited as the Company's majority shareholder has a part in setting the policy, management and operation of the Company through the approval of the Board of Directors of the Company as at December 31, 2017. It has four out of 15 persons who are directors or executives of PTT Public Company Limited.

<sup>(2)</sup> Thai NVDR, a subsidiary of the Stock Exchange of Thailand (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](http://www.set.or.th).

<sup>(3)</sup> The Company has no shareholding agreement in matters affecting the administration of the Company.

<sup>(4)</sup> Shareholders who were foreigner could hold shares of the company amounting to not more than 49 percent of the total issued and paid-up shares as of February 24, 2017. The Company's shares held by foreigners amounted to 12.50 percent of total shares and had a free float of 47,472 cases, representing 51.60 percent.

## 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 capital provisions, as required by IRPC's regulations and by law. Such dividend payment is subject to its investment plans and other obligations 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 reserved investment budget as required by law, or against other obligations as seen fit by each affiliate's Board.





# BUSINESS STRUCTURE

BUSINESS STRUCTURE AND SHAREHOLDING

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NATURE OF BUSINESS

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INTEGRATED REFINERY AND PETROCHEMICAL  
COMPLEX FLOW CHART

---

PRODUCTS

---

MARKET OVERVIEW AND INDUSTRY OUTLOOK

---

REVENUE STRUCTURE

---

CONNECTED TRANSACTIONS



# Business Structure and Shareholding

## IRPC Public Company Limited



### Petroleum Business

#### Refined Product Distribution

- Naphtha
- Gasoline
- Diesel
- Fuel Oil
- Lube Base Oil
- Asphalt

**99.99%**

● **IRPC Oil Co., Ltd.**  
(Refined Product Distribution)

**99.99%**

● **Rak Phasak Co., Ltd.**  
(Marine Transportation Services)



### Petrochemical Business

#### Manufacturing and Distribution of Petrochemical Products

- Olefins
- Aromatics
- Polyolefins
- Styrenics

**74.99%**

25% PCC Rokita SA

● **IRPC Polyol Co., Ltd.\***  
(Polyol Manufacturing and Distribution)

**59.98%**

37% Nippon A&L Co., Ltd.  
3% Other

● **IRPC A&L Co., Ltd.**  
(Styrenics Distribution)

UBE Industries Limited Co., Ltd.

**25.00%**

74% UBE Industries Limited Co., Ltd.  
1% Other

● **Ube Chemicals (Asia) Plc.**  
(Manufacturing and Distribution of Petrochemical Products)



### Supporting Businesses

- Power and public utilities
- Port and tank services
- Asset management business

**99.99%**

● **IRPC Technology**  
(Vocational School)

**48.99%**

51% Global Power Synergy Co., Ltd.

● **IRPC Clean Power Co., Ltd.**  
(Manufacturing and Distribution of Electricity and Steam)

**20.00%**

40% PTT Plc.  
20% PTT Global Chemical Plc.  
20% Thaioil Plc.

● **PTT Energy Solutions Co., Ltd.**  
(Engineering Consultancy)

Remark: - The Board approved the increased selling of investment funds of IRPC Polyol Company Limited of approximately 25 percent to PCC Rokita SA, Poland on December 20, 2017. After such selling, the ratio of shareholders will be 50:50  
- Illustrate only the companies with an operation.

# Nature of Business

Equipped with a refinery and petrochemical complexes located in its own Rayong industrial zone, IRPC is an integrated petrochemical pioneer in Southeast Asia. The zone fully contains infrastructure and basic utilities supporting industries, including a deepsea terminal, oil tank farm, and a power plant.

Below is a business description of IRPC: 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 refinery (the third largest in Thailand) yields LPG, naphtha, gasoline, and diesel. Its Lube Base Oil Group 1 plant (with the largest domestic capacity) boasts a total capacity of 320 KTA, whereas an associated asphalt plant's total capacity is 600 KTA.

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 (1,221 KTA capacity) and aromatics (367 KTA capacity), both serving as downstream feedstock. Sold under the POLIMAXX brand to domestic and international plastic manufacturers, polyolefins consist of HDPE, PP, and polyol (940 KTA capacity); and styrenics (ABS, SAN, EPS, and PS) (334 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.







## 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: 22 Kv, 115 Kv electrical systems, 25 Bar, 45 Bar steam systems. A gas-fired combined heat and power plant is in place, as is a 328-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, the plants has continued to distribute power for more than 1,700 days with zero blackout since April 19, 2012

2. Water: Filtered, demineralized, cooling, raw, and firefighting water for industrial purposes. IRPC is given a raw-water quota by the Royal Irrigation Department and has 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: Nitrogen, instrument air, and plant air for industrial purposes, produced by IRPC's own unit. IRPC also allies directly with leading pneumatic industry producers

4. Wastewater treatment: The membrane bioreactor plus activated carbon adsorption (MBR Plus AC) system contains very efficient bioreaction processes operated under a stable system. Treated water commands quality that regularly passes standards in order to boost 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. This is a deepsea area of the Eastern Region at Amphoe Muang, Rayong, featuring infrastructure, facilities, and international-standard dock services. Available

services include liquid tankfarms for petroleum products and petrochemicals along with modern management systems that are both efficient and safe. Tankfarm facilities located in different regions, namely Rayong Oil Depot, Phra Pradaeng Oil Depot, Ayutthaya Oil Depot, and Chumphon Oil Depot accommodate customers' needs, which supplement the competitiveness of the industrial markets in Thailand. Below are the service details.

- 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 2 million tons. The terminal handles over 260 vessels a year.

- 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 15 million tons (more than 2,100 vessels).

- 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 IRPC's oil product distribution and third parties alike. Equipped with efficient management systems of international standards, IRPC's team is also experienced. Four IRPC oil depots are located in Rayong, Phra Pradaeng (Bangkok), Phra Nakhon Si Ayutthaya, and Chumphon. Each depot features a jetty to accommodate cargo transfers for efficient operation and merchandise distribution to save costs and shorten transport time.

### IRPC Solutions provider business

This is designed to provide full support to investors in IRPC Industrial Zone along with skilled and professional personnel so that their businesses may grow in tandem with those of IRPC, particularly thanks to extra convenience and service speed. IRPC's services are described below.

1. Maintenance services: Services are provided by experienced, specialized, and skilled teams



engaging in the petrochemical business, oil refining, power generation, and other plants, services consisting of plant, machinery, metering instrumentation, electrical maintenance as well as engineering inspection

2. Analytical laboratory services: Equipped with laboratories referenced to ASTM, ISO, DIN, JIS, and AWWA international-standard testing methods, IRPC commands quality assurance systems that are precise and credible. Sophisticated test gear and computerized control programs are in place, certified by ISO/IEC 17025, ISO 9001, ISO 14001, and OHSAS 18001, with around-the-clock service

3. Calibration services: IRPC's calibration laboratory and its Metrology Center have earned ISO 17025 certification and are equipped with advanced equipment and highly experienced calibration technicians performing international-standard procedures and methodologies. IRPC can issue calibration certificates for all equipment that are verifiable against national standards

4. ICT services: IRPC provides ICT services and consultation on systems for all components of businesses, with ICT infrastructure service data center service, ERP/SAP consultant & service, and an ICT training center

5. Engineering services: Services consist of engineering design, planning and estimating, project control, project procurement, documentation and reports, and project management

6. Logistics services: These include transportation services, warehousing and distribution center, and customs clearance

7. IRPC Safety Standard Center (ISSC services): This center offers industrial-standard safety training

8. Truck scale services: Truck and trailer weighing with advanced standard equipment located in IRPC Industrial Zone

9. Materials and Corrosion Center (MCC service): Metallurgical services are available along with sophisticated equipment, consisting of failure investigation, materials and corrosion consultancy services, plant corrosion survey and assessment, corrosion monitoring system, corrosion testing, and technical support service packages.

## Asset management business

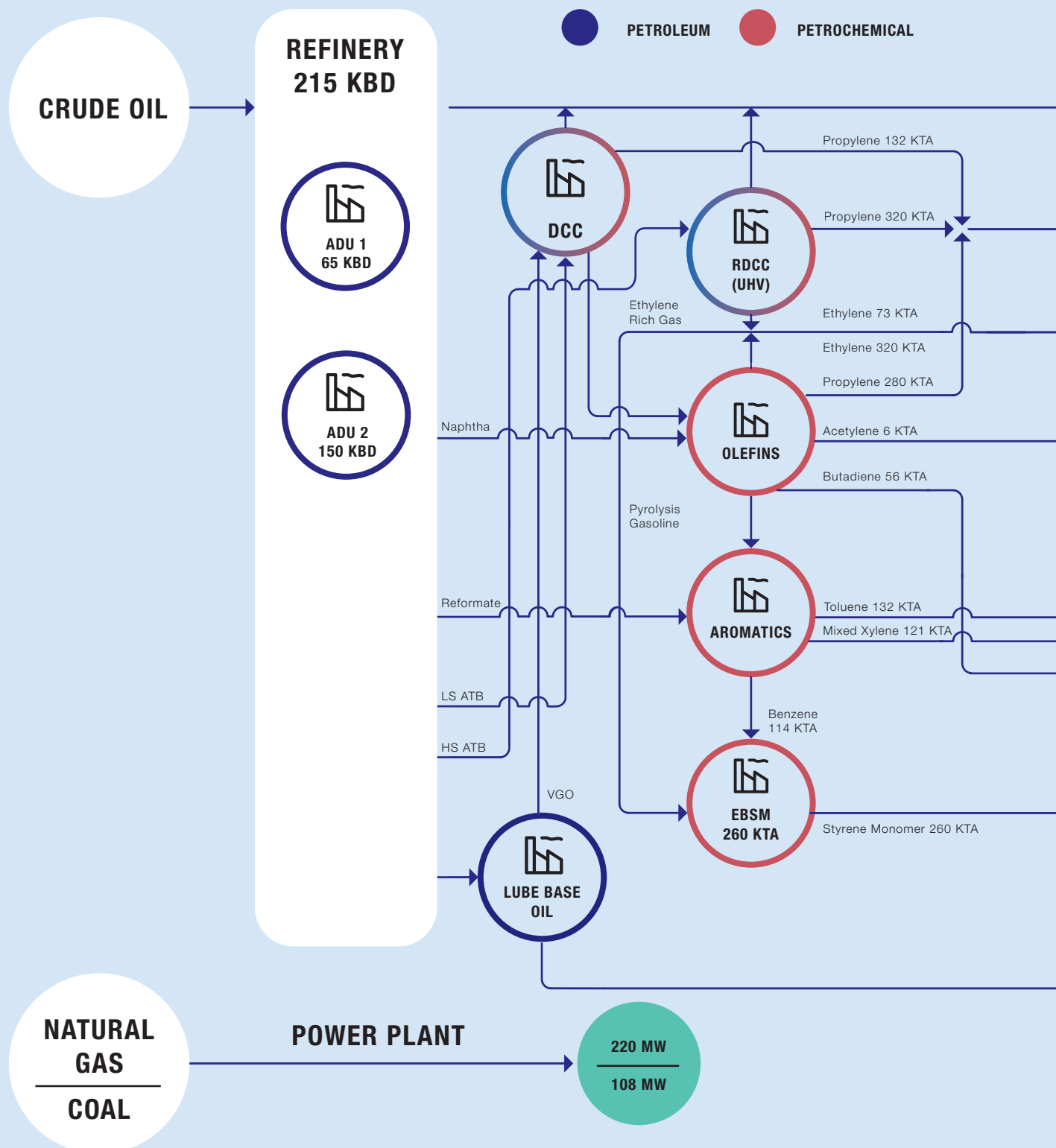
IRPC manages high-potential land in Rayong and other provinces with a total acreage of some 12,000 rai to develop such land into EIZ (Eco-Industrial Zone) projects, including land for industries and high-potential land supporting industrial economic sector expansion that accommodates the Eastern Economic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

1. Industrial zone project: IRPC Eco-Industrial Zone, Amphoe Muang, Rayong: This project is current full of infrastructural and public utility systems, focused on becoming the hub linking the ecology and production chains of materials or upstream products, consisting of an integrated refining and petrochemical industry, heading for the downstream petrochemical industry and direct downstream industry-the heart of modern industries accommodating advanced technological industrial groups.

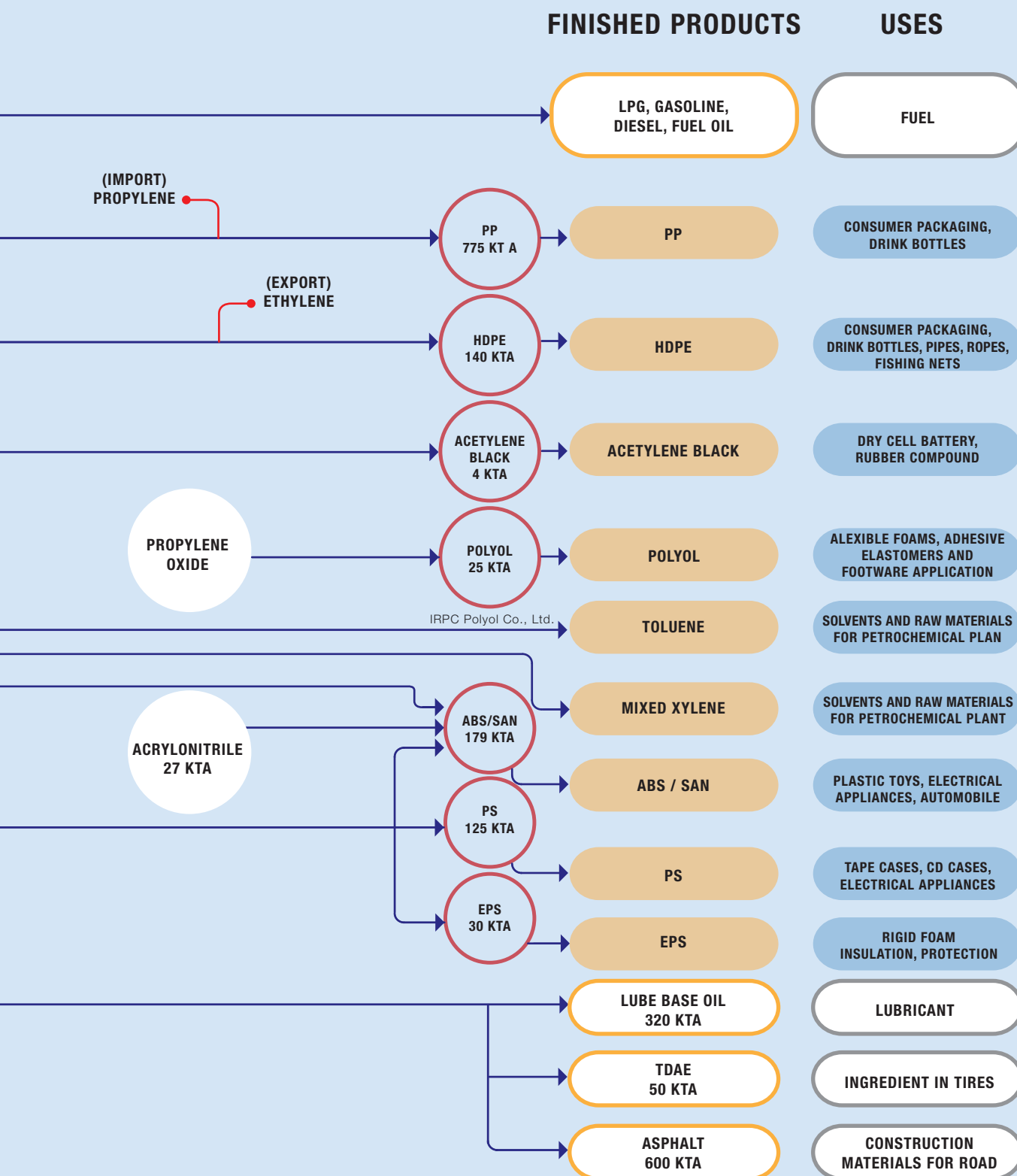
2. Industrial estate project: Rayong Industrial Estate (Ban Khai), Amphoe Ban Khai, Rayong: IRPC won approval for joint undertaking with the Industrial Estate Authority of Thailand in developing this industrial estate to accommodate futuristic industrial groups, consisting of next-generation automotive and smart electronics industries.

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 to accommodate enlargement of the deepsea port development project and public-sector power plants. This 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 petrochemical and petroleum 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 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 common 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 used as a raw material for lubricants for the manufacturing industry, such as automotive and transport.
- 500 SN is used as 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.

- Long Residue—is a heavy distillate obtained from refining processes with applications as raw material for lube base oil.

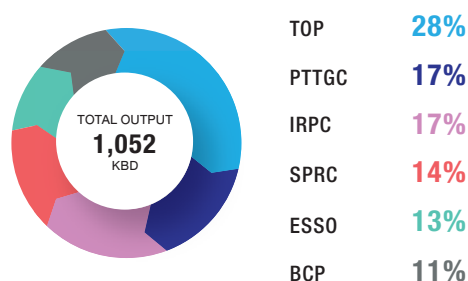
In addition to these products, IRPC features innovative lube base oil, namely Treated Distillate Aromatic Extract (TDAE) and Residue Aromatic Extract (RAE). These find applications as raw materials for automotive tires with reduced polycyclic aromatic hydrocarbons (PAHs), a carcinogen, to demonstrate 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 assorted 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 AND DOMESTIC MARKET SHARES (2017)



Source: Department of Energy Business (January–December 2017)



## Petrochemical Product

### 1. Olefins

Olefin products, namely ethylene, propylene, and butadiene, are feedstock for polymers, namely polyethylene (PE) and polypropylene (PP). IRPC produces 828 KTA of olefins, comprising 360 KTA of ethylene, 412 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 olefin 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.

### 3. Polymers

IRPC produces polymer products of 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 IRPC's HDPE suitable for molding such as pipe extrusion, especially for making water pipes and electrical conduits due to its high resistance to traction and impact. It also boasts high flexibility and high resistance to changing ambience conditions.



### 3.2 Polypropylene (PP)

PP is very similar to HDPE and LDPE and can often replace them. However, PP is tough and strong, with higher resistance to heat and tolerance to pressure and impact. It is strong and tough, not easily corroded, and is chemical-resistant, perfect for producing electrical insulation. PP is generally suitable for the following conversion methods:

- Film-PP is used for producing clear plastic sheets for heat-resistant bags, packaging film, and 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.
- 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-Because of its right properties to form into different shapes, PP has now become more common for sheet extrusion. Recyclable and reasonably priced, it is popular for making document files, vacuum forming work such as packaging, including water cups and trays.

### 3.3 Acrylonitrile-Butadiene-Styrene (ABS)

With properties of high-impact strength, high gloss, high heat resistance, high stiffness and high rigidity, and high chemical resistance, ABS is commonly used for:

- Injection Molding-The method is to inject polymers into various shapes and forms of molds suitable for making:
  - Electrical Appliances-such as parts of rice cookers, irons, phone sets, electric fans, computer keyboards, and television sets due to high resistance

to heat and its glossy surface. Due to its high flow rate and flame retardation, ABS is also easy for metal plating.

- Car Parts-such as side mirrors, glove compartments, dashboards, and motorcycle parts such as the dashboard, mask, radiator guard, mudguard, and safety helmet. This is because of its high heat resistance with high strength and durability. It also has high-impact strength, good adhesion to paint, resistance to solvents like thinner, and a glossy surface.
- Household Appliances-such as furniture parts and sanitaryware because of its high gloss, high impact strength, and high chemical resistance. ABS is also good for metal plating.
- Toys-Since ABS is strong and not brittle, even when broken, it makes no sharp point that harms children. It also has high gloss, which gives bright colors.
- Extrusion-Polymers can be extruded into thin sheets and vacuum-molded into various forms, such as refrigerator walls.

### 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:

- Car 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 PS polymer with high clarity and rigidity, easily molded into various forms without pre-heating. However, it has low-impact strength. It is commonly used for making products that need clarity and a rigid form, such as tapes or CD cartridges, electrical appliances, and household appliances.

- HIPS (High-Impact Polystyrene)

HIPS is PS polymer with higher impact strength than GPPS as a result of blended butadiene in product development, which deprives HIPS of some clarity. Since it is much cheaper than ABS, it often replaces ABS for economic reasons. HIPS, however, has less gloss and a less stable form. GPPS and HIPS are generally used for

- Injection Molding-such as cartridges for tapes and CDs, and household appliances
- Sheet & Film Extrusion-such as ice-cream cups and flower-wrapping film.

### 3.6 Expandable Polystyrene (EPS)

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

- Packaging-such as shock-absorbing foam used in the packaging and electrical appliance industries
- Block-such as heat insulation in the fishery industry's cold storage, construction, and decoration work.

## 4. Polyol

Polyol products, consisting of polyester and polyether polyol, is feedstock for polyurethane, which can be further converted into various products, such as foam for furniture work, heat insulation in construction work and refrigerating appliances, and for making shoe soles. Imported propylene oxide serves as polyol's main feedstock.

IRPC Polyol Co., Ltd, 74.99%-owned by IRPC, is the producer and distributor of polyol products. It has a capacity of 25 KTA and is located in the same industrial zone as that of IRPC in Rayong.



## 5. Specialties and Innovative Products

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

### 5.1 Styrenics products:

- Green ABS–IRPC, the world's first producer of Green ABS, has already filed a patent for its processes, in which natural rubber replaces synthetic rubber in the innovative processing of ABS. The product can be used in a support program for farmers, resulting in reduced imports while observing the Clean Development Mechanism (CDM) initiative. Below are product details.

- 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-bacterial 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 of polymers than conventional plastics. ABS powder can be used with PVC, PC, or PC/ABS to enhance impact strength and heat resistance.

### 5.2 Olefins group, featuring:

- 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, and can be used from -200 to 200 degrees Celsius. Thanks to better properties than those of iron joints and gear, UHMW-PE suits work that needs toughness, strength, resistance to traction, and chemical erosion.

- Baby-Bottle Polypropylene–This is a new option of plastics developed for easy conversion, both injection and blowing methods. The product can tolerate high (over 100 degrees Celsius) heat. It has a stable form, high clarity, and low shrinkage while containing no carcinogens, thus safe for babies.

- Antimicrobial compound–This is a product in the polyolefins group, the properties of which are enhanced to prevent bacteria without harming the usual polymer properties. Upgrading the quality of life with its high safety standard, the product is popularly used in the food packaging industry and medical circles, as well as household appliances.



- Marine Pipes-This compound is made with a special formula to prevent pipe surfaces from shellfish piercing along coastlines and in brackish water areas.

- Natural Coloring and Additive Carrier System

- Natural Coloring-This polymer has a mixture of natural extract colors to reduce the use of synthetic petrochemical colors, such as green from spinach and brown from caramel, to reduce poisonous and heavy-metal residues. The durability of natural colors is the same as that of synthetic colors.

- Master Batch Carrier-This new HDPE product is white powder that blends well with color powder and additives. With a flow index of as high as 33 grams/ 10 minutes, this HDPE can

enhance the dispersion of color powder and additives.

- 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.

## Domestic Polymer Producers and Domestic Production Capacities (2017)

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	Thai ABS Co., Ltd.	179	65
	Ineos ABS (Thailand) Co., Ltd.	95	35
	Total	274	100
EPS	Thai ABS Co., Ltd.	30	50
	Mingdi Chemical Co., Ltd.	30	50
	Total	60	100
PS	Thai ABS Co., Ltd.	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 Product Market

This year's energy consumption in Thailand rose 2.4% from last year in line with its annualized GDP of 3.9% due to the rebounding Thai economy coupled with growth in exports, private consumption, and public spending and overall investment. In the meantime, industries rebounded in wholesale and retail sales, power, natural gas, and fishery, not to mention transport and communication, hotels, and restaurants. All these were a boon to the Thai energy picture this year.

Primary energy consumption rose 2.4%, consisting of oil (2.3% up), renewables (6.5% up), coal/lignite (0.2% up), and imported power (22.8% up) due to the rising hydropower imports from Laos. Meanwhile, natural gas consumption, which took the traditional lion's share of 33%, dropped 0.3%, since this year natural gas distribution from several fields was suspended.

Consumption of high-speed diesel this year averaged 63.86 million liters a day, a 2.6% rise from last year. Its retail sales price averaged Baht 25.39/liter, eclipsing last year's by 11.54% (Baht 2.63/liter). Diesel sales by service stations and to the industrial sector surged this year.

Consumption of gasoline rose 3.8% in line with the rising numbers of passenger cars and motorcycles (19.95%). Its retail sales price averaged Baht 26.48/liter, beating last year's price by 12.28% (Baht 2.90/liter). Land transport consumption for the first nine months inched up 0.39% with greater consumption of gasoline and diesel.

Consumption of LPG and NGV still continued to drop in line with the shrinking numbers of cars powered by these fuels probably because users switched back to gasoline and diesel, whose prices were not excessive, coupled with the smaller number

of LPG-powered and NGV-powered vehicles together with the public policy to restructure fuel prices to illustrate true costs.

The main domestic players are PTT, Esso, Bangchak, Shell, Chevron, and others. Their domestic market shares this year were as follows.

Company	Domestic market share (%)
PTT	39%
Esso	12%
Bangchak	10%
Shell	9%
Chevron	7%
IRPC	4%
Other retail sellers	19%

Source: Dept. of Energy Business (Jan.–Dec. 2017)

### Crude Oil Market and Situation

This year the crude oil price range was USD 53–64/bbl, averaging USD 53.2/bbl for the year in contrast with USD 41.4/bbl last year. The hike was noticeable toward the year-end due to the declining surplus crude volume after healthy growth in oil demand. The global oil demand grew 1.5 million bbl/day to 97.7 million bbl/day, thanks to the recovery of the global economy and the declining US crude oil stocks. Also contributing to this hike was OPEC's meeting on November 30, where OPEC and non-OPEC producers agreed to extend the period for their agreement to cut output capacities by 3–9 months from the original ending date of March 2018, designed to preserve oil price stability. Meanwhile, the producers managed to cut their outputs to near the agreed goals, thus supporting decent prices.

In addition, support came from the situation in the Middle East, where tension brewed over the conflicts between Saudi Arabia and Iran in Lebanon and Yemen; Venezuela's output capacity that dropped to a 28-year low by 2 million bbl/day; the emergency maintenance shutdown of the oil pipeline from Canada to the US in the wake of an oil spill discovery, which resulted in less crude oil being transported to the US. At any rate, the US still commanded high outputs of oil, still relentlessly rising—thus exerting pressure on long-term price prospects.

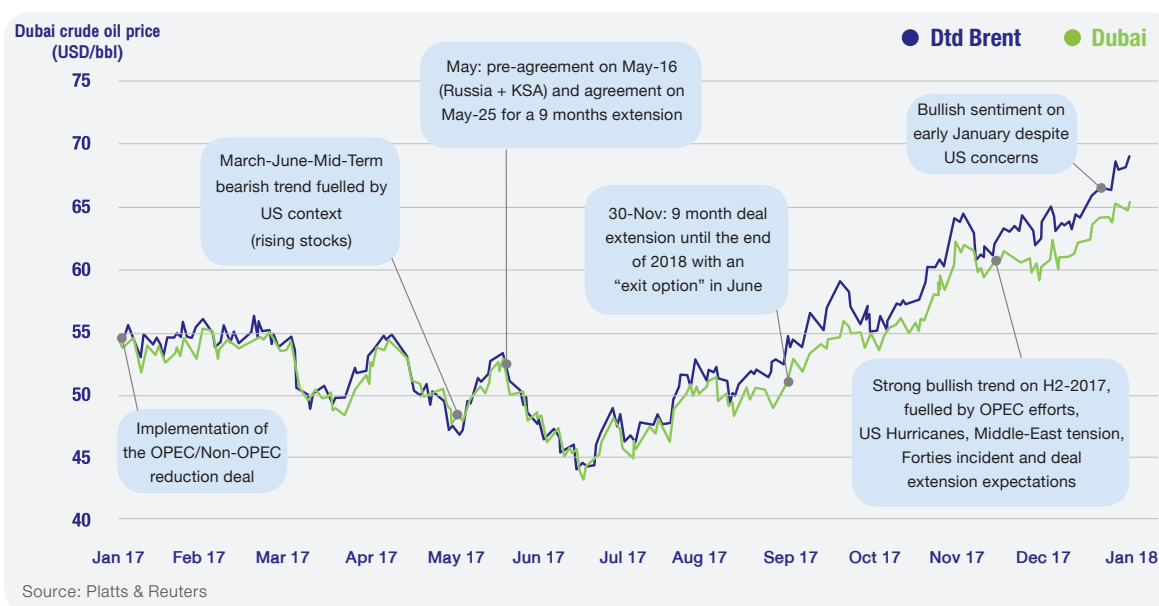
### Price Outlook

For 2018, it is expected that Dubai will cost more than this year and hover in the USD 60–65/bbl range, supported by strong demand rises of 1.3 million bbl/day toward 98.9 million bbl/day in line with the robust recovery of the global economy, both the leading economies and new economies. In addition, major factors supporting this oil price rise include cooperation between OPEC and non-OPEC countries,

led by Saudi Arabia and Russia, on extending the end period of output cuts totaling some 1.8 million bbl/day from in March 2018 to December of the same year; Nigeria and Libya have agreed to join this agreement after being exempted because of domestic unrests. The goal for reduction of OECD stocks now stands at its five-year average. As for market downsides in 2018, geopolitical risks in the Middle East, namely Iraq and Libya, and in Venezuela and Nigeria, are to be closely monitored because they might aggravate tight oil supply.

And yet, the adjustment toward equilibrium in the crude market is risky, since the market could return to a glut due to the relentless expansion of about 1.4 million bbl/day in non-OPEC countries' outputs, most of which come from the US, which is expected to add about 700,000 bbl/day amid rising prices. This could add a tremendous volume to surplus supply and thwart producers' long-term efforts to push the market back toward equilibrium—a pressure on prices, in short.

## Factors affecting crude oil price in the world market



## Customers and Distribution Channels

IRPC focuses on keeping fuel product quality control on a par with the Ministry of Commerce standards and on sale through channels with maximum profits, while setting prices in harmony with market situations and cooperating with affiliates for optimal benefit in strategizing sales. Below is information about customers and distribution channels.

- Sales to direct traders and industry, including car companies, cargo tankers and vessels, buses, construction firms, and others, including sales to affiliates
- Wholesale and sales to jobbers (small and major) that sell products to direct and retail sellers
- Sales to Article 7 traders, meaning major and medium-size oil traders equipped with their own depots and who distribute these fuels through their own networks and through their distribution channels to downstream consumers
- Export to overseas oil traders, broken down into tanker sales (with the main markets in Asia, including Singapore, Cambodia, and Vietnam) and truck sales (with the main markets in Indochina, including southern China, Cambodia, Laos, and Myanmar). This year IRPC commanded 35% of the total sales through exports
- Bunker sales means sales of diesel or automotive diesel oil (ADO) to vessels berthing at IRPC terminals
- Fishery sales means sales of the green diesel type to Thai Seas Fishery Association. IRPC commanded a 52% market share this year.

## Proportions of Fuel Sales

The table below shows IRPC's proportions of fuel sales this year.

Type of sale	Proportion (%)
1. Wholesales	27%
2. Export (including fishery)	41%
3. Sales to Article 7 customers	30%
4. Sales of industrial users	2%

Source: IRPC's Petroleum Business Department

## Competitive Strategies

IRPC stresses sales strategies of maintaining product quality standards, meaning clean energy of standard quality from its refinery together with quality services through the most advanced and systematic ordering system. IRPC pioneered regional petroleum businesses with its PDA on Mobile system via the IRON system. It increases the number of customers and sales volumes by way of suitable marketing margins. Described below are its services.

- Depots: Five depots serve regional customers, with the Rayong Depot open around the clock. This year an oil sales point was added at the IRPC Mae Klong Oil Depot, Samut Songkhram, to add services to customers in the West and upper South
- Transport: Oil trucks deliver fuels to customers across the country, including tankers, vessels, and ports/ terminals
- Personnel: Sales agents and sales coordinators, as well as the sales service department, serve customers. A ticket-issuing office takes fuel purchase orders from customers through the SAP system, which manages connected databases. SAP can update online and real-time data for accuracy and uniform standards, thus raising operating efficiency and getting rid of redundancies. SAP also provides databases supporting analysis, decision-making, and administration for all executives and workers. IRON (IRPC Oil on Net) is an electronic sales administration system that combines the caliber of the supply chain administration system with the developed Total Business Solution to meet the needs of customers' transactions and raise their business efficiency. At the same time, IRPC keeps on improving its systems to accommodate applications in assorted phases to in turn accommodate sales through other channels
- Quality inspection: IRPC's technical officers serve, educate, and solve problems for customers, apart from visiting service stations and oil depots to check on quality and boost customers' confidence in quality.



## 2 Petrochemical Market and Competition

### Competition

The total export and import values of petrochemicals this year dropped 10.17% and 8.81% due to oil price volatility of the main raw material feedstock, which was in down-cycles, together with the fragile recovery of the world economy, particularly the economy of Thailand's key export markets, namely China, the US, the EU, and Japan.

This year's domestic economy was projected by NESDB to grow by 4.3% from 3.8% in the previous quarter the highest growth rate over 18 quarters. As for expenses, supporting factors arose from the expanding merchandise exports and the continued growth in private consumption, public spending, and overall investment. Concerning manufacturing, industrial manufacturing showed clear signs of recovery and better supported the economy. The domestic economy of Q3/2017 grew 1% from Q2/2017. Finally, the first nine months showed 3.8% growth.

This year IMF also raised its projection of world economic growth to 3.6%, which was 0.1% over its July estimate. IMF viewed healthy short-term growth for several regions, particularly the new economies. When compared with previous estimates of April and July, economic growth projections for the leading economies were marked up: Eurozone (2.1% this year and 1.9% for 2018), Japan (1.5% and 0.7%). In contrast, Asian new economies like China would grow 6.8% and 6.5%; India, 6.7% and 7.4%; on the whole, the new economies and developing countries, 4.6% and 4.9%.

Yet, IMF was less upbeat in projecting the US economy because of political uncertainty, whereas they viewed the UK economy as still exposed to Brexit risks. It estimated that the US economy would grow 2.2% this year and 2.3% in 2018, which caused IMF to expect no additional stimulus one normally expects from the tax reform policy. As far as the UK economy is concerned, the agency pared its projection in line with the more subdued growth of

the first half of the year, as domestic consumption growth proved sluggish and the pound weaker. It was also viewed that the UK's medium-term growth could pose great uncertainty due to Brexit impacts on international trade and international financial activities. Below are factors or events that could inhibit growth in the world economy:

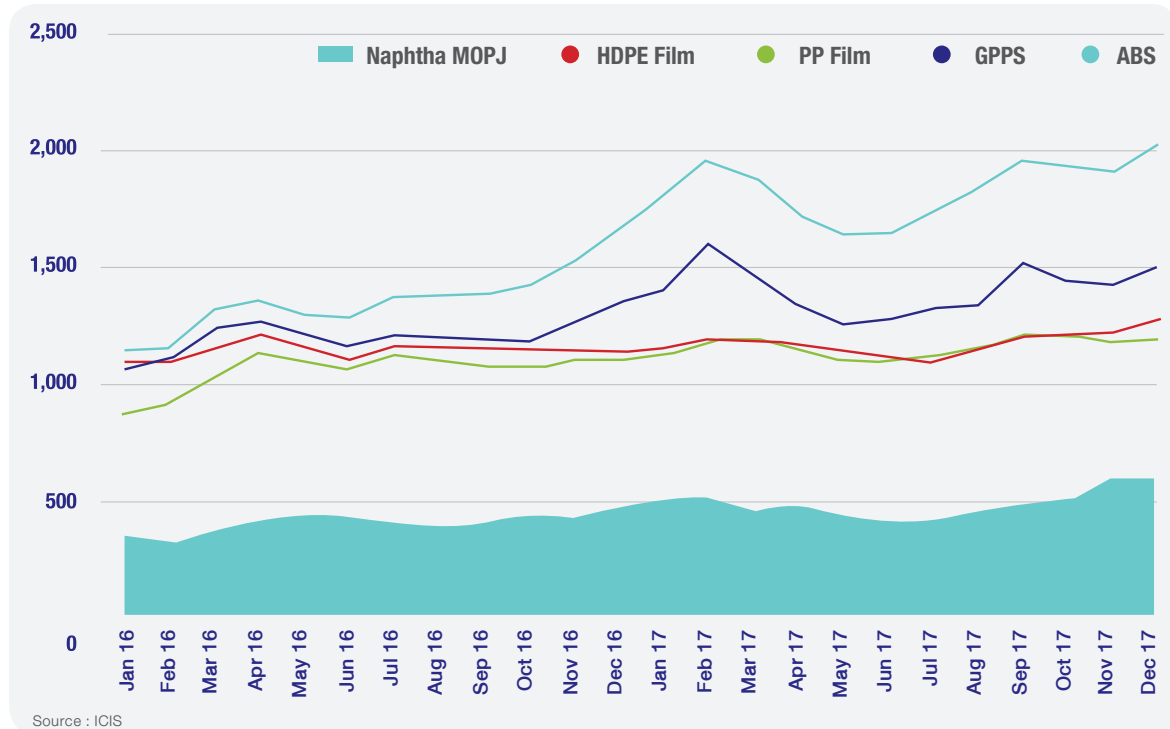
1. Tighter money supply as a result of higher long-term interest rates, whereas headline inflation remains low
2. Increased debt problems in China
3. Debt-financing and payment in the new economies and countries relying on loans, which would have a higher cost of funds as a result of soaring overall interest rates
4. Risks arising from trade protectionism and geopolitical problems in the Korean Peninsula and the Middle East, which could lead to tensions and affect world economic recovery.

This year, however, featured a stronger Baht. Q3/2017 saw the average Baht value of 33.37 to the US dollar, 2.7% appreciation from the average of the previous quarter varying with the dollar's weaker trend projected by investors more or less coinciding with the US Fed's hiking of interest rates; delays in the implementation of economic stimuli after the US Senate had vetoed the new Health Insurance Bill, which affected the budget supporting such measures. In the meantime, the Baht benefited from inflowing funds resulting from the current account surplus and capital in the form of foreign investors' debt instruments.

The prices of monomers and polymers this year were all healthy, in line with the directions and volatility of feedstock, namely crude oil and naphtha. Here are polymer price comparisons this year versus last year: PP, up 0.72%, averaging \$1,151/ton; HDPE, up 0.51%, averaging \$1,160/ton; PS, up 3%, averaging \$1,393/ton; and ABS, up 4%, averaging \$1,819/ton. For monomers, ethylene, up 4%, averaging \$1,072/ton; propylene, up 1.46%, averaging \$813/ton; and SM, up 2%, averaging \$1,241/ton.

USD/Ton

## Prices of Feedstock and Petrochemical Products



## Growth Outlook

An upbeat projection is in store for the Thai petrochemical industry for 2018, thanks to a more robust GDP and growth of downstream industries. NESDB projected the 2018 GDP at 3.6-4.6%. The key continuing supporting factors from this year are the expanding global economy, the momentum from public investment that shows acceleration trends and progress of key investment projects as well as the rising investment budgets; resilient private investment; continuing healthy trends of key economic sectors; and rising hiring as well as the population income base in the economic regime. Investment in various public projects would speed up demand for polymers, in turn benefiting the petrochemical industry.

For 2018, IMF has projected the global economy to grow 3.6% and 3.7% versus its previous projections in April at 3.5% and 3.6%. Accounting for this are the increased economic estimates of the first half-year, when several groups of countries commanded better growth than expected, a proof of continuing global economic recovery (Source: IMF, World Economic Outlook, October 2017).

IMF viewed short-term growth as improved for several regions, particularly the new economies. When compared with previous estimates of April and July, economic growth projections for the leading economies were marked down: Eurozone (2.1% this year to 1.9% for 2018), and Japan (1.5% to 0.7%). By contrast, Asian new economies like China would grow 6.8% to 6.5%; India, 6.7% to 7.4%; and overall, the new economies and developing countries, 4.6% and 4.9%. The world economic growth this year was supported by domestic demand and resilient labor markets, which are expected to roll over into 2018. Yet, the inflation rates of the developed countries will likely remain lower than 2%, although they could inch up in 2018.

Nonetheless, IMF shaved its projected US economic growth because of political uncertainty, while the UK remained exposed to Brexit risks. It was projected that the US economy would grow 2.2% this year and 2.3% in 2018. The overriding factor is its political uncertainty, prompting IMF to expect no additional stimuli arising from the tax reform policy. As for the UK economy, the forecast has been trimmed

in line with the growth of the first half of this year, which fell below projection on account of sluggish domestic consumption and the weakening pound. What is more, the medium-term growth of the UK is fraught with high uncertainty due to Brexit impacts on trade obstacles, labor migration, and international financial activities.

As far as the global economy is concerned, IMF foresees greater long-term economic risks than short-term ones. In the short term, consumers' confidence and the more robust business sector may cause the global economy to outdo projections despite the political uncertainty in the US and Brexit fallouts. In the long term, several factors may inhibit the global economy: tighter money supply than expected due to long-term interest rate being hiked in line with market mechanisms amid low headline inflation rates; debt problems in China are projected to rise, causing an economic slowdown in that country; debt-financing and debt payment in the new economies and those countries relying on loans will incur higher cost of funds amid higher overall interest rates. Besides, risks arising from trade protectionism and geopolitical problems in the Korean Peninsula could bring tensions and global economic recovery at any given moment.

For Thailand in 2018, the trend appears promising, with growth projections as high as 3.6–4.6%, against 3.9% this year and 3.2% in 2016. The inflation rate should be 0.9–1.9%, with supporting factors from world economic growth and continued exports, causing industrial manufacturing to command clear recovery and do a better job of propping up economic growth. The same with overall investment, which looks to be speeding up in line with private investment. Though private investment this year began leveling off and returning to growth from Q2/2017, the growth seen was still subdued by surplus capacity limitations of the industrial sector, which was quite high during the first half of the year.

At any rate, private investment in 2018 will probably pick up fast, supported by rising industrial capacity utilization, which until recently stood at 62%. Notable industries with 65–70% capacity utilization

include electronic bulbs and components. Industries with over 80% capacity utilization include manufacturing of automotive and engine components. Still, positive developments are in line with the business sector's confidence index, which in September stood at 52.2 (a five-month peak). These included progress in public investment projects, supporting direct and indirect private investment; positive adjustments of economic confidence, supported by domestic atmosphere and domestic political conditions, recovery of the export sector and the overall economy, and the public sector's measures and policies for driving the economy and constantly growing economic potential.

Therefore, one can reasonably project growth in the domestic petrochemical industry in line with global and domestic GDP growth as well as supporting and downstream industries; crude oil price rises; regional trade economy; global economy; and growth in downstream and related industries, namely the plastics industry.

The petrochemical industry's constraints include volatile oil prices, weakening major currencies of trade partner countries, including the euro, the yen, and the yuan, which tends to weaken with China's economic and monetary policies. Such currency depreciation poses barriers to export growth and puts pressure on recovering prices of merchandise in the world markets.

## Strategies for competition

### Prices

Polymer prices fluctuate considerably with several factors, particularly raw material costs of crude oil, naphtha, and monomers together with demand and supply in markets across the globe. IRPC therefore sets prices with these considerations in mind, referencing them to market situations, and using price intelligence sources from world-class analytical houses like ICIS, Platts, and HIS in conjunction with internal factors including stocks and production costs so as to remain competitive worldwide. The emphasis is on being a low-cost producer thanks to integrated petrochemical business



operations, equipped with production support systems like tank farms and deepsea ports. In short, IRPC holds an advantage on costs, making it competitive even in market doldrums.

### Quality

Being Thailand's petrochemical industrial pioneer with experience in R&D of the needs for goods closely with customers over the years, coupled with the ISO 9001 accomplishment of all its polymers, IRPC commands remarkable capability for boosting customers' confidence in product quality of international standards. IRPC supplies and develops novel grades of polymers to efficiently meet the needs of customers worldwide. Its polymers are of the natural grade, color compound grade, and composite grade (colored polymers with assorted reinforcing fillers).

Thanks to these fine properties, IRPC has been able to meet specific application needs of customers, including parts manufacturing of electrical appliances and automotive parts. To this end, its compounding and composites plants are located near other polymer plants under IRPC Group's management, thus providing convenience and flexibility for IRPC for taking tailor-made orders from

customers. What is more, IRPC's technical service section can advise customers about the choices of polymers before selling them, in addition to mentoring and jointly solving problems with them after sale.

IRPC's concerns about the stewardship of the environment, occupational health, and safety are illustrated by its concrete policy on the stewardship of the environment and safety of employees and communities evident in its certification for ISO 14001 and TIS 18001 for all its polymers. Besides, its ethylene, PE, PP, and PS polymers have earned CSR-DIW (Standard for Corporate Social Responsibility) certificates from the Department of Industrial Works.

### Product variety

Today, IRPC Group commands some 1 million tons per year of polymer capacity (HDPE, PP, EPS, PS, ABS, and SAN), making it not only convenient but also flexible for product presentation to customers, for certain polymers are interchangeable in certain markets. For instance, HDPE and PP are interchangeable in injection molding for kitchen utensils, woven bags, and woven canvas. In other words, the choice of polymers hinges on factors like properties, price, and market supply. Being a producer with diversity represents wider business opportunities. That is why IRPC and its distributors worldwide can offer a variety of polymer products to cut the average sales prices per unit of marketing efforts.

### Sales service strategies

This year IRPC continued to focus on CRM activities for domestic sales agents and traders in Vietnam and Indonesia to constantly promote sales, develop products, and take part in merchandise expositions year-round.

### Domestic and overseas sales agent seminars

Each quarter, IRPC organizes domestic sales agent seminars, where its executives meet and greet



all sales agents to share knowledge of plastics and petrochemicals and their situations, data of all IRPC polymers, and problems faced in joint business undertakings. That way, both sides can tackle problems head-on, which enables business partners to succeed.

In addition, this year's IRPC seminars for domestic and overseas customers include:

- An "IRPC-Marine Treasure Conservation" seminar in Phangnga for customers and traders from 30 countries aimed at providing IRPC's market intelligence and petrochemical product data before participation in a CSR activity under a project to conserve marine turtles at the Marine Turtle Conservation Center, in that province's naval base. This activity fostered the confidence in doing business together and cordial relations, and enabled IRPC to thank customers for their consistent trust in its products and services.
- An "IRPC Business Forum 2017" under the "Turning the Business Page to Conquer Mission 4.0" theme on September 26, designed to provide a knowledge forum and expand business perspectives from the direct experiences of experts in the public

and private sectors. Business operators would then keep pace with dynamic changes today and be able to modify ideas as their approaches to sustainable businesses. An IRPC product expo was also staged on

Pim-L: An acetylene black product and an essential component of lithium batteries, poised for extended development into electric car batteries

PP in-line compound: Premium polymers suiting manufacturing of automotive and electrical appliance parts

Chlorine-resistant pipe HDPE compound: Polymers designed for manufacturing of high-pressure water pipes that withstand chlorine corrosion and are long-lasting

Non-flammable EPS: Designed for construction work, this lightweighted grade commands high insulation properties. Once it catches fire, this sturdy, weather-resistant material will soon self-extinguish.

PP spun bond: PP for fiber applications can find diverse uses, including agriculture, baby diapers, sanitary masks, or automotive decoration.



Consumers and traders participated in CSR activity under a project to conserve marine turtles at Phang nga.



## Nature of customers

Most customers are sales agents, none of whom holds more than 30% of IRPC's sales revenue. No obligation has been made to sell to any customer more than 30% of IRPC's future revenue. IRPC therefore is exposed to no risk of reliance on any customer.

## Sales and Distribution Channels

### Domestic sale

Since polymers form the essential basic feedstock of domestic manufacturing of consumer products, IRPC's focus is on domestic sale. This year it sold 55% equivalent of its revenue to domestic customers or raised sales with domestic customers' demand to support Thailand's economic strategies and business operators. IRPC sells through 21 appointed agents that are skillful and ready to provide services, most of whom have engaged in businesses with IRPC for over two decades. IRPC's integrated petrochemical production of a variety of products enables its agents to save marketing and management expenses, which has contributed to greater security of business relations between IRPC and the agents. Finally, IRPC engages in direct sale to reliable customers, taking into account their readiness and ability to pay.

### Export

This year IRPC posted international polymer sales through traders and agents in other countries with long-standing business relations. Its marketing strategies focus on the traditional strengths of product quality and variety, technical services, and mentoring on product development. These agents in turn have close and extensive networks with end-users in major markets with high polymer consumption, including China, Indonesia, Turkey, Vietnam, and Australia. Also, IRPC grew its export markets to regions like Africa, Europe, the US, the Middle East, and Australia. Today, IRPC products are sold to over 100 countries.

## 3 Market and Competition for Power and Public Utility Businesses

IRPC formed business alliance with IRPC Clean Power Co., Ltd., which can support and enhance its power systems by 54 MW and steam by 170 tons per hour. As a result, it commands security and potential, apart from efficiently meeting higher demand.

## 4 Market and Competition for Port and Tank Businesses

This year the port and tank services posted over Baht 734 million in revenue, a Baht 42-million (6%) drop from last year. Of this, the port business and the tank business share 50% each. The drop in revenue arose from IRPC's annual turnaround of about 45 days. Port services saw some 17 million tons of cargo transfers, comparable to last year. IRPC applied a strategy of customer base expansion and generated additional revenue from its major customers in the bulk & container group, including iron ores, palm shells, coal, granite, sand, fertilizers, and structural items. The volume transferred was about 2 million tons, primarily goods in the iron and steel business. This year saw about 240,000 tons of granite transfer or about 14%. In addition, improvement has been made to the liquid & chemical terminal to accommodate novel products from IRPC's assorted projects, including UHV, PPE, PPC, and third-party customers. The volume transferred here was about 15 million tons. As for tank services, some 700,000 tons of cargoes were transferred, a 2% gain over last year, due to expanded services for products like ethanol and methanol.

## Outlook

Based on NESDB's projections of the Thai economic outlook for 2018, growth of 3.6-4.6% is to be supported by healthy global economic growth, which supported exports; the apparent accelerated drive of public investment; the positive adjustment of private investment in the real sector, which appears



healthier than last year; and the positive adjustment of hiring and income base of the population. In place is investment in several infrastructural projects, which is a factor supporting economic growth. Such projects have contributed to a higher capacity of the iron and steel industry, the major customer group of the bulk & container terminal, the critical factor supporting greater import and export volumes through IRPC ports.

- Bulk & container terminal: For 2018, IRPC plans to expand port services to accommodate the public policy on “Eastern Economic Corridor (EEC)” with a focus on providing offshore services, fabrication, and cargo transfers through its terminals

- Liquid & chemical terminal: For 2018, IRPC is committed to developing and expanding its services to accommodate rising capacities, while investigating port business opportunities in Amphoe Chana, Songkhla, of the South.

As for tank service trends, given the domestic economic growth forecast in 2018 and the chemical

group growth foreseen, this spells opportunities for the service to attract new service users or tank service for new products, or both. An instance is the crude oil tank service for Thai Oil Plc, with a 600,000-barrel additional volume. Finally, IRPC has examined the feasibility of a chemical tank fabrication project at the Phra Pradaeng Oil Depot.

## 5 Market and Competition for Asset Management Business

IRPC’s plan is to develop its Eco-Industrial Zone (EIZ) and the Rayong Industrial Estate (Ban Khai) to accommodate the growth of the industrial sector in line with the EEC, an investment supporting strategy. Specifically, IRPC will ready the infrastructure to match target industries. It has incorporated some project areas as part of the EEC to pilot Thailand’s special economic zone development and promote industrial development to leapfrog and connect investment with ASEAN members and other regions of the world.

## Nature of Business Operation

IRPC and its subsidiaries have recognized revenues from selling various products, consisting of revenues from petroleum products which is equivalent to 68 percent of revenues from net sales. IRPC's major products comprise of diesel, benzyne, fuel oil, basic lubricant and asphalt. Revenue proportion of petrochemical products is estimated at 30 percent of its major revenues; namely, olefins, aromatics, various types of polymer or polypropylene. Besides, IRPC's revenues are also derived from other businesses, with an approximate of 2 percent from electricity and public utilities. In 2017, IRPC recognized net revenues from sales at 197,594 million baht. Details are as follows:

Business	Operator/ IRPC equity	2017		2016		2015	
		Baht Mil.	Ratio	Baht Mil.	Ratio	Baht Mil.	Ratio
1. Petroleum	IRPC, IRPC Oil (99.99%)	143,295	72%	113,152	67%	135,125	68%
2. Petrochemical	IRPC, Thai ABS (99.99%) IRPC Polyol (79.99%) <sup>(1)</sup>	53,111	27%	52,115	31%	59,728	30%
3. Others <sup>(2)</sup>	IRPC	3,189	1%	3,082	2%	2,741	2%
Total net sales revenue		199,595	100%	168,349	100%	197,594	100%
Share of profit (loss) from investment in associates and joint ventures		(184)		125		388	
Domestic: export sales revenue		61% : 39%		58% : 42%		57% : 43%	

Note: <sup>(1)</sup> IRPC's Board approved the selling of investment funds to IRPC Polyol Company Limited with an increase of 25 percent to PCC Rokita SA, Poland on December 20, 2017. After the selling of investment funds is completed will enable the ratio of shareholding of 50:50.

<sup>(2)</sup> Other business consists of revenues from electricity and public utilities.

## Connected Transactions

For Fiscal Year 2017, IRPC engaged in connected transactions with related companies or parties, either as major shareholders or having common directors, or both. These transactions were based on market prices or, in the absence of market prices, the prices as agreed in the agreements at reasonable prices and fair conditions. The relationship and connected transactions are described below:

Connected Party/ Relationship	Transaction	2017	2016	Nature and Condition
<b>PTT Plc (PTT)</b> Relationship: IRPC's major shareholder with 38.51% interest Common director: Mr. Tevin Vongvanich PTT Management on IRPC Board: Mr. Chansin Treenuchagron Mr. Kris Imsang Mr. Sukrit Surabotsopon	- Sale of goods - Purchase of goods - Other revenue  - Sales & administrative expenses - Interest payable  - Account receivable - Account payable - Other receivable - Other payable	21,495 130,474 7  39 22  1,477 22,675 - -	18,100 108,594 8  43 -  1,175 16,653 1 2	IRPC sold petroleum products to PTT IRPC bought crude oil and natural gas from PTT IRPC received transport compensation and personnel wages from PTT Personnel expenses paid to PTT  IRPC paid short-term interest (ICBL) to PTT. No outstanding payment at year-end
<b>PTT Global Chemical Plc (PTTGC)</b> Relationship: 48.89% of shares held by PTT	- Sale of goods - Purchase of goods - Other revenue - Sales & administrative expenses - Account receivable - Account payable - Other receivable	13,850 19,547 7 - 1,303 1,911 2	9,591 13,317 - 1 1,397 1,481 -	IRPC sold petroleum products to PTTGC IRPC bought petroleum products from PTTGC IRPC provided research services to PTTGC Personnel expenses paid to PTTGC
<b>Thai Oil Plc (TOP)</b> Relationship: 49.10% of shares held by PTT	- Sale of goods - Revenue from dividends - Account receivable - Account payable	94 70 8 -	95 56 8 2	IRPC provided tank storage service to TOP IRPC received dividends from TOP shares
<b>Thai Lube Base Plc (TLB)</b> Relationship: 99.99% of shares held by TOP	- Sale of goods - Purchase of goods - Account receivable	327 20 -	280 4 37	IRPC sold aromatics to TLB IRPC bought asphalt product and lube base oil from TLB
<b>Thai Paraxylene Co., Ltd. (TPX)</b> Relationship: 99.99% of shares held by TOP	- Purchase of goods - Account payable	1,178 134	824 21	IRPC bought aromatics from TPX
<b>Thaioil Marine Co., Ltd. (TOM)</b> Relationship: 99.99% of shares held by TOP	- Service revenue - Account receivable	17 3	14 2	IRPC provided port services to TOM
<b>TOP Solvent Co., Ltd. (TS)</b> Relationship: 99.99% of shares held by Thaioil Solvent Co., Ltd.	- Sale of goods - Purchase of goods - Account receivable - Account payable	1,259 81 116 8	1,217 82 100 8	IRPC sold aromatics to TS IRPC bought solvents from TS
<b>TOP Solvent (Vietnam) Co., Ltd.</b> Relationship: 99.99% of shares held by TOP Solvent Co., Ltd.	- Sale of goods - Account receivable	446 22	735 40	IRPC sold aromatics to TOP Solvent (Vietnam)

Connected Party/ Relationship	Transaction	2017	2016	Nature and Condition
<b>Sak Chaisidhi Co., Ltd. (SAKC)</b> Relationship: 80.52% of shares held by TS	- Sale of goods - Account receivable	314 10	251 8	IRPC sold aromatics to SAKC
<b>PTT Energy Solutions Co., Ltd. (PTTES)</b> Relationship: 40.00% of shares held by PTT 20.00% of shares held by IRPC Common director: Mr. Sukrit Surabotsopon	- Sales & administrative expenses - Other payable	135 -	139 1	IRPC paid for technical services to PTTES
<b>PTT Exploration and Production Plc. (PTTEP)</b> Relationship: 65.29% of shares held by PTT Common director: Mr. Tevin Vongvanich	- Other receivable	1	-	IRPC provided training services to PTTEP
<b>Energy Complex Co., Ltd. (EnCo)</b> Relationship: 50.00% of shares held by PTT Common director: Mr. Kris Imsang	- Sales & administrative expenses - Other payable	95 -	94 1	IRPC rented offices and facilities from EnCo
<b>PTT International Trading Pte. Ltd. (PTTT)</b> Relationship: 99.99% of shares held by PTT	- Sale of goods - Purchase of goods - Sales & administrative expenses - Expenses from oil futures contracts - Account receivable - Other payable	285	513	IRPC paid premiums for building, health and accident insurance to TIP
<b>PTT Tank Terminal Co., Ltd. (PTTTANK)</b> Relationship: 99.99% of shares held by PTT	- Other revenue - Other receivable	4 1	3 1	IRPC received personnel wages from PTTTANK
<b>Business Services Alliance Co., Ltd. (BSA)</b> Relationship: 25.00% of shares held by PTT	- Other revenue - Sales & administrative expenses - Other payable	3 266 2	3 229 1	IRPC Oil earned revenue for store administrative services from BSA IRPC paid personnel wages to BSA
<b>Sport Services Alliance Co., Ltd. (SSA)</b> Relationship: 99.99% of shares held by BSA IRPC Management on Board: Mr. Phothiwat Paopongchuang	- Sales & administrative expenses	5	5	IRPC funded publicity for the PTT Rayong soccer team for SSA
<b>PTT Polymer Logistics Co., Ltd. (PTTPL)</b> Relationship: 99.99% of shares held by PTTGC.	- Sales & administrative expenses	2	2	IRPC paid transport fees to PTTPL



Connected Party/ Relationship	Transaction	2017	2016	Nature and Condition
<b>PTT Polymer Marketing Co., Ltd. (PTTPM)</b> Relationship: 99.99% of shares held by PTTGC.	- Sale of goods - Purchase of goods - Account receivable - Account payable	124 594 8 40	161 623 8 53	IRPC sold polymers to PTTPM IRPC bought polymers from PTTPM
<b>Polymer Marketing DMCC (PMDMCC)</b> Relationship: 99.99% of shares held by PTTPM	- Sale of goods - Account receivable	104 -	20 10	IRPC sold polymers to PMDMCC
<b>PTT Asahi Chemicals Co., Ltd. (PTTAC)</b> Relationship: 50.00% of shares held by PTTGC.	- Purchase of goods - Account payable	1,693 198	1,158 122	IRPC bought acrylonitrile (AN) from PTTAC
<b>HMC Polymers (HMC)</b> Relationship: 41.44% of shares held by PTTGC.	- Other revenue	-	1	IRPC provided training services to HMC
<b>PTT Digital Solution Co., Ltd. (PTT DIGITAL)*</b> Relationship: 40.00% of shares held by PTTGC 20.00% of shares held by PTT Common director: Mr. Chansin	- Other revenue - Sales & administrative expenses - Other payable	- 32 26	1 35 2	IRPC earned revenue from program development for PTT DIGITAL IRPC paid for IT services to PTT DIGITAL
<b>Thai Styrenics Co., Ltd. (TSCL)</b> Relationship: 99.99% of shares held by PTTGC	- Sale of goods - Account receivable	2 -	198 24	IRPC sold aromatics to TSCL
<b>TOC Glycol Co., Ltd. (TOCGC)</b> Relationship: 99.99% of shares held by PTTGC	- Purchase of goods - Account payable	40 11	34 10	IRPC Polyol bought petrochemicals from TOCGC
<b>NPC Safety and Environmental Service Co., Ltd. (NPC S&amp;E)</b> Relationship: 99.99% of shares held by PTTGC	- Sales & administrative expenses	2	2	IRPC paid for safety equipment rent to NPC S&E
<b>PTT Maintenance and Engineering Co., Ltd. (PTTME)</b> Relationship: 99.99% of shares held by PTTGC	- Sales & administrative expenses - Other payable	42 5	8 10	IRPC paid engineering design fees to PTTME
<b>Global Green Chemicals Plc (GGC)</b> Relationship: 72.29% of shares held by PTTGC	- Purchase of goods - Account payable	- -	317 13	IRPC bought petroleum products from GGC

Connected Party/ Relationship	Transaction	2017	2016	Nature and Condition
<b>IRPC Clean Power Co., Ltd. (IRPC-CP)</b> Relationship: 51.00% of shares held by GPSC 48.99% of shares held by IRPC IRPC Management on Board: Mr. Pongraphan Titathavewatana Ms. Ratchadaporn Rajchataewindra Mr. Sirimet Leepagorn	- Sale of goods and services	69	76	IRPC sold power and steam and provided engineering services to IRPC-CP
	- Purchase of goods	1,660	2,055	IRPC bought power and steam from IRPC-CP
	- Other revenue	6	4	IRPC received central (common) services charges from IRPC-CP
	- Account receivable	10	28	
	- Account payable	103	250	
	- Other payable	197	184	

Note:

ICT Solution Co., Ltd., renamed as PTT Digital Solution Co., Ltd. (PTT DIGITAL) on June 22, 2017.

## 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 and PTT affiliates are inevitable and therefore regarded as normal business operations. These transactions included buying and selling of oil products and related services, as well as other normal business-supporting transactions, which were executed on an arm's length basis 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, reasonable and independent consideration of these connected transactions in its best interests.

## Connected Transaction Measures

IRPC complied with SEC's and SET's requirements concerning 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 reasonable manner. Any directors, employees or related parties with potential conflicts of interest must leave the 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 benefits to 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. The 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 concerning 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.



# MANAGEMENT ANALYSIS

MESSAGE FROM THE PRESIDENT

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PERFORMANCE SUMMARY

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EVEREST

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HUMAN RESOURCE MANAGEMENT  
AND DEVELOPMENT 2016

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RESEARCH & DEVELOPMENT FOR EXCELLENCE

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MANAGEMENT DISCUSSION AND ANALYSIS

## Message from the President



### Dear Shareholders,

The year 2017 marked another success for IRPC in achieving its established goals to gain profits not less than the previous year regardless of the Major Turnaround of overall IRPC's facilities during the first two months of the first quarter. The success of such project is illustrated below.

Upstream Project for Hygiene and Value-Added Products or UHV which could operate commercially throughout the year for the first time. Although the

ability to create added value has not completely fulfilled owing to the downfall of propylene, considered as a major component, coupled with the production capacity that is lower than expected, IRPC solved this problem through continuous projects such as catalyst reformulation, mix gasoline project including catalyst cooler project in which this continuous project will enhance the efficiency of UHV to create added value of at least 1 US dollar per barrel.

Fully Integrated Polypropylene Project (PPE/PPC) of polypropylene to increase production capacity of PPE/PPC to 300,000 tons per year will be completed at the end of this year and can create added value of approximately 0.8 US dollars per barrel, including IRPC clean power project to produce 240 mw electricity in which IRPC had invented with Global Power Synergy Public Company Limited (GPSC) and will be completed at the end of this year as well.

The EVEREST project, one of the important strategies of IRPC to create added value by applying best practices from world-class consultant with every sector of IRPC's operation which encompasses Production, Commercial, Procurement including other supporting units throughout the organization and can foster added value of 7,000 million baht within this year and expect to achieve its objective of 10 billion baht within 2018.

“

**As for 2018 operation plan, IRPC has specified the business plan to support the organization's growth in the future by adhering to the Best Practice from the EVEREST Project which incurred the total revenues of 7,218 million baht.**

”

All of the above projects will support IRPC to definitely achieve its outstanding performance in 2018.

IRPC defines its objectives of consistently creating more revenues until it reach the Top Quartile level of petrochemical industry to achieve its mission of “the Leading Integrated Petrochemical Complex in Asia by 2020”. Such objective is considered a challenging task and requires cooperation of the entire organization to move forward every project to its ultimate success. Apart from its business management on the foundation of good corporate governance, IRPC strives to develop human resource management system to become “HR Excellence” coupled with an instill of **New IRPC DNA** to increase its efficiency while emphasizing on corporate ownership notion, achieving outcomes, maintaining promises, constantly developing, working cooperatively and offensively solving problems that will ultimately drive the organization toward its success and sustainability.

For 2018 operation plan, IRPC has defined a new strategy under the name “GDP: Power of Growth, Power of Digital and Power of People by establishing the “Office of the Strategic Management and Administration” as an ad hoc unit to move forward key organization's strategies to success as the Everest Project, one of the major projects under GDP strategic plan, consisting of the EVEREST Forever (E4E), an investment project on the construction of paraxylene with approximate production capacity of 1 million tons per year or equivalent to an investment of 1 billion US dollars. In addition, IRPC 4.0 had been implemented by applying digital system and state-of-the-art innovation with every step of business operation as well as the project to select and develop new leaders to continue missions in driving the organization in the future. These projects help elevate the level of competitiveness of the organization.

Nonetheless, our stride toward IRPC's vision by 2020 would be unsustainable unless IRPC strived for nonmonetary returns as well. For instance, it is imperative that IRPC make itself conscientious, ethical, responsible for society, communities, and the environment, and respect human rights, for these are the cornerstones of sustainable success. It was therefore encouraging to see IRPC earn a fourth consecutive year of DJSI (Dow Jones Sustainability Indices) membership in the Oil & Gas Refining and Marketing group; an SET Sustainability Award; and an NACC Integrity Award presented by the Office of the National Anti-Corruption Commission for second year. These three accolades speak volumes for IRPC's sustainable growth-our collective pride.

I would like to take this opportunity to express my sincere gratitude to every shareholder, the Board, customers, business partners, financial institutions, community, employee and every related person who consistently support and have faith in our business operation. With every factor encouraging IRPC's sustainable growth and development, I am definitely confident that we can move the company toward the goal of “Getting to the Top and Staying There”.



**Mr. Sukrit Surabotsopon**  
President



## Performance Summary

A “Leading Integrated Petrochemical Complex in Asia by 2020” vision was proclaimed by IRPC, designed to constantly improve its production efficiency with stability and to manage its supply chains while engaging in production planning for maximum efficiency. All the while, IRPC recognizes the primary need for safety, occupation health, society, communities, and the environment around its sites so as to prepare to internationalize its operations in goods and services to accommodate future market needs.

This year IRPC was committed to executing the EVEREST Project, continuing from last year, with two critical goals: profit increase of some US\$ 300 million (Baht 10.5 billion) a year and development of the organization health toward the top quartile. Thanks to efficient management practices in driving this project together with all employees’ commitment, the project achieved its challenging goals.

To enable IRPC to continue to grow, the management has defined GDP strategic directions and execution (Power of Growth, Power of Digital, and Power of People) to set goals for profits, business growth, corporate excellence, and IRPC upgrading to world-class in parallel with the cultivation of the IRPC DNA and i-SPIRIT values, designed to enhance employees’ capability and awareness of this company to which they belong so that they all can jointly grow it toward sustainability. The key is to strike a balance between the economic, social, and environmental aspects while exerting corporate governance and risk management to lead to sustainable corporate governance.

Here are the performance highlights for the year.



### 1. Economic

Focusing on strengthening its core business, IRPC adapts its strategies to engage in business and make profits amid increasingly fierce business competition stemming from external factors concerning the crude price, which surged from last year and hovered at a high level, thanks to the output curb agreement between OPEC and non-OPEC producers, the weakening US dollar, and the US crude oil inventory. All these factors contributed to an average Dubai price of US\$ 53 a barrel this year.

The global GDP, meanwhile, expanded by 3% (World Bank, January 2018), driven by key factors, namely private consumption buoyed by the fully recovering labor market in several regions, recovering world trade boosting exports’ role in enhancing growth in exporting countries, and, finally support from the fiscal policy push.

Leading economies like the US, EU, and China are bound to grow further. The US economic growth is supported primarily by private consumption and





investment, but offset by political issues and precarious government stability due to President Trump's policies. The EU's economic growth, on the other hand, looks very promising as political concerns subsided. Anyway, risks still remain in Brexit negotiations, which will ripple through trade and investment terms in the UK and the EU.

China's economy is bound for healthy growth despite negative investment trends. As for Thailand, the year's GDP of 3.9% is the Bank of Thailand's projection (January 2018), a 0.7% gain from the previous forecast, thanks to better exports than forecast, led by agricultural produce, food and drinks, and electronic parts.

Meanwhile, private consumption grew, evident in the number of cars sold an indication of expenditure of medium-income to high-income population, and public consumption grew because of economic stimuli via the government's measures to help those with low income and measures to stimulate investment in provincial areas. That said, the appreciating Baht depressed the income of farmers and exporters, while subduing the domestic purchasing power of households of the middle-income to low-income group, which were still feeble.

As for private investment, recovery was slow, with the public sector's investment in response to future investment through infrastructural projects, transport, and EEC (Eastern Economic Corridor Project). In all, the tourism sector and the service sector continued to drive the country's fundamental economy, which seemed to be on a rise.

Below are the highlights of IRPC's economic performance this year.

### **1.1 Production operations**

For competitiveness, IRPC's goal is for operational excellence and relentless production efficiency with stability. Add to these elements efficient energy-related production cost management and production planning that meets market needs through flexibility, and due regard for safety and occupational health, society, communities, and the environment around IRPC Industrial Zone, together with relentless cultivation of the safety culture, a crucial operating factor for the workforce.

Below are the highlights of production operations.

1.1.1 Process improvement and machinery efficiency improvement of the group of plants, totaling

167 projects, including the Reliability Improvement DCC Flue Gas Cooler Project, UHV Gasoline Mode Operation Project, and Ethylene Purification Unit Project to give process control precision and accuracy, yielding products of desirable qualities and quantities while lowering process energy. Finally, a Fire Protection System Project was designed to monitor safe operation and enhance confidence in plant stability and safety.

**1.1.2 Process stability improvement:** IRPC underwent the annual major turnaround to ensure that its production is reliable and prepared, which resulted in production as planned and prevention of impacts from unplanned shutdowns. This turnaround achieved all its planned goals for 2017. The continuing subset projects included 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 99.4% performance against the goal of 99.5%.

**1.1.3 Energy management:** IRPC's ability to systematically manage energy was demonstrated through a project to raise energy efficiency. Specifically, more natural gas was consumed in place of fuel oil in processes, and a management software was applied to improve internal processes for higher process efficiency. Also, by efficiently controlling and monitoring outcomes, IRPC successfully controlled hydrocarbon compound losses from processes, thus cutting pollutant emissions. As evidence, the energy intensity index (EII) met the goal at 90.4%, equivalent to energy reduction of 1.9 million gigajoules, or Baht 749 million.

**1.1.4 QSHE management:** IRPC is committed to business operational excellence and sustainable growth under its Operational Excellence system.



## 1.2 Key strategic project operation for business growth

IRPC's growth goal is to attain world-class security for business leadership with 14% ROIC (return on invested capital) by 2020. Therefore it defined directions and strategies under the GDP plan involving three sources of energy, detailed below.



## Power of Growth

IRPC's approach for extending its investment scope for relentless growth is to focus on raising the productivity of green petrochemicals, market expansion to ASEAN, cooperation with business partners for incremental interests, and development of high-value products with innovation excellence, including the Paraxylene Project, which carved investment opportunities for value addition to existing products so as to come up with new products of high market interest. To this end, heavy naphtha is transported from the refinery's UHV for use as a process raw material with competitive production costs. This year the project is under the technology selection stage and is due for completion in the first quarter of 2018.



## Power of Digital

IRPC's approach for digitalization and application of advanced technology is meant to streamline operation, upgrade operating processes, enhance plant efficiency, and digitize the entire customer services known as the IRPC 4.0 Project. The project is under investigation with the consultant, and a master plan is due for completion in the first quarter of 2018.



## 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, inspire people to work, and develop leadership to galvanize these into a new corporate culture in line with IRPC's growth.

Below are the highlights of key strategic projects this year.

### 1.2.1 EVEREST Project

To forge incremental profits from enterprise business operations and strengthen the organization health, this project saw cooperation with a world-class consultant company in advocating and driving IRPC's approaches to raise operating efficiency to ensure that IRPC can sustainably maintain profitability. The project embraces operations, integrated supply chain, commercial, procurement, and corporate areas. This year IRPC reaped Baht 7.218 billion in benefit, as detailed below.

### Operations area

Operations area, focusing on raising efficiency and process stability, contributed to Baht 3.011 billion against the goal of Baht 2.751 billion, consisting of:

1. Unit operation and energy improvement through a focus on process efficiency improvement, energy consumption reduction or switching to lower-cost energy forms together with process loss reduction to enable reuse in parallel with model plant operation to change employees' attitudes and behavior and efficient teamwork management

2. Maintenance and reliability improvement by lowering risks of unplanned shutdowns and proceeding with process improvement to ensure planned execution. This year's availability was about 96.99%, comparable to the 97% goal, and the number of plants without unplanned rose to 12 as opposed to 10 last year.



### Integrated supply chain

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 Baht 2.077 billion in EBIT against the Baht 1.921-billion goal.

### Commercial area

Commercial area, focusing on raising commercial operating efficiency and raising incremental profits from routine operation, development for higher team capability with a commitment to pursuing ways to make profits through brainstorming for new projects while nurturing ownership awareness and enhancing problem-solving skills. Teams were to be coordinated to achieve goals. This year a total of Baht 1.179 billion in EBIT was realized as opposed to the Baht 1.348 billion.

### Procurement area

Procurement area, focusing on the management of material procurement and strategic services and on enhancing purchasing teams' caliber to adopt strategic attitudes and operating efficiency by leveraging new tools to add bargaining power with explicit regard for ethics, transparency, and fairness in business dealings. This year's successful Baht 411 million in EBIT against the goal of Baht 353 million together with the adoption of new international-standard tools, including e-Auction, e-Catalog, and e-Buyer to upgrade its practices to digital procurement helped cut our procurement costs of goods and services.

### HR area

HR area, focusing on the management of human resources for maximum efficiency, encouragement of their maximum showcasing of their capability and responsibility, hiring freeze, mutual separation plans (MSPs), and efficient outsourcing. This year, as a result, IRPC achieved Baht 217 million in EBIT as opposed to the goal of Baht 813 million.

### Corporate area

Corporate area, with a focus on functional excellence across the board, a fundamental for developing cross-functional Group excellence, including the improvement of expenses for IT equipment gear, reduction of financial expenses and administration expenses, and budget management. This year IRPC successfully achieved Baht 323 million in EBIT as opposed to the goal of Baht 330 million.

In addition, the EVEREST Project featured organization health operation to enable IRPC to sustainably maintain competitiveness. This year the organization health index (OHI) stood at 78, an improvement over last year's score of 70.

#### 1.2.2 UHV (Upstream Project for Hygiene and Value-Added Products)

This project seeks to raise competitiveness and foster sustainable growth to improve the quality of low-value heavy oil and add value to it. Key products consist of propylene and heavy naphtha. Secondary ones consist of ethylene, butane, propane, LCO, light naphtha, hydrogen, sulfur, fuel gas, and CLO. The project is currently running full-steam ahead, using PP as a raw material for the Fully Integrated Polypropylene Project and the Polypropylene Compound Project. To accommodate prevailing circumstances, IRPC extended work on UHV as described below.

- The Maximum Gasoline Project: This undertaking raised the gasoline capacity from 95 million to 120 million liters a month, in turn raising IRPC's market share and income by about Baht 870 million a year. Construction work began in November last year and ended in October this year. After testing in July, commercial operation began in November this year.
- The RDCC Catalyst Reformulation Project: This project raised propylene output from 18% to 21%. It will start making up new catalysts to replace old ones from this year-end to the middle of 2018.
- The UHV Catalyst Cooler Project: This project aimed to grow production capability by using heavy oil as a raw material while doing away



with temperature constraints in the catalyst regenerator. An engineering design company is being selected, machinery is being procured, and EPC construction for ISBL and OSBL was completed. The project is now in the detailed engineering design stage.

### 1.2.3 Fully Integrated Polypropylene Project

This project seeks to improve and expand PP capacity to 300 KTA at a budget of US\$ 236 million to strengthen IRPC's core business with a total capacity of 775 KTA. At the same time, it hiked competitiveness by improving product quality 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): Investment will be made to install additional machinery to grow capacity by 160 KTA from the current capacity of 475 KTA. Construction work began in May 2013 and ended in August this year. After testing, it went commercial in September this year.
- PPC (PP Compounding Project): High-efficiency "In-line Compounding" technology is used here for the 140-KTA operation. The propylene compound licensor and producer commands 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 began in May 2013 and ended in October this year. Testing began in November this year and the project went commercial in December 2017.

## 1.3 Business operation

An IRPC goal is to grow its profits by requiring EBITDA growth of 10%. This year its EBITDA amounted to Baht 20.42 billion, against Baht 17.43 billion last year, some Baht 2.99 billion (17%) up. The net profit came to Baht 11.354 billion, against Baht 9.721 billion last year, a gain of Baht 1.633 billion (17%) from its suite of efficiency improvement projects.

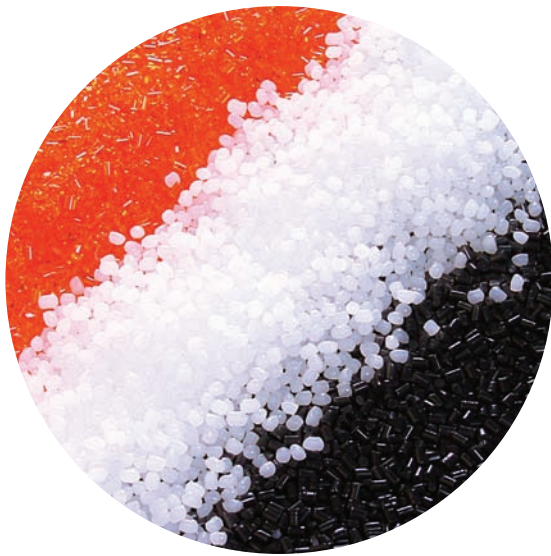
Below are the highlights of key business moves made this year.



### 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 Baht 135.125 billion in sales revenue. EBITDA came to Baht 7.51 billion, a 55% gain over last year's EBITDA of Baht 4.844 billion. Below are strategic implementation highlights.





### Petrochemical business

To profit through incremental spreads, IRPC focuses on relentlessly promoting and supporting R&D to develop special-grade products, deciding the sales proportions of these products at 60% by 2020. This year the petrochemical business generated Baht 59.728 billion in sales revenue, of which domestic sales accounted for 57%; exports, 43%. IRPC's EBITDA totaled Baht 11.028 billion, a 2% rise from last year's Baht 10.857 billion.



### Other support businesses

#### (a) Power and utilities

IRPC's goal is to provide integrated quality utility services to meet the needs of target industries and fully support businesses with due regard for harmonious co-existence among communities, society, and the environment. Its businesses consist of services for power, steam, public utilities, and others, including water and air systems, and wastewater systems. This year saw Baht 2.754 billion made in revenue.

#### (b) Port and tank farm

IRPC's goal is to relentlessly improve the quality of its product tanks and port services to meet customers' diverse needs with a focus on advanced, international-standard, and safe management systems. This year the business generated Baht 734 million, down Baht 42 million (6%) from last year. The port business and the tank farm businesses generated about the same income. The lower income this year was due to a lower throughput accompanying the annual maintenance turnaround.

#### (c) Asset management

This year it generated Baht 48 million in land sale, land lease, and the zone's central utility fees of about Baht 33 million.





## 1.4 Research and development operations

Gearing toward R&D Excellence, IRPC is fully committed to relentlessly expanding research and development (R&D) products aiming to strengthen its position to grow its business sustainably by consistently increasing its competitiveness to retain and grow its market share. Its strategy includes horizontal and vertical integration by extending its businesses to adjacent opportunities, creating more value-added products, and generating a New S-Curve by continuously searching for new long-term business development. This demands fully integrated management that can be effectively modified to fit the corporate culture together with a clearly defined master plan, execution plan, and continuous advancement of its competitiveness via R&D comparable to leading global corporations. To achieve business sustainability, it is therefore essential to strongly support R&D capital investment for tangible returns which are value-added.



### The highlights of key R&D operations are as follows:

1.4.1 Develop and install a Transformation Office mechanism, which is a new management process towards R&D excellence aiming for ensuring achievement of planned and budgeted research projects. The process is designed with systematic operating procedures and tracking mechanisms. The process was developed from the Everest Project best practice, including the use of digital control and close monitoring.

1.4.2 Modification of the Product Development Committee meeting format and procedures to signify mutual decision-making among all business units involved. The change was necessary to ensure alignment of goals toward new product launch in the market and to jointly, proactively develop solutions to

all problems, intended to maximize efficiency through coordination among all business units and optimize the benefits to IRPC.

1.4.3 Seeking new S-Curve and business opportunities through De novo Research R&D program focusing on researching new and in-line with megatrend technologies such as electronic materials, energy storage and nano-materials. These research efforts are jointly conducted with leading domestic and international academic institutes 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.

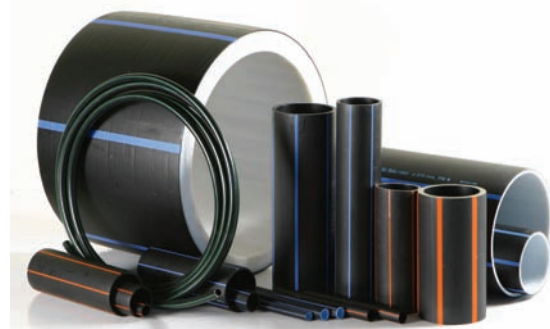


1.4.4 IRPC seriously encourages researchers to undergo domestic and international training to improve R&D capabilities, including the Scale-Up Team's long-term training with R&D leaders such as Nippon A&L for ABS product development skills, and to integrate best practices from technology leaders to enhance in-house research.

1.4.5 IRPC pursues innovation investment on the "Production Process of Ultra-High Molecular Polyethylene (UHMWPE) with Novel HA2PO catalyst" Project. UHMWPE is an engineered plastic with properties superior to common polyethylene, including higher endurance to impact forces, tensile forces, erosion and chemical corrosion. UHMWPE is a breakthrough product, as it provides many more opportunities for producing other value-added products.

1.4.6 Innovative products developed by the R&D team that were commercially launched to markets in response to various customers' needs and can be applied to multiple functions are as follows:

- Polypropylene for coating and lamination on woven plastic bags to enhance adhesive efficiency on material surfaces and even coating thickness, while coating film remains clear, glossy and tensile-tolerant, known as high speed and excellent bonding adhesion polypropylene for lamination & coating application. The application reduces manufacturing costs with lower polymer shrinkage from molds and increases the manufacturing capacity of the plastic-bag coating process with a higher production speed.



- Ultra-thin and energy-saving polypropylene for thermoforming application: The development of homopolymer polypropylene that has thinner and even thickness when formed to withstand higher impacts and better forming during the molding process and hence can be recycled, is another commercial IRPC product. The process operates under lower temperature than other common homo-polypropylene, saving costs and energy.
- Multilayer surface coating for fast cycle molding (EPS) is another value-added product with additional properties to withstand suddenly high impacts with better force distribution, lifetime durability and ductility, lightweight, lower energy consumption during molding process, and lower chemical uses, thus lowering costs.
- High-density polyethylene pipe: IRPC has developed HDPE for piping application that can be used in many services, such as chlorine-resistant water pipe under the ASTM F2023 standard, and is resistant to high impacts under the ISO 13479 standard, as well as low sagging property and higher viscosity when molded with low shear forces, but constant viscosity when molded with normal shear forces under the ISO 4427 standard.

## 1.5 Information Technology Operations

Under a clear policy to continuously develop and upgrade information technology, IRPC consistently improves the IT infrastructure and network efficiency to support IT operation expansion aiming to achieve international standard management systems, advanced cybersecurity systems, and optimize IT operations.

IRPC developed and installed the Governance Risk and Compliance (GRC) system in 2017 to track and control its operations' compliance with IRPC's policies, rules and regulations. This Continuous Control Monitoring System significantly helps track and correct anomalies from "Procure to Pay" and from "Order to Cash". This proactive approach helps

ensure maximum internal control efficiency and effectiveness.

The introduction of SAP Treasury Risk Management and Cash & Liquidity Management greatly helped increase the efficiency of financial management, real-time liquidity management, deposit management, short-term management in the money market, foreign-exchange management, securities investment management, cash holdings analysis, financial deal agreement, and investment risk management. The system considerably improves the accuracy and resiliency of IRPC's financial operations.

Moreover, IRPC has developed and put in place the IT infrastructure cybersecurity certified by the ISO/IEC 27001:2013 (Information Security Management System), bolstering full confidence in its IT system among all executives, employees and business partners.





## 1.6 Financial Operations

To efficiently manage liquidity to sufficiently support its operations and capital projects, IRPC has appropriately managed its financial position and adequately, routinely disclosed all financial data to market analysts, investors and financial institutions. Key financial operations are highlighted below.

1.6.1 Fitch Ratings (Thailand) maintained the Company's financial credibility at A-(tha) and adjusted the credibility level from 'negative outlook' to 'stable outlook'.

1.6.2 Secured short-term loans:

- Renewed the loan agreement with PTT Plc. to efficiently manage financial liquidity among PTT Group with loan facilities of Baht 10 billion and credit line of Baht 1.5 billion.
- Renewed a short-term Baht loan agreement with domestic financial institutions for a Baht 5-billion coverage.
- Renewed the committed-line loans for domestic letters of credit (DLCs) covering Baht 12 billion with domestic financial institutions for extended terms of payment for crude oil procurement with PTT to 60 days.

1.6.3 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. In 2017, IRPC organized four quarterly analyst meetings, four audio conferences with domestic stock analysts on quarterly performances, 15 roadshows for domestic and international investors, and 31 company visits where IRPC executives met face-to-face with groups of investors and analysts.
- Joint organization with SET annual activities to promote disclosure of company data in the "SET in the City 2017" and quarterly "Opportunity Day" events.
- Organization of "Analyst Site Visit 2017" for stock analysts to visit UHV Project, PPE & PPC

Project, and IRPC Clean Power for better understanding of the business and observe major investment projects.

- Organization of two "Knowledge Sharing (KM)" seminars for stock analysts and representatives of financial institutions to enhance their analyses on company fundamentals and business performance, which directly impact stock prices under the themes of "2017 Petrochemical Market Outlook" and "Petrochemical: Moving Forward to the Future".
- Arrangement of a visit by EDL-Generation Public Company's executives and staff to learn and understand investor relations work. EDL-Generation Public Company is a listed company on the Lao Securities Exchange (LSX).
- Making a presentation at the "IR Presentation Skills Workshop" under the Certificate in Investor Relations 2017 program. The program is jointly organized by the Thai Listed Companies Association (TLCA), Thai Investor Relations Club (TIRC) and CFA Society Thailand.

1.6.4 Achievement awards in 2017: (Details in Awards and Achievements in page 14).



**BEST INVESTOR  
RELATIONS COMPANY**

**ASIA'S BEST CEO  
(INVESTOR RELATIONS)**

**ASIA'S BEST CFO  
(INVESTOR RELATIONS)**  
FROM CORPORATE GOVERNANCE ASIA



**BEST INVESTOR  
RELATIONS AWARDS**

**BEST INNOVATION  
COMPANY AWARDS**  
FROM SET AWARDS 2017



**THE BEST FX SOLUTIONS  
THAILAND**

FROM THE ASSET TRIPLE  
A COUNTRY AWARDS 2017



## 1.7 Legal Actions

IRPC's goal is to administer its legal work in adherence to good governance principles and corporate governance practices for sustainable growth. In 2017, it operates for due benefits in the administration of legal work: contracts, business support, and public affairs. This year's legal highlights appear below:

1.7.1 A Contract Management or "SWAT" Team was set up to support EVEREST's operation to optimize its procurement contract management and reduce procurement costs by Baht 250 million. The 2017 performance showed a decreased cost of Baht 872.47 million as a result of win-win contract management with business partners.

1.7.2 All permits related to IRPC's business operations were granted without any objections.

1.7.3 IRPC's Rayong port received from the Marine Department a Statement of Compliance (SOC) of the Port Facility issued under the International Ship and Port Facility Security Code (ISPS Code) under the Convention for the Safety of Life at Sea. The statement certified that the port had been operated in compliance with the approved port facility security plan, a result of IRPC's improved safety measures of the port in the cargo loading/ unloading and services of up to international standard.

1.7.4 Community complaints related to public paths and waterways in IRPC's operating areas under Articles 8 and 9 of the Land Code Act were always attended to with care. Facts and all work process executed were presented to related government

agencies, local and regional, as well as to the press and SET so that interested stakeholders and shareholders may be informed. It also showed IRPC's commitment to solving problems in a transparent manner in compliance with the laws and good corporate governance.

## 1.8 Human Resources Development

IRPC's goal is to be a healthy organization with capable, conscientious personnel. It recruits and selects the right people for the right jobs and enhance their competence to drive the business, prepared for prevailing business situations, and cultivates in them IRPC's DNA and i-SPIRIT values to enhance their capability and feeling of ownership as a foundation to sustainable success.

Below are the highlights of HR administration this year:

1.8.1 Leadership Development Program with an emphasis on five leadership skills:

- 1 business success building**
- 2 change management**
- 3 team development**
- 4 self-development, and**
- 5 role model of corporate value.**

The leadership assessment system was designed through 180-degree assessment, which can track each individual development to be analyzed and used as database for practical development.

1.8.2 Development of a performance management system to value each employee's

contribution to IRPC's success, both in monetary and non-monetary forms, such as stakeholders' satisfaction, work system development and efficient knowledge management, all of which has led to efficient performance management and overall corporate success. This also motivated employees to better their performance in the short term and long term.

1.8.3 Cultivation of corporate values by setting practical patterns for employees in keeping with these values by linking them to job behavioral assessment, and by having executives and employees play a part in cultivating the values by serving as role models for executives and compiling recommendations from the workforce.

1.8.4 Promote Knowledge Sharing (KM) to stimulate and nurture an understanding of and skills in knowledge sharing in all professional functions.

1.8.5 Other highlights:

- "IRPC New DNA Moving Together" to publicize and cultivate corporate values among employees to create a new corporate culture in line with IRPC's growth.



## 2. Social

IRPC is committed to running its businesses while highly valuing responsibility to society, communities, and the environment. It cultivates a sense of voluntarism among employees, who should command awareness



**ASIA RESPONSIBLE  
ENTREPRENEURSHIP  
AWARDS 2017**  
FROM ENTERPRISE ASIA

of doing business with responsibility, transparency, and fair benefit-sharing with all stakeholders. The ultimate aim is to raise the quality of life and improve society.

Our CSR highlights are listed in "Corporate Social Responsibility" page 186-204.



## 3. Environmental

Taking quality, safety, occupational health, and the environment seriously, IRPC has adopted international standards to constantly improve process efficiency and develop product quality with a focus on keen attention to the surroundings, minimized pollutants, energy conservation, and efficient greenhouse gas (GHG) management on its way to Eco-Industry under CSR-DIW of the Ministry of Industry. All these accompany the establishment of good surroundings that are safe for communities, while cultivating safety and occupational health awareness and culture for its workforce.



*Volanturs' Hearts for Commanity Development Projec*





**NATIONAL OUTSTANDING  
WORKPLACE FOR SAFETY,  
OCCUPATIONAL HEALTH AND  
WORK ENVIRONMENT  
AWARD 2017**

FROM THE DEPARTMENT OF  
LABOUR PROTECTION AND WELFARE.



**GREEN INDUSTRY 4 (GI 14)  
AWARD, PRESENTED TO  
15 PLANTS**

The highlights of environmental tasks this year were listed under “Quality, Safety, occupational Health and Environment (QSHE)” page 205-212.



#### 4. Corporate Governance

IRPC values the continuous improvement of corporate governance in line with international standards and SET.

Major accomplishments of corporate governance were listed under “Corporate Governance Report” page 56-79.





## 5. Risk Management

IRPC's focus is on enterprise risk management by relentlessly improving its risk management system, announced for the Board, executives, and employees to efficiently implement. It defined a structure for such management by appointing a President-led Risk Management Steering Committee. A Board-appointed Risk Management Committee consists of at least three directors to devise policies, steer, and guide IRPC's risk management to keep corporate risks manageable and forge confidence among investors in goal achievement. In addition, IRPC appointed the Supply Chain and Financial Risk Management Committee, chaired by the President, in charge of tracking and analyzing market situations, managing risks concerning the prices and volumes of crude, raw materials, feedstock, petroleum and petrochemical products, freight, and financial transactions.

IRPC has applied international-standard risk management systems ISO 31000-2009: Risk Management-Principles and Guidelines and COSO-Enterprise Risk Management to its risk management practices along with the principles of good corporate governance, the internal control system, the business continuity management system, the anti-corruption approach, sustainability management approach, and OEMS (Operational Excellence Management System). Also, it has developed tools to give risk management higher efficiency, including the definition of KRIs (key risk indicators) as an alert for risk events. The application of VaR (Value at Risk) aids the assessment of preliminary risk values to help IRPC define suitable risk management measures.

Below are this year's highlights on risk management.

### 5.1 Price volatility risks:

These stemmed from the highly volatile global economy arising from some countries' policies with significant bearing on the economy and politics, and from unrest and terrorism in several regions, all of which affected the price trends of crude oil, which is IRPC's main raw material. IRPC's mitigation approach is as follows.

5.1.1 Closely monitored and analyzed price situations and promptly reported to the management for preparedness

5.1.2 Engaged in production/ process planning by constantly acquiring new grades of crude oil to give IRPC flexibility for choosing a wide variety of crude oil for lower costs

5.1.3 Managed the stocks of crude oil, petroleum and petrochemical products such that there are minimum impacts from stock gains or stock losses

5.1.4 Engaged in contracts on derivative trading with set targets for prices, volumes, and periods for suitable risk management in keeping with business plans under the oversight of the Hedging Committee and the Risk Management Committee.

5.1.5 Reviewed related crude oil purchasing processes to raise efficiency and lower risks arising from operating processes by developing RCM (Risk Control Matrix) and control assessment so that operators may develop awareness for performing their duties completely and efficiently

### 5.2 Operation risks:

Process or process support risks may affect IRPC's personnel, stakeholders, assets, or income opportunities. Therefore, IRPC should engage in risk management concerning SSHE (safety-security-health-environment), the failure to achieve planned production, communities, various crises, and water management. Below are mitigation measures.



5.2.1 Promoted the safety culture by making it a policy and undertaking various activities, including the application of Process Safety Management; 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. In addition, a safety compliance inspection team was set up to ensure strict compliance. As a result of these moves, IRPC managed to lower its accident rate to meet its goals on a par with industrial peers and set a goal to continue lowering accidents each year.

5.2.2 Integrated various units and planned together with unity to cut redundancies and accommodate assorted risks associated with the 2017 maintenance turnaround, including controlling contractors' practical compliance with safety rules; starting up plants safely and as planned after the turnaround; safe work in closed space; system preparation for a good environment; traffic planning; developing vigilance plans; and developing a close surveillance system for community impacts.

5.2.3 Relentlessly implemented risk management measures, a result of the project to improve and develop for higher efficiency and stability of machinery and tools by thoroughly inspecting machinery and tool conditions in plants, especially at risky points.



5.2.4 Focused stringently on proceeding with business under laws and regulations on safety and the environment, the TIS/OHSAS 18001 management standard for occupational health and safety, and the ISO 14001 environmental management standard.



*Elderly in Chaeng Noen Distric, Rayong Province visited IRPC's EEC.*

5.2.5 Regularly established understanding and cordial relations with community neighbors of the industrial zone, including the construction and renovation of public utility systems, support to local entrepreneurs, scholarship granting, education on IRPC's businesses through the likes of the Open House Project, a field coordination center for site engagement in community activities, and participation in emergency drills with communities and public agencies.

5.2.6 Applied OEMS fully to ensure that various aspects of work were always efficient and effective. IRPC also invited experts from PTT Group to assess its OEMS to identify development and improvement aspects.

5.2.7 Implemented 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.

5.2.8 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.

**5.3 Capital project risks:**

This concerns the Fully Integrated PP Project to grow in line with the strategic plan and preserve competitiveness in this project. IRPC's mitigation measures this year were as follows:

5.3.1 Prepared assorted resources to support and efficiently drive the project toward its goals, including personnel and financial support.

5.3.2 Developed systems and processes for closely monitoring business updates and remedy problems swiftly to ensure that the project could achieve all its goals.

5.3.3 Established marketing and sales plans to accommodate the volumes of new products to ensure that all the produced goods are saleable and have enough markets.

**5.4 Organizational capability risks:**

This means the enhancement and development of corporate capability for excellence, including shaping personnel into smart and conscientious people through IRPC's core values. To elaborate, IRPC must be ready in both qualities, and there must be enough of them to drive IRPC strategies toward the goal in a sustainable way. Below are IRPC's risk management moves.

5.4.1 Cultivated a corporate culture for work through the IRPC DNA so that the workforce may adhere to it in enhancing the efficiency and effectiveness of their businesses.

5.4.2 Defined a suitable approach for IRPC corporate restructuring so that it may compete with companies in the same industry.

5.4.3 Defined plans to appoint people to key positions and defined systematic performance appraisal processes to accommodate retiring executives and enable job transfers to go smoothly without affecting business.

5.4.4 Systematized knowledge management, particularly knowledge in key professions that may vanish once people resign or retire, including knowledge about machinery control and maintenance.

**5.5 Policy and regulatory risks:**

This concerns the monitoring and preparation for public policy-making and issuance of laws and regulations that may affect current businesses and IRPC's future business extension, including the Oil Fund Act, crude oil reserves, new accounting standards and tax laws, Land and Building Tax Act, and land code. Below are IRPC's risk management moves.

5.5.1 Monitored public-sector news and intelligence that may affect business or operation and inform relevant parties so that they may map out action plans or approaches for dealing with risks and seek business opportunities amid changes in policies, laws, and regulations.

5.5.2 Set up task forces to study draft laws, applicable acts, and privileges before proclamation or enforcement by assessing positive and negative impacts to IRPC and presenting to the management and related parties so that they may systematically act and monitor such items.

5.5.3 Joined CAC in anti-corruption efforts, establish corruption risks, and develop risk mitigation approaches.

5.5.4 Followed the procedures of the land code in revoking roads and canals, and 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, an ad hoc task force was formed to take action and minimize potential impacts in an integrated way.

**5.6 IT security & crime:**

Since IRPC relies heavily on IT systems as a business tool, the threats of attacks and of cybercrimes have multiplied in various forms, implying massive damage. Therefore, IRPC has mapped out proactive measures to prevent and minimize such threats. Below are IRPC's risk management moves.

5.6.1 Set up a Security Operation Center (SOC) to supervise and audit access to various corporate systems and detect anomalies should there be an attack from outside IRPC in a quick and efficient way

5.6.2 Educated and taught 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.

5.6.3 Acquired 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.

5.6.4 Underwent the annual drill under the Disaster Recovery Plan, which may involve attacks from the outside, damaged equipment, or assorted disasters.

5.6.5 Educated and forged awareness among the workforce of the safe use of computers and software, avoid viruses, malware, or attacks in various forms. To this end, dedicated teams counseled, trained, warned, and solved problems for the workforce.

## 5.7 Emerging risks:

This involves the analysis of the environment and external trends that could impact IRPC in the long-term by assorted external factors, including political, economic, social, environmental, legal, and technological ones. These risks must be assessed and presented to the management. Below are IRPC's risk management moves.

5.7.1 Tracked information and analyzed public policies, including draft acts on Eastern Region special economic zones, including the EEC (Eastern Economic Corridor) policy, which would affect current businesses favorably or adversely. On the positive side, IRPC set up a task force to comprehensively investigate this matter, including growth in sales and marketing, exploitation of IRPC's land, industries that promote infrastructure and public utilities, and potential privileges. As for the negative side, IRPC has become poised to handle impacts such as the development of an urban society. To elaborate, population migration and denser communities around the industrial zone could mean more conflicts or more complaints.

5.7.2 IRPC recognized the advent of the EV car technology, which would affect IRPC's future, particularly the petroleum product group, including gasoline, diesel, and lubricants, in view of the likely drop in fuel sales volumes as the number of EV cars grows. IRPC therefore analyzed EV car growth, which could significantly affect itself in the next 5-10 years, and formulates mitigation measures, including business transition from petroleum to more petrochemicals, product R&D that caters to markets of the future, and establishment of cooperation with business partners to grow markets or seek more sources to place IRPC's products.



## BUSINESS STRATEGIES

### PERFORMANCE HIGHLIGHT 2017



#### EVEREST PROJECT

The EVEREST Project strives to drive IRPC toward its vision, while driving goal achievement through 14% or higher in ROIC in pursuit of the Top Quartile in 2020, this year forging roughly Baht 7,218 million in EBIT for IRPC.



#### UHV PROJECT

This year, UHV Project posted the total production output of propylene of 320,000 tons per year. IRPC has continued to add values from its UHV Project as follows:

- Maximum capacity of gasoline production to forge higher revenues of approximately 870 million baht.
- The development of Catalyst (RDCC Catalyst Reformulation) can increase the amount of propylene production from 18 percent to 21 percent.
- The installation of heat connection machine from catalyst to increase production capacity project.

## LEADING INTEGRATED PETROCHEMICAL COMPLEX IN ASIA BY 2020

### OPERATIONAL EFFICIENCY IMPROVEMENT ASSET UTILIZATION ENHANCEMENT PRODUCT AND SERVICE IMPROVEMENT CAPACITY AND PRODUCTS EXPANSION

#### PROJECT COMPLETION AS FOLLOWS:

- CHP I Electricity +220 MW/ hour, steam +420 tons/ hour
- PRP Propylene +100 KTA
- EURO IV Gasoline 15 KBD, diesel 10 KBD, jet 15 KBD
- TDAE 28,000 KTA/ year, 150 BS 25,000 KTA/ year
- EBSM 80,000 KTA/ year, ABS/SAN 60,000 KTA/ year
- Lube Blending 50 million liters/ year



### MARGIN IMPROVEMENT

- Production excellence
- Commercial excellence
- Procurement excellence
- Human resources excellence

The Delta Project yielded the total revenues of more than 134 million US dollars.



2014

2010





### PPE/PPC PROJECT

**PPE PROJECT:** Polypropylene Production Expansion (PPE) Project to increase production capacity of polypropylene to 635,000 tons per year. Commercial production and operation will be completed in September 2017.

**PPC PROJECT:** This project seeks to improve and expand Polypropylene Compound and Specialties (PPC) production capacity to 140,000 tons per year, expected to be completed for revenue generation in December 2017.



REVENUE GROWTH OF 5%  
EBITDA GROWTH OF 10%



1<sup>ST</sup> QUARTILE ROIC IN  
PETROLEUM AND PETROCHEMICAL  
INDUSTRY



MEMBER OF DJSI EMERGING  
MARKETS UNIVERSE

### INCREMENTAL MARGIN ORGANIZATION HEALTH

- Capacity Building
- Development of operation procedures
- Fostering of organization culture

The UHV Project will be completed and commercially operated in September 2017, with an increase in propylene production capacity of 320,000 KTA/ year.

### FULLY INTEGRATED PP

- PPE production capacity of 160,000 KTA/ year
- PPC increased production capacity of 140,000 KTA/ year



### GDP STRATEGY



#### G: POWER OF GROWTH

- Mars Maximum Aromatics Production
- EVEREST forever (E4E)
- M&A (Merger and Acquisition)
- R&D Excellence



#### D: POWER OF DIGITAL

- IRPC 4.0



#### P: POWER OF PEOPLE

- IRPC DNA

ROIC  
14%

2020

2018

2016



INDIVIDUAL OWNERSHIP  
SYNERGY  
PERFORMANCE EXCELLENCE  
INNOVATION  
RESPONSIBILITY FOR SOCIETY  
INTEGRITY & ETHICS  
TRUST & RESPECT

IRPC has defined a vision and business strategies to become a “Leading Integrated Petrochemical Complex in Asia by 2020”. To achieve this objective, new projects and business operation that enhance higher revenues have been implemented, resulting in 14 percent of ROIC, leading the Company toward the Top Quartile performance of petrochemical industry by 2020. IRPC has also achieved competitiveness and sustainable business growth, coupled with responsibility for society, community and environment. According to such visions and objectives, IRPC has implemented various strategic projects since the past up until present, including the future planning of important projects to ensure its goal achievement as established.



## EVEREST Project



The EVEREST Project strives to drive IRPC toward its vision of a “Leading Integrated Petrochemical Complex in Asia by 2020”. Thanks to implemented best practices to its corporate management and operation by a world-class consultant company, the project is pivotal to corporate caliber upgrading in tandem with development of the corporation and its personnel.

Since late 2016, IRPC has begun assessing and analyzing ways to raise business process efficiency together with process efficiency and organizational administration to define its strategies and plans. The project embraces five key aspects: operation,

commercial, procurement, corporate, and organization health. Ways to enhance personnel management efficiency were identified to spur self-development and forging of mindsets, core values, and the corporate culture. All these will contribute to staff operation at full steam in the same direction.

This year the project successfully contributed Baht 7.218 billion in EBIT.

The project’s peak EBIT goal is Baht 10.5 billion in 2018. As planned, the OHI goal is set at the top quartile at 74 or more. As a result, by 2020 IRPC should achieve the goal of a top-quartile performance to sustainably maintain decent EBIT.

EVEREST  
FOREVER

TOP QUARTILE

2020

EBITDA  
29,029 MTHB

2019

HEIGHT  
29,029 ft

2018

CAMP 4  
(26,300 ft)CAMP 3  
(23,500 ft)

Year's performance	Actual EBIT (Baht million)	EBIT goal (Baht million)
<b>Performance</b>		
<b>Operations:</b> Efficiency improvement from crude oil and returns improvement through modification of process units, higher energy efficiency, improved efficiency of maintenance, and operation loss reduction	3,011	2,751
<b>Integrated Supply Chain:</b> Efficiency improvement from supply chain management to cut costs and production planning to enable processing units to proceed at full steam, thus maximizing profits	2,077	1,921
<b>Commercial:</b> More trade value added from refining and petrochemical products	1,179	1,348
<b>Procurement:</b> More efficiency in timing and expenses of refining units' shutdowns for inspection and maintenance, and improved efficiency for procurement of equipment and high-expense goods	411	353
<b>Corporate:</b> The corporate area management to develop the Company's potential in maintaining the efficiency in managing its expenditures	323	330
<b>Human Resource:</b> Efficiency improvement in HR cost management for maximum efficiency	217	813
<b>Total</b>	<b>7,218</b>	<b>7,516</b>
<b>Organization Health</b>	<b>SCORE</b>	<b>SCORE</b>
<b>Organization Health Index:</b> Improve all personnel's caliber with a 1 <sup>st</sup> Quartile (OHI score) goal	86*	≥74

\* Organization Health Index score as of January 2017

## Human Resources Administration

With IRPC's challenging business targets, the management and all employees are aware of their mission to deliver their best performance. Therefore, capability development and motivation creation are continuously in the work plan. In 2017, ongoing HR projects to drive human resources to excellence to support IRPC's vision are summarized as follows:

### 1 Leadership Development:

Leadership development needs much time and many resources. Five leadership skills that IRPC focuses on are entrepreneurship, change management, team development, self-development, and corporate values role model. Besides, IRPC strives to craft a leadership assessment (180-degree assessment), of which the result can be analyzed and used in the development of an individual development plan (IDP).

### 2 Performance Management:

This is a key factor of human resources administration since appropriate performance management contributes to corporate success and can motivate employees to continue delivering even better performance in the short and long terms. The performance management process is designed to formulate proper correlations among these factors: input, process, outcome, and impact.

#### Input

Corporate value that is normalized thinking and performance of each employee to deliver optimal effectiveness and efficiency. Capability of the individual is the norm in the professional aspect and the position/ level aspect

#### Process

In the performance management process, definition and transfer of objectives and targets are conducted deliberately, with a monitoring system to check progress and obstacles so that recovery can be made during the year.

#### Output

IRPC defines output in a broad sense to ensure organizational development. It therefore defined that performance comprises three factors: outcome, knowledge and skills, and corporate values.

#### Impact

Performance. Individuals will realize the value they have toward the success of the organization, either in cash or in non-cash form (stakeholder satisfaction, work process development, and effective knowledge management).



IRPC launched IRPC DNA project to promote employees' acknowledgement of desirable behavior for the organization.

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Development talent and skill for 1,200 employees in supervisor level of each field who are also member of Smart Leader Group to apply such knowledge with his/her own department.

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IRPC DNA CHALLENGE for senior executives to foster their awareness of change for the betterment by setting up goals with each individual and organization that ultimately leads to sustainable success under "I'm Changed".

---



To encourage employees to search for guidelines for behavior development and improvement while emphasizing on concrete action.

### 3 Corporate Value Creation:

IRPC always creates a work atmosphere that instills corporate values. The management and employees are engaged in value cultivation, by being a management role model and by collecting employees' opinions.

In addition to the continuous mission described above, Human Resources has promoted Knowledge Management (KM) in order to forge understanding across the Company, which will enable knowledge transfer among themselves.

With the development in every aspect as mentioned above, IRPC is assured that its employees are more than ready to deliver great performance and confidently face the changing business environment.

#### 4 Evaluation of Operational Performance on Human Resources

IRPC has analyzed the results of the survey on corporate health indicators by measuring the organizational readiness in 3 aspects and 9 factors.

The 9 factors representing the readiness of the organizations are as follows:

1. Organizational Direction
2. Leadership
3. Work Environment
4. Accountability
5. Coordination and Control
6. Capabilities
7. Motivation
8. External Orientation
9. Innovation and Learning

The corporate health assessment from 2015 led to the improvement in 3 areas; Accountability, Performance Management (Coordination & Control), and People Capability. The operation has been done continually.

In 2017, there was the additional development on various processes as follows:

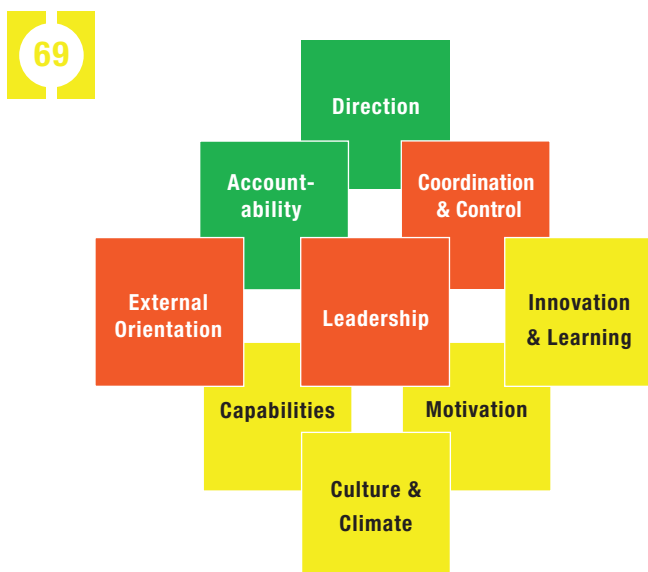
1. Accountability: The organizational structure was improved and the responsibilities in the structure were clearly shared for the IRPC to be able to compete timely for the changes in the digital era.

2. Performance Management: IRPC had analyzed and developed the operational performance management systems to be the management tool in the organization that pays great attention to the work process both on the results and success of the work including the performance efficiency and desirable behaviors of the operators used in enforcing the work to be successful. As a result, IRPC had improved the new composition of the performance assessment by increasing the proportion of competency assessment to the employees at all levels in order to achieve the Company's goal sustainably.

3. People Capability: There was the arrangement of the leadership development program using the tools gained from the world leading consultants such as 7 Habits, Lead Program, etc. This included the adjustment of desirable behaviors (IRPC DNA) in order to achieve the corporate culture desired by IRPC.

It was found that the 3 factors in the development had higher scores as expected. The results of corporate health indicators as of January 2018 (End of EVEREST Project) were at 86% which was higher than in 2015 of 69% (EVEREST Project Start). IRPC is committed to develop all areas of the corporate health to be at the top quartile. However, IRPC continued to be determined in improving and monitoring continually in the year 2018 and onwards.

#### 2015 OUTCOME SCORE



#### 2017 OUTCOME SCORE





# Management Discussion and Analysis (MD&A)

## Executive Summary

	Unit	2017	2016	Change
Crude Intake	Million bbl	65.54	67.03	(2%)
Sales <sup>[1]</sup>	Million Baht	214,101	185,041	16%
Net Sales <sup>[2]</sup>	Million Baht	197,594	168,349	17%
Market GIM	Million Baht	32,370	31,033	4%
	USD/bbl <sup>[3]</sup>	14.48	13.04	11%
Accounting GIM	Million Baht	34,638	30,457	14%
	USD/bbl	15.49	12.80	21%
EBITDA	Million Baht	20,420	17,430	17%
Net Profit	Million Baht	11,354	9,721	17%

Note: <sup>[1]</sup> **Sales** includes (1) Petroleum Sales (2) Petrochemical Sales (3) Power and Utilities Sales (4) Sales of tank farm and port service, etc

<sup>[2]</sup> **Net Sales** includes (1) Petroleum Sales (excluding excise tax) (2) Petrochemical Sales (3) Power and Utilities Sales

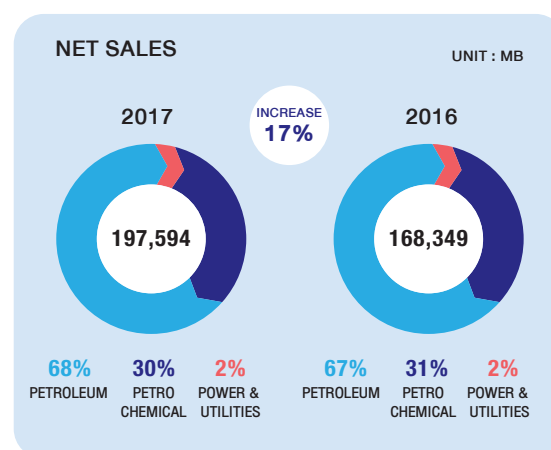
<sup>[3]</sup> **Market GIM per bbl**: [(Market GIM/ Crude Intake)/exchange rate]

In 2017, the Company reported net sales of Baht 197,594 million, rose by 17% when compared to 2016 due to products price increase following the crude oil price. The refinery utilization rate was 180,000 barrels per day of crude intake, or 84% utilization rate, only 1% declined from last year due to approximate 1 month of the Company's Major Turnaround. After its major turnaround, the Refinery plant efficiency has been improved at high level of utilization rate. Moreover, additional 160,000 ton per year of Polypropylene Expansion Project (PPE) and 140,000 ton per year Polypropylene Compounding Project (PPC) commenced their commercial operations from September 2017 and December 2017, respectively.

The Market GIM was Baht 32,370 million (USD 14.48 per barrel), increased 4% from last year because of the value-added products towards the full-year operation of UHV project and the

commencement of PPE project as well as the lower of Crude Premium over Dubai. Whereas it had major turnaround and most of petroleum and petrochemical spreads dropped during 2017.

In 2017, the Company had the stock gain of Baht 3,720 million according to the continuous rise of crude



oil price versus the oil hedging loss totaling Baht 1,452 million. Hence, the company reported Accounting GIM of Baht 34,638 million (USD 15.49 per barrel) increase by 14%. 2017 EBITDA was Baht 20,420 million, an increase of 17% caused by the higher GIM as mentioned above. Meanwhile, the depreciation and financial costs increased due to an increase of those expenses after the COD of UHV and PPE projects. The company recoded FX gain amounting to Baht 764 million due the Thai Baht appreciation and gains from investment amounting to Baht 577 million which mainly the performance improvement of the associated company, Ube Chemicals (Asia) Plc., and gains from disposal of other long term investment.

There were non-recurring items in 2017; gains from reversal of impairment from disposal of investment property amounting to Baht 794 million.

In 2017, the company recorded Baht 2,181 million, an increase of Baht 1,899 million from last year. The increase was due to 2016 tax benefit from corporate income tax of Baht 1,449 million from the deferred tax asset of tax loss carry forwards and subsidiaries' liquidation. As a result, net profit was Baht 11,354 million, increasing by 17%.

### Key incidents in 2017

- According to Thai Accounting Standard 40, Investment Property, requires the Company to disclose the fair value of assets in the financial statements. The Company provides asset appraisal every 3-5 years in the event that there is no effect to the significant increase or decrease of assets value. From company's previous asset appraisal in 2012, there were some lower value than cost of investment property, hence, the company recorded impairment on those investment property in amount to Baht 708 million. This year the Company provided the asset appraisal and resulted in the higher value in investment property than 2012 asset appraisal. Hence, the company assessed an increase in the company's and its subsidiary's investment property thru the reversal of investment property in amount of Baht 232 million.

- In 4Q17, the Company recognized the reversal impairment of its investments which are

related to the pre-rehabilitation managements and the entities relating to them. Those are investments in 3 companies; Pornchai Enterprise Co., Ltd., TPI Holding Co., Ltd., and TPI EOEG Co., Ltd. which were fully impaired in the past. According to the recoverable amount from those investments and their fair values as of December 31, 2017, the company recorded reversal impairment of those investments in an amount of Baht 562 million in 4Q17.

- On December 20, 2017, the Board of directors passed the resolution on the approval to dispose the further 25 percent stake holding in IRPC Polyol Company Limited (IRPCP) to PCC Rokita SA (Poland). Therefore, after disposal of 25 percent stake holding in IRPCP to PCC Rokita SA (Poland), IRPC and PCC Rokita SA (Poland) will jointly hold 50 percent stake holding each in IRPCP. The objective of the transaction is to expand the cooperation in production and marketing in high value added polyurethane.

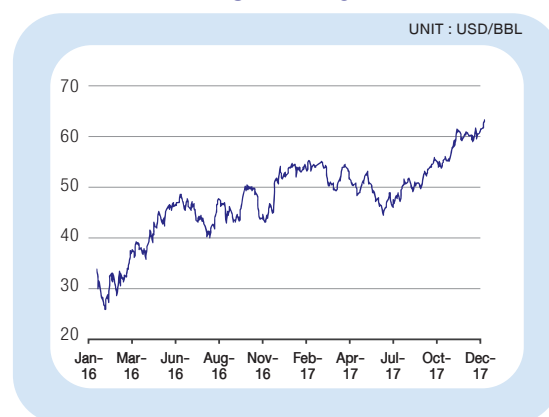
## Operating Performance and Financial Position

### 1 Operating Performance by Business Units 1.1. Petroleum business unit

#### 1.1.1 Petroleum Market Overview

Crude oil prices in 2017 was in the range of USD 43-64 per barrel, an average of USD 53.2 per barrel, up from 2016 average of USD 41.3 per barrel. Crude oil prices surged substantially during year ending period. This was owing to the decline of crude oil surplus driven by the faster-than-anticipated global oil demand growth of 1.5 million barrels per day and

#### DUBAI PRICE



hit 97.7 million barrels per day towards the global economic recovery, the lower of U.S. oil inventories as well as the extension of 1.8 Million barrel per day production cuts from OPEC and Non-OPEC members till the end of 2018, be extended from the end of March 2018 in order to stabilize the oil price regarding the meeting held on November 30, 2017. The compliance of the oil production cut deal had reached the target.

Moreover, the unrest in the Middle East, the falling of Venezuela's production below 2 million barrels per day, the lowest level in the past 28 years, as well as the lower crude export to U.S. due to leakage of Canadian's oil pipeline. Nevertheless, the high level and continued growth of U.S. oil productions pressured downed the crude oil price on the long term oil market horizon.

#### 1.1.2 Crude Intake and Capacity

	2017	2016	Change
<b>Crude Intake</b>			
Million barrels	65.54	67.03	(2%)
KBD	180	183	(2%)
<b>Utilization Rate</b>			
Refinery	84%	85%	(1%)
RDCC	78%	43%	35%
Lube Base Oil	76%	93%	(17%)

Crude intake in 2017 was 65.54 million barrels or 180 thousand barrels per day (KBD), 84% of utilization rate, slightly decreased by 1% when compared to 2016 of 67.03 million barrels. This was due to 1 month planned major turnaround during February and March 2017. The Refinery plant efficiency has been improved at high level of utilization rate after turnaround.

The utilization rate of RDCC plant in 2017 was 78%. During the turnaround, the integration between RDCC and Hyvahl production units plus feedstock optimization at Hyvahl unit in RDCC plant be completed both to improve operation capacity and higher the products value. The utilization rate of lube base oil plant was 76%, declining by 17% when compared to 2016 with 93% of utilization rate, mainly owing to planned major turnaround.

#### 1.1.3 Petroleum Sales

Products	Sales Volume (Million Barrel)		Sales Value (Million Baht)	
	2017	2016	2017	2016
Refinery	52.39	51.98	119,015	98,348
Lube Base Oil	6.43	7.22	16,110	14,804
<b>Total</b>	<b>58.82</b>	<b>59.19</b>	<b>135,125</b>	<b>113,152</b>

In 2017, net sales of petroleum businesses were Baht 135,125 million, rising by Baht 21,973 million, or 19% from last year mainly owing to a 20% increase in the average product prices following a rise of crude

oil price while a decrease of sales volume from 59.19 million barrel to 58.82 million barrel, decreasing 0.37 million barrels or 1%. The decreased sales volume was mainly attributed to Fuel Oil and Lube Base Oil.

#### 1.1.4 Petroleum Sales Breakdown

Products	2017		2016	
	Local	Export	Local	Export
Refinery	59%	41%	59%	41%
Lube Base Oil	49%	51%	48%	52%
<b>Total</b>	<b>58%</b>	<b>42%</b>	<b>57%</b>	<b>43%</b>

In 2017, the percentage of domestic and export of petroleum product sales was 58% domestic and 42% export. When 2017 compared with 2016, the percentage of domestic sales slightly increased from

Lube Base Oil while the percentage of export rose from Asphalt product. The export products in 2017 mostly shipped to Singapore, Malaysia and Cambodia, respectively.

#### 1.1.5 The spread between Petroleum products and raw material

Average price	2017	2016	Change
<b>Dubai Crude Oil (USD/bbl)</b>	53.17	41.27	29%
<b>Petroleum (USD/bbl)</b>			
Naphtha – Dubai	0.7	1.3	(46%)
ULG95 – Dubai	14.9	14.9	0%
Gas Oil 0.05%S – Dubai	12.5	10.8	16%
FO 180 3.5%S – Dubai	(2.3)	(5.0)	54%
<b>Lube Base Oil (USD/MT)</b>			
500SN – FO 180 3.5%S	498	417	19%
150BS – FO 180 3.5%S	602	737	(18%)
Asphalt – FO 180 3.5%S	(31)	(50)	38%

#### The spread between Petroleum products and Dubai

- **Naphtha Spread-Lower:** Naphtha – Dubai spread in 2017 was USD 0.7 per barrel, decreasing by 46% from 2016 of USD 1.3 per barrel. The decrease was owing to the supply glut according to additional capacity from Middle East and India.

- **ULG95 Spread-Flat:** ULG 95-Dubai spread in 2017 was USD 14.9 per barrel, equal to last year price. This was pressured by the continuous export from China while the strong demand from driving towards the low gasoline price including the gasoline shortage in U.S. after the hurricane, supported the ULG95 spread.

- **Gas Oil Spread-Higher:** Gas Oil 0.05% S-Dubai was USD 12.5 per barrel in 2017, up by 16% when compared with 2016 of USD 10.8 per barrel. The increase was owing to the higher global demand. However, the incremental supply especially from China, India and Middle East pressed the price down.

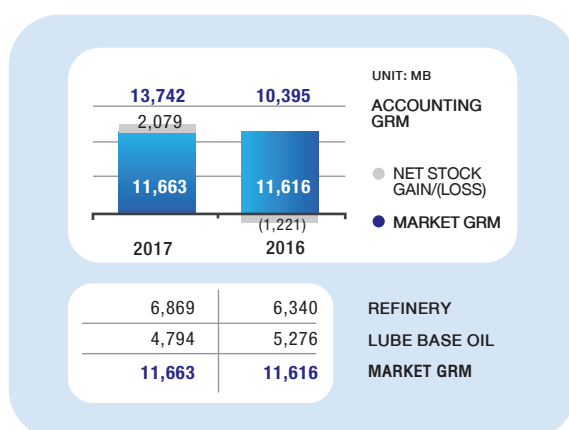
- **Fuel Oil Spread-Higher:** Fuel Oil (FO 180 3.5%S)-Dubai spread in 2017 was USD -2.3 per barrel, compared with 2016 of USD -5.0 per barrel, sharply increased by 54%. This was driven by a continuous decline in export from Russia and Europe, resulting in the drop of inventories in Singapore. However, China's fuel oil demand went down because the independent refineries had received higher crude import allocations from government.

### The spread between Lube Base Oil products and FO 180 3.5%S

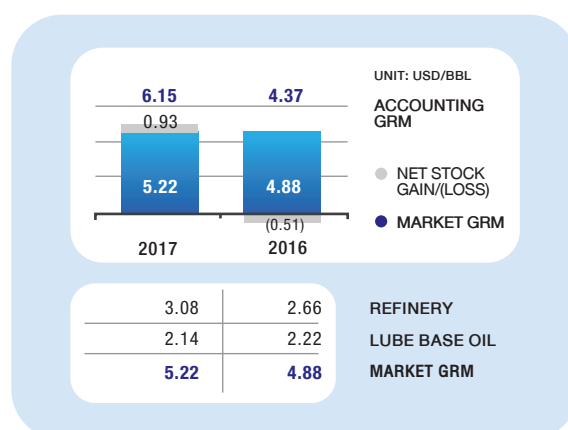
- **500SN Spread-Higher:** Lube base 500SN-fuel oil spread in 2017 was USD 498 per ton, increasing by 19% from 2016 of USD 417 per ton due to inventory increase according to the uptrend of crude oil price.

- **Asphalt Spread-Higher:** Asphalt-fuel oil spread in 2017 was USD -31 per ton, soared by 38% from 2016 of USD -50 per ton, mainly due to an increasing demand of road construction in the region.

#### 1.1.6 Gross Refinery Margin



In 2017, Market Gross Refinery Margin (Market GRM) of Baht 11,663 million or USD 5.22 per barrel, rose by Baht 47 million or USD 0.34 per barrel from last year. This was mainly caused by better products spread of Gas oil and Fuel oil as well as lower cost from Crude Premium over Dubai. According to an increase in crude oil price, there was the net stock gain of Baht 2,079 million or USD 0.93 per barrel; stock gain of Baht 3,531 million or USD 1.58 per barrel versus oil hedging loss of Baht 1,452 million or USD 0.65 per barrel. Therefore, Accounting GRM was Baht 13,742 million or USD 6.15 per barrel.



## 1.2 Petrochemical business units

### 1.2.1 Petrochemical Market Overview

In 2017, Polymers price had been increased, driven by a rise of feedstock price and high incremental demand towards a higher-than-expected of global economies, especially in SEA countries where their economic growth rate reached 5.3%. Besides, the tight supply in U.S. by the impact of hurricanes as well as a drop of waste plastic import from China regarding environmental issues has buoyed its price. However, the Polyethylene market continues to be under pressure from new capacity while the Polypropylene market has less concern by the delay of Coal to Olefins (CTO) and Methanol to Olefins (MTO) according to low range of crude oil of USD 43- 64 per barrel. This caused



better results in Polyolefin market. Regarding to the Styrenics market, the incremental demand was outpace the incremental supply encouraged by a higher-than-expected of the appliance's demand and the recovery of the automotive industry led by 2%

growth from China. However, the Aromatics was under pressure due to the higher feedstock price following crude oil price amid slow demand, especially in China which lower their Aromatics utilization rates.

### 1.2.2 Petrochemical Capacity

	2017	2016	Change
<b>Utilization Rate</b>			
Olefins Group	87%	90%	(3%)
Aromatics and Styrenics Group	90%	91%	(1%)

In 2017, the utilization rate of Olefins and Aromatics & Styrenics were 87% and 90%, respectively, slightly lower than the utilization rate in 2016 due to planned major turnaround. Furthermore, 160,000 tons per year of PPE plant commenced its

commercial operation (COD) since September 2017 and Expandable Polystyrene Plant (EPS) had installed expand machinery and increased the capacity from 30,000 tons per year to 48,000 tons per year, being its COD in September 2017.

### 1.2.3 Petrochemical Sales

Products	Sales Volume (KMT)		Sales Value (Million Baht)	
	2017	2016	2017	2016
Olefins Group	952	857	35,044	29,780
Aromatics and Styrenics Group	631	677	24,684	22,335
<b>Total</b>	<b>1,583</b>	<b>1,534</b>	<b>59,728</b>	<b>52,115</b>

In 2017, net sales of petrochemical businesses were Baht 59,728 million, rising by Baht 7,613 million or 15% from last year. The main reasons were 12% increase in average product prices following the

increase in raw material prices as well as an increase of 49 Kton or 3% in sales volume. The revenues were 59% from Olefins Group and 29% from Styrenics group.

### 1.2.4 Petrochemical Sales Breakdown

Products	2017		2016	
	Local	Export	Local	Export
Olefins Group	60%	40%	64%	36%
Aromatics and Styrenics Group	47%	53%	46%	54%
<b>Total</b>	<b>55%</b>	<b>45%</b>	<b>56%</b>	<b>44%</b>

In 2017, the proportion of Petrochemical sales were 55:45 as domestic and export accordingly. The export product proportion increased 1% mostly from PP and Propylene products which be shipped to Japan, Singapore and Indonesia and the domestic

sales proportion also increased mainly from Aromatics Group.

The petrochemical exported products in 2017 mostly shipped to Hong Kong, Japan and Singapore, respectively.

#### 1.2.5 The spread between key petrochemical products

The spread between key products and raw material is summarized below.

Average Price (USD/MT)	2017	2016	Change
<b>Naphtha</b>	496	398	25%
<b>Olefins</b>			
Ethylene - Naphtha	596	639	(7%)
HDPE - Ethylene	235	209	12%
HDPE - Naphtha	831	848	(2%)
Propylene - Naphtha	328	306	7%
PP - Propylene	328	350	(6%)
PP - Naphtha	656	656	0%
<b>Aromatics</b>			
BZ - Naphtha	324	245	32%
TOL - Naphtha	159	194	(18%)
MX - Naphth	172	250	(31%)
<b>Styrenics</b>			
SM - Naphtha	754	666	13%
ABS - Naphtha	1,334	957	39%
ABS - SM	580	291	99%
PS (GPPS) - Naphtha	947	817	16%
PS (GPPS) - SM	193	151	28%

#### The spread between Polyolefins (HDPE/PP) and Naphtha

- **HDPE Spread-Lower:** HDPE-Naphtha spread in 2017 was USD 831 per ton, moving down 2% from 2016 due to a rise in naphtha price according to an increase in crude oil price. Meanwhile, an incremental production from U.S. caused a slightly increase in product price.

- **PP Spread-Flat:** PP-Naphtha spread in 2017 was USD 656 per ton, being unchanged from 2016 as a result of stable demand. Though PP price increased according to lower than expected of new supply.

#### The spread between Aromatics (Toluene and Mix Xylene) and Naphtha

- **TOL Spread-Lower:** Toluene - Naphtha spread in 2017 was USD 159 per ton, down by 18% when compared to USD 194 per ton in 2016. This was caused by lower demand especially in China as a decline of petrochemical utilization rates.

- **MX Spread-Lower:** Mixed Xylene-Naphtha spread in 2017 was USD 172 per ton, down by 31% when compared to USD 250 per ton in 2016, because of supply gluts especially Asia.

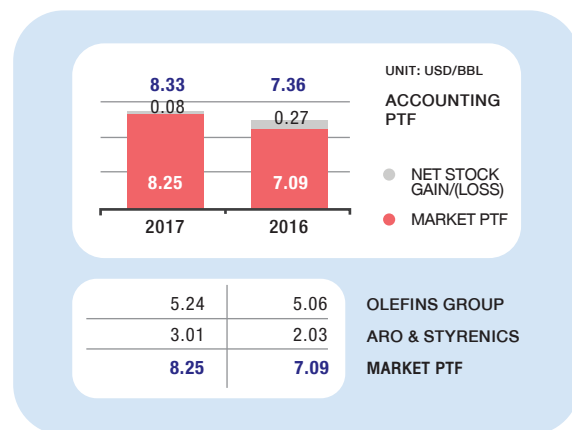
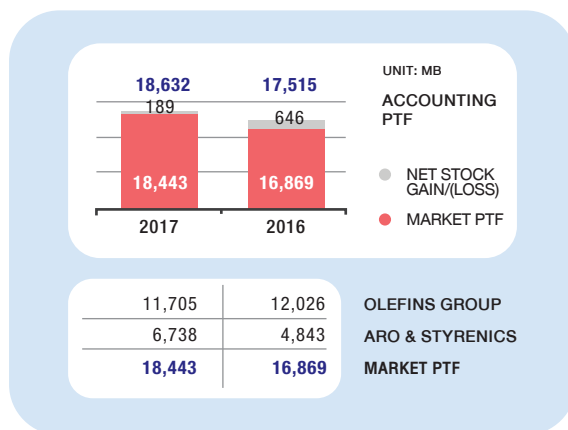
### The spread between Polystyrenics (ABS/PS) and Naptha

• **ABS Spread-Higher:** ABS-Naptha spread in 2017 was USD 1,334 per ton, up by 39% when compared to USD 957 per ton in 2016. This derived from a continued rise in demand led by Chinese for appliance production, an increase in Virgin Plastic demand regarding China's environmental concerns

as well as tight supply during early 2017 from maintenance shutdown in the region.

• **PS Spread-Higher:** PS-Naptha spread in 2017 was USD 947 per ton when compared to USD 817 per ton in 2016. It was increased by 16% from high demand in North-East Asia especially China, tight supply from maintenance shutdown in the region, and Korean's maintenance shutdown in November 2017.

#### 1.2.6 Product to Feed Margin (Product to Feed : PTF)



In 2017, the Market Product to Feed (Market PTF) of Baht 18,443 million or USD 8.25 per barrel increased by Baht 1,574 million or USD 1.16 per barrel, compared to 2016 due to the better product's yield after the COD of UHV and PPE projects as well

as the higher Styrenics spread. There was net stock gain of Baht 189 million or USD 0.08 per barrel. Hence, the Company had Accounting PTF of Baht 18,632 million or USD 8.33 per barrel.

### 1.3 Power Plant and Utility business units

#### 1.3.1 Power Plant Capacity and Sales

(Unit : Million Baht)

	2017	2016	Change
<b>Utilization Rate</b>			
Electricity	75%	75%	(0%)
Steam	73%	73%	(0%)
<b>Sales</b>			
Electricity	1,629	1,822	(11%)
Steam	916	1,059	(14%)
Others	196	201	(2%)
<b>Total</b>	<b>2,741</b>	<b>3,082</b>	<b>(11%)</b>

In 2017, the utilization rate were 75% of Electricity and 73% of Steam, being unchanged from last year. Net sales of power and utility businesses were Baht 2,741 million, decreasing by Baht 341 million or 11% from last year due to the planned major turnaround during 1Q17.

### 1.4 Total Operating Performance

Total Operating Performance of IRPC and its subsidiaries for 2017 are as follows;

	Unit : Million Baht		Unit : USD per barrel	
	2017	2016	2017	2016
Average FX (THB/USD)	34.11	35.47		
Total Crude Intake (Mbb)	65.55	67.03		
Average Crude (USD/bbl) <sup>(1)</sup>	55.26	44.22		
Sales <sup>(2)</sup>	214,101	185,041	95.76	77.83
Net Sales <sup>(3)</sup>	197,594	168,349	88.37	70.81
Cost of Feedstock (Market Price)	(165,224)	(137,316)	(73.89)	(57.77)
<b>Market GIM</b>	<b>32,370</b>	<b>31,033</b>	<b>14.48</b>	<b>13.04</b>
Stock Gain/(Loss)	3,720	2,755	1.66	1.16
Lower of Cost or Market	0	290	0	0.12
Oil Hedging Gain/(Loss)	(1,452)	(3,621)	(0.65)	(1.52)
<b>Accounting GIM</b>	<b>34,638</b>	<b>30,457</b>	<b>15.49</b>	<b>12.80</b>
Other Incomes <sup>(4)</sup>	1,423	1,301	0.64	0.55
Selling Expenses	(1,296)	(1,198)	(0.58)	(0.50)
<b>Accounting GIM and Other Incomes</b>	<b>34,765</b>	<b>30,560</b>	<b>15.55</b>	<b>12.85</b>
OPEX	(14,345)	(13,130)	(6.41)	(5.52)
<b>EBITDA</b>	<b>20,420</b>	<b>17,430</b>	<b>9.14</b>	<b>7.33</b>
Depreciation	(7,062)	(6,249)	(3.16)	(2.63)
<b>EBIT</b>	<b>13,358</b>	<b>11,181</b>	<b>5.98</b>	<b>4.70</b>
Net Financing Cost	(1,983)	(1,481)	(0.89)	(0.62)
Gain/(Loss) from Foreign Exchange	764	104	0.34	0.04
Gain/(Loss) from impairment and disposal of fixed assets	832	3	0.37	-
Gain/(Loss) from Investment	577	184	0.25	0.07
Other Expenses	(7)	43	-	0.02
<b>Net Profit/(Loss) before Income Tax</b>	<b>13,541</b>	<b>10,034</b>	<b>6.05</b>	<b>4.21</b>
Income Tax	(2,181)	(282)	(0.98)	(0.12)
Gain/(Loss) from non-controlling interests	(5)	(31)	(0.00)	(0.01)
<b>Net Profit/(Loss)</b>	<b>11,354</b>	<b>9,721</b>	<b>5.07</b>	<b>4.08</b>

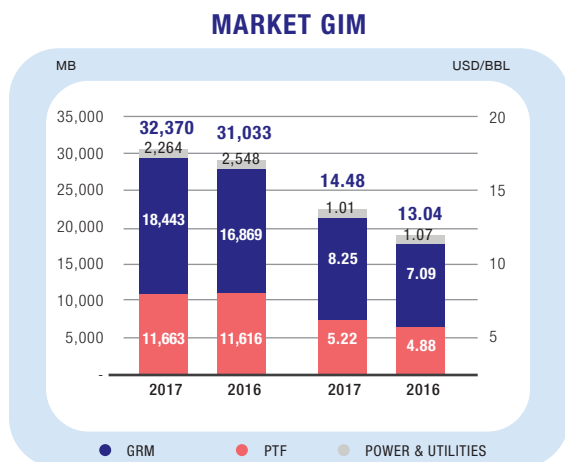
Note : <sup>(1)</sup> Average market prices of crude used in the production process

<sup>(2)</sup> Sales includes (1) Petroleum Sales (2) Petrochemical Sales (3) Power and Utilities Sales (4) Sales of tank farm and port service, etc

<sup>(3)</sup> Net Sales includes (1) Petroleum Sales (excluding excise tax) (2) Petrochemical Sales (3) Power and Utilities Sales

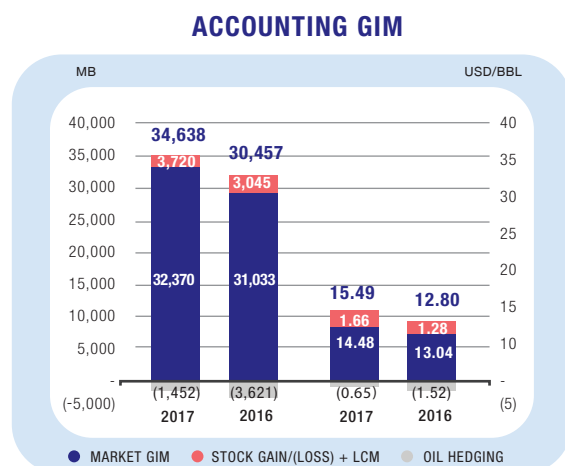
<sup>(4)</sup> Include sale of lands, port, tank farm and service etc

## 1.4.1 Market Gross Integrated Margin (Market GIM)



In 2017, Market Gross Integrated Margin (Market GIM) of Baht 32,370 million or USD 14.48 per barrel increased by Baht 1,337 million or USD 1.44 per barrel or 11% from 2016, mainly caused by the benefit from projects completion including UHV and PPE projects as well as lower costs from a decline in Crude Premium over Dubai.

## 1.4.2 Accounting Gross Integrated Margin (Accounting GIM)



In 2017, Accounting Gross Integrated Margin (Accounting GIM) was Baht 34,638 million or USD 15.49 per barrel, increasing by Baht 4,181 million or USD 2.69 per barrel from 2016. This attributed to an increase in Market GIM of Baht 1,337 million or USD 1.44 per barrel and an increase in net stock gain of Baht 2,844 million or USD 1.25 per barrel.

## 1.4.3 Other incomes

Other incomes consist of port and tank farm services and other services. In 2017, the Company had other incomes amounting to Baht 1,423 million, increased by Baht 122 million from 2016. This was mostly due to the recognition from securities return which the Company repaid its debts under rehabilitation plan and the period of placing the securities had exceeded the legal period, together with a rise in steam sales from an adjustment of steam selling prices.

## 1.4.4 Operating Expenses

In 2017, the operating expenses of Baht 14,345 million increased by Baht 1,215 million or 9% from 2016 mainly from the staff costs, consulting fee led by the Everest project advisory's fee ended in 2017 and donation to PTT group educational institutions.

The research and development expenses in order to increase the competitive advantage of both existing and new products were amounting to Baht 470 million in 2017. This included researcher's salary expenses related to the research reports as well as payroll for external professional researchers amounting to Baht 339 million and research equipment & tools and others expenses such as the utility expenses amounting to Baht 131 million.



#### 1.4.5 Depreciation Expenses

In 2017, depreciation of Baht 7,062 million increased by Baht 813 million from last year. This was mainly resulted from an increase of assets after the completion of expansion and efficiency improvement projects such as Polypropylene Expansion Project (PPE) as well as the major turnaround expenses which were capitalized as the assets and be amortized for 5 years.

#### 1.4.6 Financial Costs

In 2017, financial costs of Baht 1,983 million increased by Baht 502 million from 2016 mainly from an increase in interest expenses after the COD of UHV project and PPE project since July 2016 and September 2017, respectively.

#### 1.4.7 Gain/Loss from Foreign Exchange

In 2017, the Company reported gains from foreign exchange of Baht 764 million, increasing by Baht 660 million from last year, owing to Thai Baht appreciation against USD from the end of 2016 at Baht 36 per USD to the end of 2017 at Baht 32.85 per USD. The Company had outstanding USD debt amounting to USD 125 million at the end of 2017.

#### 1.4.8 Gain/Loss from impairment and disposal of fixed assets

In 2017, gain from impairment and disposal of fixed assets was Baht 832 million because the recognition of the reversal impairment from the appraisal in investment property amounting to Baht 232 million and the reversal impairment of long-term investments which are related to the pre-rehabilitation managements and the entities relating to them, amounting to Baht 562 million. The Company recorded fully impaired them in the past.

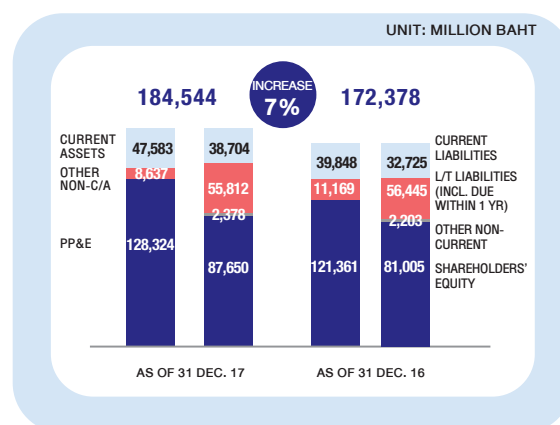
#### 1.4.9 Gain/Loss from Investments

In 2017, gain from investments were Baht 577 million, rising by Baht 393 million from last year mainly due to the better performance from UBE Chemicals (Asia) Plc., the associated company and gains from disposal of investment – Thai Oil Plc. shares amounting to Baht 115 million.

#### 1.4.10 Corporate Income Tax

The corporate income tax was Baht 2,181 million in 2017 and Baht 282 million in 2016, increasing by Baht 1,899 million since the Company recorded deferred tax assets of 2015 loss carry forward and the liquidation in associates totaling Baht 1,449 million in 2016.

## 2 Financial Positions



### 2.1 Assets

As of December 31, 2017, the Company had total assets of Baht 184,544 million, increasing by Baht 12,166 million from December 31, 2016. It was due to the following reasons:

- Account receivables increased by Baht 2,817 million or 28% mainly from the increase in average product prices according to higher crude oil price. As of December 31, 2017, the overdue more than 3 month account receivables was amounted to Baht 23 million or only 0.18% of the total account receivables. This was incorporated in the provision for doubtful debt of Baht 23 million. The average collection period was 19 days in 2017 versus 18 days in 2016.

- Inventories mainly attributed to Finish goods, Raw materials, and Goods in transit increased by Baht 4,269 million or 17% due to the increasing of inventory volume from 9.61 million barrels to 10.53 million barrels according to higher crude intake and increasing in products price. The inventory period was 52 days in 2017, slightly lower from 51 days in 2016.

- Other current assets increased by Baht 649 million or 16% mainly due to an increase in cash and cash equivalents of Baht 103 million, together with other account receivables of Baht 499 million.

- Non-current assets increased by Baht 4,431 million or 3% from 2016. This resulted from an increase of fixed assets amounting to Baht 13,545 million, largely contribution from the PP Expansion and PP Compounding assets and the capitalization of major turnaround expenses into Property Plant & Equipment. However, there were partially offset by a decrease from the depreciation and amortization expenses of Baht 7,059 million, deferred tax assets of Baht 2,107 million and other investment of Baht 596 million.

## 2.2 Liabilities

As of December 31, 2017, the Company had total liabilities of Baht 96,894 million, increased by Baht 5,521 million, compared to the end of 2016. It was due to the following reasons:

- Short-terms loans from financial institutions decreased by Baht 3,184 million or 52% mainly due to an increase of cash inflow from operating activities.
- Account payables increased by Baht 6,239 million or 32%. It was mainly owing to an increase of crude payable in terms of volume and price when compared to the end of 2016. The payment period

The details of long-terms debt are shown below

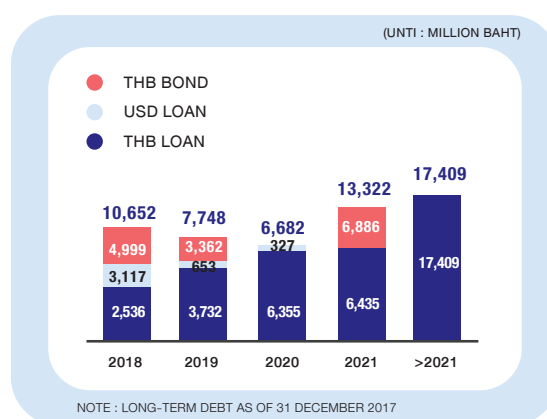
	Dec 31, 2017	Dec 31, 2016	Change
USD Bonds	0	8,567	(8,567)
Thai Baht Bonds	15,248	22,629	(7,381)
USD Loan	4,097	5,204	(1,107)
Thai Baht Loan	36,467	20,045	16,422
<b>Total</b>	<b>55,812</b>	<b>56,445</b>	<b>(633)</b>
less current portion of long-terms loan	(10,660)	(19,704)	9,044
<b>Net Outstanding Debt</b>	<b>45,152</b>	<b>36,741</b>	<b>8,411</b>

- Other non-current liabilities increased by Baht 175 million. This was mainly from an increase in employee benefit obligations by Baht 133 million and deferred tax liability by Baht 42 million.

was 43 days, decreasing by 7 days compared to 2016 as the reduction of crude payment term from 90 days to 60 days.

- Other current liabilities increased by Baht 2,924 million, mainly attributed to an increase of Baht 1,907 million in a constructions payable, an increase of Baht 1,112 million in excise tax and oil funds payable and an increase of Baht 108 million in accrued bonus. While there was a decrease of accrued interest of Baht 171 million.

### MATURITY OF LONG-TERM DEBT



- Long-Terms loan including current portion of long-terms loan decreased by Baht 633 million, mainly caused by drawdown of long term loan amounting to Baht 19,500 million against repayment of loans and bonds amounting to Baht 19,322 million and unrealized foreign exchange gain of Baht 787 million from Thai Baht appreciation.

(Unit : Million Baht)

## 2.3 Shareholders' Equity

As of December 31, 2017, shareholder's equity amounting to Baht 87,650 million, which was higher than it was stated as of December 31, 2016 by Baht 6,645 million. This was owing to an increase in net profit amounting to Baht 11,354 million, partially offset by dividend payment amounting to Baht 4,694 million and a decrease in the fair value of available-for-sale of investment amounting to Baht 67 million.

## 3 Statement of Cash Flow

(Unit : Million Baht)

	2017	2016
1. EBITDA	20,420	17,430
2. Change in operating assets and liabilities	(174)	(10,206)
3. Net cash flows from (used in) operating activities	<b>20,246</b>	<b>7,224</b>
4. Net cash flows from (used in) investing activities	(9,768)	(10,687)
5. Net cash flows from (used in) financing activities	(10,375)	1,929
6. Net increase (decrease)	<b>103</b>	<b>(1,534)</b>
7. Cash at beginning	2,042	3,576
8. Cash at ending	<b>2,145</b>	<b>2,042</b>

As of December 31, 2017, the cash balance was Baht 2,145 million. Net cash flow increased by Baht 103 million, which was mainly contributed from the following items.

- Net cash inflow from the operation of Baht 20,246 million consisted of EBITDA of Baht 20,420 million and changes in the operating assets and liabilities of Baht 174 million (in 2016, changes in the operating assets and liabilities of Baht 10,206 million derived from the reduction of crude payment term from 90 days to 60 days). The cash outflows from the operating transactions were contributing to cash outflow included an increase of Baht 4,382 million in inventories, an increase of Baht 2,805 million in account receivables and an increase of Baht 507 million in other account receivables, while cash inflow from operating transaction included an increase of Baht 6,239 million in account payables, an increase of Baht 835 million in other payables.

- Net cash outflow from investing activities of Baht 9,768 million, mainly from PP Expansion and PP Compounding (PPE&PPC) projects and the capitalized major turnaround expenses.

- Net cash outflow from financing activities of Baht 10,375 million; mainly the long-terms loan payment of Baht 19,322 million, the short-terms payment of Baht 3,184 million, the dividend payment of Baht 4,694 million and the interest payment of Baht 2,704 million while there was cash inflow from drawdown of long-terms loan amounting to Baht 19,500 million.

## Liquidity and Capital structure

The 2017 current ratio was 0.96 times, increased 0.20 times comparing to 2016 of 0.76 times. This resulted from loan repayment at maturity in 2017 caused the current portion of long-term loan due within 1 years decreased. The company does not have liquidity risk according to its sufficient liquidity from operations.

At the end of 2017, Net Debt to Equity ratio was 0.65 times, decreased by 0.10 times from 2016 of 0.75 times due to the an increase in shareholders' equity as a consequent of improved performance. The Company could make all payments on due date and comply with all of the Financial Covenants.

## Investment Plan

The Company's 5-year investment plan (2018-2022) including projects under study amounting to Baht 53,279 million, attributed into 2018 continued projects from last year of Baht 1,933 million such as UHV Project, PPE/PPC Projects, and Everest Project as well as projects under study amounting to Baht 34,793 million. The projects under study aims to use internal feedstock to enhance the Company's Petrochemical value.

(Unit : Million Baht)

Investment Project	2018	2019	2020	2021	2022	Total
UHV and PPE/PPC Projects	1,445	-	-	-	-	1,445
Everest Project	488	-	-	-	-	488
Maintenance	2,470	2,354	2,425	4,947	2,703	14,899
Others	1,466	116	73	-	-	1,655
<b>Total</b>	<b>5,869</b>	<b>2,470</b>	<b>2,498</b>	<b>4,947</b>	<b>2,703</b>	<b>18,487</b>
Feasibility study projects	1,301	4,291	9,747	9,736	9,718	34,793
<b>Grand Total</b>	<b>7,169</b>	<b>6,761</b>	<b>12,245</b>	<b>14,683</b>	<b>12,421</b>	<b>53,279</b>

## 2018 Business Outlook

### 1. Petroleum Business

Crude oil price in 2018 tends to move up from 2017 in the range of USD 60-65 per barrel amid firm demand growth of 1.3 million barrels per day to reach 98.9 million barrels per day, driven by strong global economic growth, both industrialized and emerging countries. Furthermore, the cooperation among OPEC and Non-OPEC members, led by Saudi Arabia and Russia, to extend the 1.8 million barrels per day production cut agreement till the end of 2018 be extended from the end of March 2018, has encouraged a continued rise of crude oil price. They target to keep OECD (Organization for Economic Cooperation and Development) crude oil inventories below the 5-year Average. In addition, factors to be closely watched in 2018 are the geopolitical issues in the Middle East, including Iraq, Venezuela, Libya, and Nigeria which may result in the tight supply.

However, the market might be experiencing supply glut again from the potential 1.4 million barrels per day output of Non-OPEC members, leading by the incremental production of U.S. by 700,000 barrels per day after oil price is in an uptrend. This will put pressure on long-term oil market horizon.

### 2. Petrochemical Business

In 2018 Petrochemical business tends to grow following the global economic situation recovery of 3.7% global growth forecast especially the emerging countries such as India and Vietnam. Moreover, the lower Chinese consumption for Scrap & Waste plastic in relation with Chinese environmental concerns as well as an increase of petrochemical demand toward "One Belt, One Road" project, strongly support the polymers' demand growth. However, Polyethylene business remains under pressure mainly due to new U.S. capacity versus few additional capacity of Polystyrenics. Whereas, there are other essential factors and be pressured to petrochemical price recovery including the volatility of oil prices and the depreciation of major currencies such as the Euro, Japanese Yen, Chinese Yuan Renminbi which tends to be depreciated according to the government monetary policy. The depreciation of those major currencies may limit export growth and pressure on global price recovery.



# **CORPORATE RESPONSIBILITY**

**CORPORATE SOCIAL RESPONSIBILITY (CSR)**

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**QUALITY, SAFETY, OCCUPATIONAL HEALTH AND  
ENVIRONMENTAL MANAGEMENT (QSHE)**

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**SUSTAINABLE MANAGEMENT**

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**APPENDIX**

**CORPORATE GOVERNANCE REPORT OF  
THAI LISTED COMPANIES (CGR) 2016**

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**COMPLIANCE WITH CORPORATE SOCIAL  
RESPONSIBILITY**



## Corporate Social Responsibility

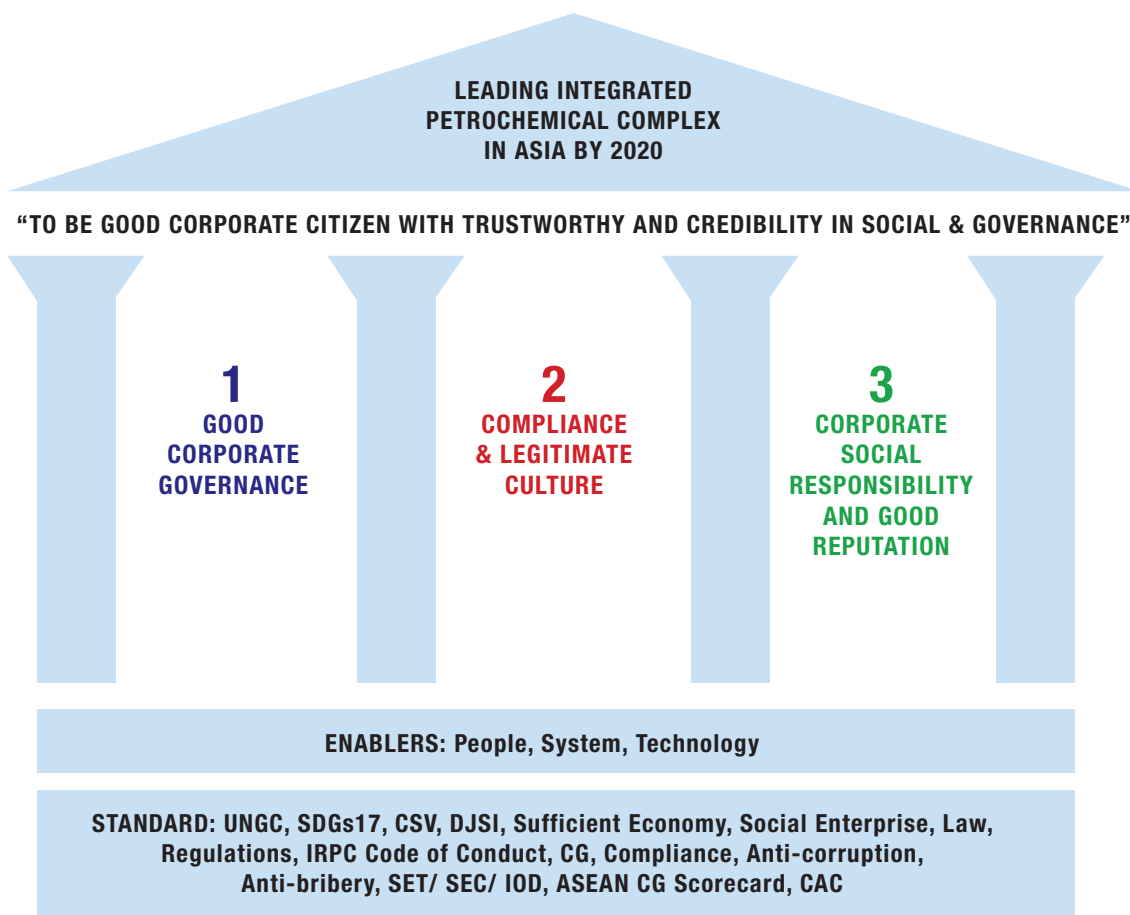
IRPC Public Company (Limited) is strongly committed to operate its business by creating organizational values in parallel with sustainable economic, social and environmental development. Throughout its business operation, the Company, not only emphasizes on business management to achieve profitable business performance and create state-of-the-art innovation to enhance competitiveness for its products, both in oil refinery and petrochemical business, but in each and every step of the business operation, the Company also realizes the significance of its accountability towards society, environment and community.

In 2017, the Board of Directors had specified and reviewed operational and strategic plan of both short-term and long-term social responsibility. The Board also agreed to push forward the excellence of good corporate governance and corporate social responsibility plan (CG & CSR Excellence) to achieve sustainable growth as in 2016, with the objective to become a good corporate citizen that builds trust and confidence for all stakeholders regarding corporate governance and social responsibility.

IRPC has implemented operational procedures in respect of social responsibility to create values to stakeholders, including society and community as follows:

### 1 Specify CSR as part of organization's strategy of sustainable growth

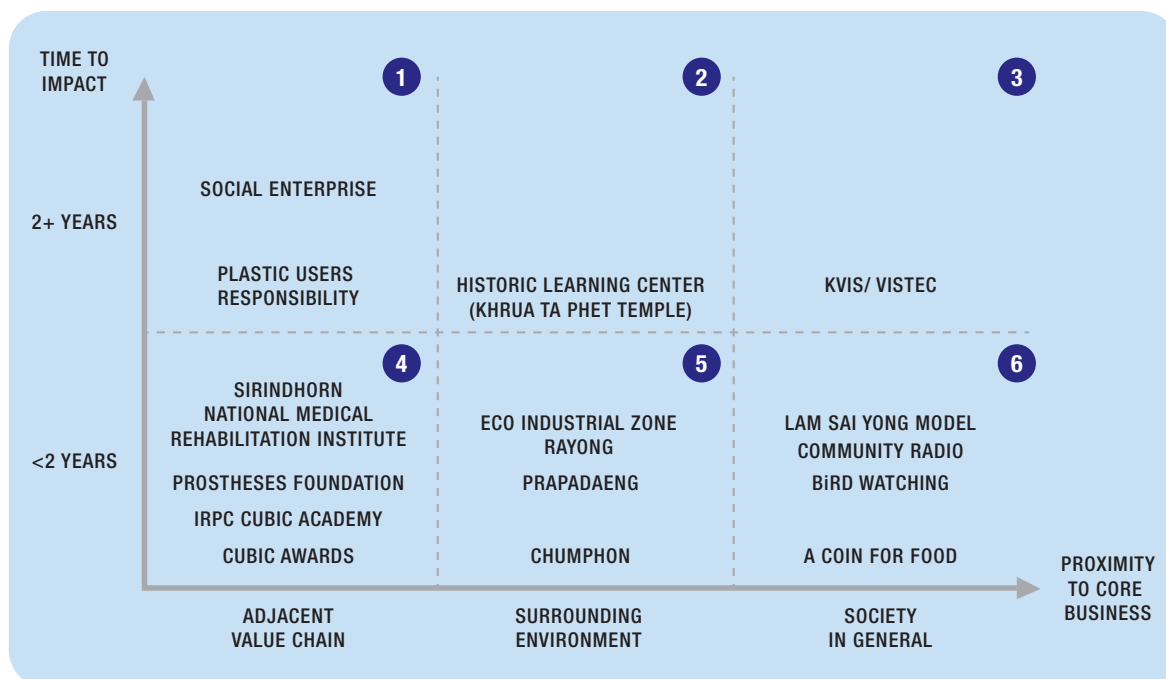
#### CG & CSR Excellence Plan



## 2 Define the criteria in selecting CSR projects

Which create balance between impact on society, community, including the Company and duration of projects that may cause such impact to maintain the highest benefits in terms of budget spending, benefit building for every stakeholder as well as strengthening stakeholders' trust and confidence.

### THE PORTFOLIO OF SOCIAL INITIATIVES (POSI) ALLOWS COMPANIES TO BALANCE: TIME TO IMPACT/ PROXIMITY TO CORE BUSINESS



## 3 Comply with sustainable development goals (SDGs)

Apart from project selection for society based on appropriate criteria, the project's format was also designed to respond and be in line with SDGs 17 of the United Nations. In 2017, the Company successfully performed and completed all 17 goals of SDGs.

IRPC has evaluated the business sustainability by employing DJSI, considered as organization's goals and objectives in which the Company has been a certified member in oil and gas category for 4 consecutive years. In addition, IRPC had evaluated the progress of its policies on social responsibility, anti-corruption and conformity to sustainable development goals as established by Thaipat Institute in 2017 which stated that "the Company had disclosed more operation information in compliance with sustainability issue that responds to sustainable development goals in the area of economy, society and environment, compared to the average of every organization being evaluated, especially in economic and environmental perspectives, the Company had gained a higher score than the

average score of other organizations. This, in turn, reflects that the Company has been rated a good level in its operation and information disclosure of all 3 areas. Nevertheless, the Company should review its procedures, including the continuity of business operation to follow-up more efficient performance result which will be employed as valuable insight for further improvement.

Details of significant CSR projects in 2017 can be seen in page 192-203.

### 4 Specify the objectives of CSR projects for value creation and social transformation

### 5 Risk evaluation in the area of corruption of CSR projects.

The result has not indicated any significant risks.

### 6 Constantly educate and encourage participation in proposing initiatives/ activities and guidelines on social responsibility with employees and every stakeholder group.

## 7 Operate business in line with UN Global Compact (UNGC)

in which the Company has been a certified member since 2011. In 2016, IRPC had participated in the founding of Global Compact Network Thailand: GCNT, one of the networks with the total of 80 membership countries worldwide. IRPC has implemented and adhered to 10 international principles of UNGC, encompassing 4 major areas with responsibility towards its obligations. To achieve this end, the Company has specified Good Corporate Citizenship Policy under the UNGC to be enforced in the Company and IRPC group.

### 7.1 Human rights

IRPC has valued human rights principle by adhering to UN framework of Protect, Respect and Remedy if any violations of human rights resulting from business procedures occur, in line with CSR guidelines of Care Share Respect, especially for the community surrounding IRPC's ecological industrial area which are considered a major stakeholder of the Company and to ensure that the Company will operate its business without any violations on human rights in every activity. Consequently, the Company has specified human rights policy for strict compliance within the Company as well as IRPC group.

IRPC has consistently protected the right of employees and contractors by conforming to labour laws, favourable work atmosphere, welfare promotion to employees as required by the Company's regulations, fair security treatment for both employees and contractors such as preparing safety manuals during plant's maintenance and enforcing strict compliance on such matters.

IRPC has also prepared due diligence to evaluate risk on human rights in which sufficient measures responding to such risks have been established. Furthermore, evaluation and rectification procedures for community and environment affected by the plant's operation have also been set up; for example, 24-hour complaint handling, providing staffs to spontaneously solve the problem in that particular area, disclosing information of activities that may affect the community before, during and after such activities completion. In 2017, approximately 618 visitors had visited 9 EIA standard plants and visited ports for 15 times.

The President and senior executives have valued the significance of complaint handling in which complaint handling procedures of every significant issue must constitute of at least one step of auditing. An Internal Audit Department must inform the President of such issue for acknowledgement and problem-solving

while taking into account fair operations procedures and whistleblower's protection.

In 2017, the Company has participated in the seminar and operational meeting regarding human rights, hosted by Human Rights Committee, Ministry of Justice, Thailand Development Research Institute, UN agency and also cooperated with Rights and Liberties Protection Department in organizing a seminar of "Operational meeting to clarify directions in moving the operation forward on the basis of UN principle of business and human rights" as well as attending the seminar with ASEAN Intergovernmental Commission on Human Rights: AICHR in "AICHR Training on Business and Human Right".

Furthermore, the Company also arranged for the Constitutional Court to hold a seminar on community and environmental rights that are in line with the new constitution of the Kingdom of Thailand which illustrates the Company's strong intention to operate its business while taking into consideration relevant international principles of human rights.



### 7.2 Labour

The Company has organized 8 labour unions in total, illustrating the freedom of its labour in the establishment of union and certification of right in negotiation. The President acts as the Chairman of employees' meeting. Nevertheless, any changes in regulations and welfare of employee will be disclosed during such meeting for clear understanding and acceptance. Moreover, the Company has provided various communication channels for personnel's acknowledgement, suggestions, recommendations and complaints such as Intranet Teammate Blog and

P.O.Box 35 etc. However, the Company have never employed child labour or forced labor while simultaneously emphasizing on indiscrimination of employment and occupation in which employment will be considered from an appropriateness of work condition in various job positions for safety and security issues.

### 7.3. Environment

IRPC has strongly adhered to environmental responsibility guidelines as prescribed by international standards and has successfully implemented these established guidelines more than minimum legal requirements as can be seen from the report on safety, occupational health and environment on page 205-212.

### 7.4 Anti-corruption

The Company strives to build faithful and transparent organizational culture by stressing on strict anti-corruption policy throughout the organization with an implementation on policies and concrete practice. Therefore, in 2016, the Board established concrete anti-corruption policies and guidelines; for example, anti-corruption and anti-bribery policies to be enforced with every personnel of every level, both in the organization and its group. No gift policy and promotion of the establishment of anti-corruption network for the Company's stakeholders; namely, commercial partners, subsidiaries, joint ventures and contractors. The Company have continuously enforced such policies throughout 2016-2017.

## Business operation in compliance with ISO 26000

The top management has realized the significance of responsible business operation to foster stakeholders' confidence and to improve the Company's image. Significant operation in 2017 based on ISO 26000 and guidelines for social accountability and guidelines for CSR report of SET will be described below:

### 1. Corporate governance

IRPC has strictly and consistently operated business in compliance with corporate governance of the Company. Details on corporate governance on page 56-79.

### 2. Fair business operation

IRPC has prepared corporate governance and business ethics handbook and promotion of regulations compliance handbook which have been published on the Company's website and reviewed annually to strictly enforce compliance of employees of every level. Details are further explained in corporate governance report page 56-79.

### 3. Anti-corruption

IRPC has strictly conformed to its anti-corruption policies as can be seen from corporate governance report page 56-79.

### 4. Respect of human rights

IRPC respects and encourages the protection of human rights as declared in UN Global Compact: UNGC, with equitable treatment regardless of any similarities or differences in terms of race, religion, gender, age, education background and social status. The Company also values an individual's right and freedom while striving to protect personal information.

### 5. Equitable treatment of labour

IRPC emphasizes on equitable treatment of labour by adhering to UN Global Compact. The Company has set up operation system with an emphasis on safety and appropriate workplace sanitation. In addition, the Company regularly improves and enhances employees' potentials and skills with regard to Individual Development Plan (IDP) with the use of performance management system while simultaneously supervising and improving employees' welfare as deemed appropriate. Moreover, evaluation of employees' involvement and satisfaction towards the organization for future development have been implemented as well. Details can be seen in corporate governance report on page 56-79.

### 6. Responsibility for consumers

IRPC has defined efficient management strategy regarding channel distribution for its products by taking into consideration different consumers' behavior and requirements while stressing on the highest level of customer satisfaction and establishment IT system to handle important databases for each business type in effective response to customers' requirements such as IRPC Relationship Information System (IRIS) to be in compatible with customer relations management of petroleum business. The Company also gathers business information to be employed as database for analysis to respond to customers' needs and requirements while systematically solving customers' complaints, including CRM IAsset system, launched in 2015. As for the future, the Company can employ technology as stated in IRPC 4.0 policy to respond to customers and consumers' needs more efficiently.

### 7. Community and society development

Details of social responsibility projects in 2017 will be further explained on page 192-200.

# 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	IRPC's projects
<b>1 Disparity between the rich and the poor (Ref TDRI)</b> Strategic plan no. 3 the development and reinforcement of people's capability Strategic plan no. 4 the creation of opportunity for social equality		<ul style="list-style-type: none"> <li>Lam Sai Yong model project</li> <li>Community enterprise project</li> <li>Prostheses Foundation of Her Royal Highness the Princess Mother "Give Never Stop" project</li> </ul>
<b>2 Premature pregnancy</b> Strategic plan no. 3 the development and reinforcement of people's capability		<ul style="list-style-type: none"> <li>Promotion of women's right project</li> <li>Muslim Foundation for Underprivileged Youth project</li> </ul>
<b>3 Changing climate affecting epidemic incidence</b> 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		<ul style="list-style-type: none"> <li>Eco Industrial Zone</li> <li>Restoration, conservation and protection of mangrove forest project</li> <li>Natural trail and mangrove forest view tower</li> <li>Reforestation project to protect waves (Chumporn)</li> </ul>
<b>4 Changing educational values</b> Strategic plan no. 3 the development and reinforcement of people's capability Strategic plan no.4 the creation of opportunity for social equality		<ul style="list-style-type: none"> <li>Cubic Academy project</li> <li>1 for 9 project</li> <li>School for the elderly, Amphoe Mueng Rayong</li> <li>The Legend of Mon Phra Padaeng</li> </ul>
<b>5 Medical treatment right</b> Strategic plan no. 3 the development and reinforcement of people's capability Strategic plan no.4 the creation of opportunity for social equality Strategic plan no.6 balance adjustment and development of public management		<ul style="list-style-type: none"> <li>Pan Nam Jai Clinic for community</li> <li>Give Never Stop project</li> <li>Mobile medical unit to check-up health for the community project</li> <li>Project to monitor the wellness of people</li> <li>Health Promotion Fund for communities surrounding IRPC Industrial Zone</li> </ul>
<b>6 Unbalanced cost of living and wages</b> Strategic plan no. 3 the development and reinforcement of people's capability Strategic plan no. 4 the creation of opportunity for social equality Strategic plan no. 6 balance adjustment and development of public management		<ul style="list-style-type: none"> <li>Sarn Palung Social Enterprise Co., Ltd.</li> <li>Employment opportunity for mooring rope project</li> <li>SE (Social Enterprise)</li> <li>IRPC Technological College</li> </ul>
<b>7 Natural disaster and its prevention</b> 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		<ul style="list-style-type: none"> <li>Eco Industrial Zone</li> <li>Restoration, conservation and protection of mangrove forest project</li> <li>Lam Sai Yong model project</li> <li>Green Port (MARPOL)</li> </ul>



## 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

### 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



- Lam Sai Yong model project
- Community enterprise 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



- Combined He and Power Plant (CHP)
- RDCC plant
- 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 Industrial Zone
- Restoration, conservation and protection of mangrove forest project
- Green Port (MARPOL)

#### 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



- The Legend of Mon Phra Padaeng
- Rak Le Rak Silp Tin Tai project (Love the sea and arts in southern provinces' project)
- Restoration, conservation and protection of mangrove forest project
- Natural trail and mangrove forest view tower

#### 12 Thailand, a door to the new world

Strategic plan no. 1 security issues  
Strategic plan no. 2 balance adjustment and development of public management



- KVIS/ VISTEC
- Innovative products for quality of life and environment
- Walking Robot to assist Paraplegics

#### 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



- RDCC plant
- Eco Industrial Zone
- Protection Strip project

#### 14 Life safety and waste management area

Strategic plan no. 4 the creation of opportunity for social equality  
Strategic plan no. 5 the building of growth on environmental friendly quality of life



- Promotion of responsible plastic users
- Love Rayong River project
- Green Port (MARPOL)

## Major Corporation Social Responsibility Projects 2017



### Environment



#### 1 Lam Sai Yong Model Project Phase II

IRPC focused on contributing benefits to the community and society by applying the knowledge and potential of the organization and IRPC personnel. The IRPC Lam Sai Yong Model Project Phase I was initiated in 2014 with the cooperation from the Foundation for Education and Public Welfare to dredge 5 reservoirs at Nong Yang Village, Lam Sai Yong Sub-district, Nang Rong District, Buriram province to be 4-meter deeper which was completed at the end of the year. The water can be increasingly stored by approximately 100,000 m<sup>3</sup> or one double. This made the community be able to benefit from such reservoirs more from 350 households to 440 households. The community could earn more income from the sale of vegetable garden products at the average of 30,000 baht per year per household.

In 2015 IRPC's volunteers took part in repairing and improving the water supply system of Nong Yang Village which contain high concentrations of sediment as well as installing the wind turbine making water clear, clean, and standardized for consumption and use hygienically.

The Project Phase II was started the operation in 2016. IRPC's volunteer civil and electrical engineers did the field trip to survey and pipeline plastic PE pipes which

were the Company's product from Lam Sai Yong connected to the reservoir at the size of 270,096 m<sup>3</sup> dredged by the government in the distance of 1.2 kilometers. The solar-powered water pump was installed for the community not to be annoyed with the electricity charges. As a result, the communities could benefit the reserve water in the dry season increasingly from 3 to 10 communities throughout the Sub-district. The project was completed in January 2017.

IRPC monitors the progress of the project continually. It was found that the project created the benefits to the communities absolutely. IRPC plans to use it as the model in other arid areas. In the year 2017, IRPC had been cooperated with the Governor of Sisaket Province in selecting the areas in Sisaket Province that were ready to be the area for implementing the Project Phase III which was expected to be completed in 2018. Such project will enable IRPC in summarizing the knowledge and budget management in the implementation of the drought-resilient program of the private sector following such model successfully. It will be publicized to the public or the community as a model to cooperate with private companies in solving the drought problem of the country.

## 2 The Forest in Rayong Project “Phra Samut Chedi Mangrove Forest–the Unique Jewel of Rayong”

IRPC in collaboration with Rayong Provincial Administration and the public and private sectors launched the Forest in Rayong Project called “Phra Samut Chedi Mangrove Forest–the Unique Jewel of Rayong”, at Pak Nam and Tambon Noen Phra, Rayong, to develop the mangrove forest at the estuary of the Rayong River.

The project is aimed to increase green areas accessible to the people for direct and indirect use as suits the areas. A total of 500 rais of mangrove forest was developed as a learning center, learning and recreation buildings constructed with a nature trail for mangrove forest ecosystem learning, community seedling nursery, two piers, and the Project Office. Residents in the areas can make use, directly and indirectly, of the mangrove forest to increase income, better lives, achieve economic and social quality, and prepare for the Eastern Economic Corridor (EEC).

## 3 Flood Problem Solution

In response to the communities' concerns over the floods that happened during every rainy season, IRPC defined measures and formulated plans to prevent and solve the problem. The project (since 2016) included collection of waterborne weeds, canal dredging, and enlargement of waterways inside and outside the industrial zone. Water levels in the reservoir in the zone are 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 will 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. IRPC also provided heavy machinery to develop the communities' public areas, such as canal dredging and restoration for community use in Klong Bot, Klong Thue Rat in Ban Sak Lek and Ban Mab Song Salueng, Moo 4, Moo 5 and Moo 9, Tambon Bang But, Amphoe Ban Khai. Water retention areas were increased to reduce impacts from floods in the rainy season. This is another public facility project to benefit communities. Throughout the past 1 year, the communities were not affected by the flood problem in such areas.



*Canal dredging to solve flood problem.*

## 4 Campaign in Promotion of Responsible Plastic Users

**Tourism promotion under the “Waste to Revenue” theme**

IRPC in cooperation with University of the Thai Chamber of Commerce and Assumption College Rayong invited trios from secondary and vocational schools in Rayong and neighboring provinces to participate in a Short Film Production Training Project

to promote Rayong tourism under the “Waste to Revenue” theme.

### **Environmental Conservation Promotion/ Pattaya**

IRPC and the City of Pattaya joined in a project to support sustainable tourism activities in the 9th “Na Kluea – Walking and Food Tasting” to forge social and environmental responsibility awareness and campaign on “Being a Responsible Plastics User”. IRPC arranged training and education on “Safe use of Plastics” to entrepreneurs in the Na Kluea area,





## Health and quality of life



activities to increase awareness of community participation in conserving environmental quality, provided public relations on using plastics in a responsible manner, arranged waste management and solids and plastics segregation activity based on the 3Rs principles ("Reduce Reuse and Recycle").

### 5 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 Industrial Zone under the management of communities, and occupational health service provided by public health specialists. IRPC contributes 6 million baht to the fund every year. The fund brings about benefit in promotion, prevention, remedy and improved health of the residents surrounding the IRPC Industrial Zone. Progress report meetings are held every two months.



### 6 Prostheses Project

Prostheses Project is the pride of IRPC in applying the polymer innovation which is IRPC's product to be used as the raw material in making the prostheses for the Prostheses Foundation of HRH The Princess Mother in contribution to prosthesis production at the average of 20-25 tons per year in order to make the prostheses for the disabled people from all races and religions to resume to have better quality of life and to live happily in the society as same as healthy people. The project has been continually implemented since 2011.

From 2011, 13,374 pieces of prostheses were produced for 11,487 patients from 115 tons of polymers.

At the 2017 Annual General Meeting on April 4, 2017, at Centara Grand at Central World, IRPC invited the Prostheses Foundation to set up a booth displaying its activities with IRPC. Many shareholders visited the booth and donated 33,025 Baht to fund its activities.

Furthermore, IRPC's supported the volunteers under Repair, Rebuild, and Refill Happiness Project. Engineers and electronic and electrician staff attended the Mobile Prosthetic Service Unit (MPSU) to help install equipment and devices and produce prostheses for patients during December 1-3, 2017, at the Thailand Design Expo 2017, Impact Muang Thong Thani. The event served 46 patients, and 51 prostheses were made.



## 7 Walking-Aid Robot for Paraplegics

IRPC signed in the MOU with Sirindhorn National Medical Rehabilitation Institute and Sripatum University in medical innovation development of "Walking-Aid Robot Development Project for Paraplegics". The project was developed by conducting research and development of medical equipment to help paraplegics lead a normal life and have better quality of life. IRPC and Sripatum University have been researching and developing ultra-high molecular weight polyethylene (UHMWPE), which is especially durable, highly resistant to impacts, shock absorption and corrosion, and light-weighted to reduce the weight for 10 kilograms from 25 kilograms. Hence, it can be used to replace the original parts of the walking-aid robots and help the disabled, the incompetent, or sick people by developing medical equipment of industrial scale for the benefit of society.

## 8 IRPC Give Never Stop

IRPC together with FM.91 Trafficpro Radio Station launched "GIVE NEVER STOP Project Providing Life-Saving Equipment" to help the needy and the underprivileged so that they can lead a normal life with a better quality, as there is still a great need for medical devices or life support equipment. In 2017, in the period of 4 months (September 1-December 31, 2017), the project supported 310 needy and underprivileged persons.



## 9 Pan Nam Jai Clinic

IRPC established Pan Nam Jai Clinic (Community Sharing) in 2010 at IRPC Community Learning Center to provide free public health service and basic medical care to the communities surrounding IRPC Industrial Zone. In 2017 the clinic served 4,238 patients: with the total number of 8,848 IRPC Cards. Records and information on Pan Nam Jai's healthcare services will be forwarded to Rayong Hospital for its healthcare database system for treatment planning.

## 10 Mobile Clinic

Under cooperation with Queen Sirikit Hospital, Department of Naval Medical, IRPC arranged mobile clinical service to provide general medical care to those who are not able to travel to hospitals or the monthly Pan Nam Jai Clinic. In 2017, it served a total 1,735 patients living in the Tambon near IRPC Industrial Zone, namely Ban Laeng, Taphong, Na Takhwan, and in Choeng Noen and Nakorn Rayong Municipalities.

## 11 Project to Monitor the Wellness of People

IRPC set up a geographic information system (GIS) database of the communities in the surrounding areas 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 to the communities of 10,398 families (38,256 persons). Random sampling of 900 samples will be collected for three years, from 2015 to 2018. Air quality test results will be analyzed to formulate a healthcare surveillance plan for the communities around the industrial zone.

## 12 Drinking Water for Communities

IRPC distributed clean, standardized drinking water to the communities and government agencies surrounding IRPC Industrial Zone to enhance relation and support their public activities, such as religious events, training, meetings, cultural ceremonies, merit-making. IRPC gave out 211,392 cups and 24,864 bottles of drinking water in 2017. It is the pride for IRPC in bringing 500,000 bottles of IRPC water for community to serve the people attending the ceremony of Royal Cremation.





## Education

### 13 KVIS & VISTEC Project

IRPC joined with PTT Group to develop youth which was the excellent resource of the country in science and technology by establishing Kamnoetvidya Science Academy (KVIS). The name given by HRH Princess Maha Chakri Sirindhorn meant the "School of Science Learning". It is open for students in secondary school of 4<sup>th</sup> – 6<sup>th</sup> year by providing education to talented students in science and math. The higher education institute was also given the name from HRH Princess Maha Chakri Sirindhorn as "Vidyasirimedhi Institute of Science and Technology (VISTEC) meaning the "Institute of the Great Science Educators" offering both masters and doctoral degrees in science. The two institutes are designed to meet the potential for full development setting the goal to become the "Leading research university" in creating excellent people and researchers with professional responsibility. It also promotes research and development in science and technology to build knowledge and to promote the competitiveness of science in Thailand. Both Kamnoetvidya Science Academy and Vidyasirimedhi Institute of Science and Technology are located on Highway No. 344, Km. 66, Pa Yub Nai Sub-district, Wang Chan District, Rayong Province.

### 14 IRPC CUBIC ACADEMY

Established in 2015, IRPC Cubic Academy is intended to create a sustainable learning institution and society with quality and ethical personnel. IRPC Cubic Academy developed six training courses with an emphasis on spurring business growth with sustainability. The training covers good governance, social contribution, communication, green business, promotion of good corporate image and sustainable business conduct, knowledge which IRPC can share. Participants consist of employees and external interested participants. These training courses are free of charge.

The training is structured in the form of classroom lectures, exchange of opinions, workshops, and social responsibility activities. Course facilitators are knowledgeable people from within and outside IRPC. The four-month course, regularly held every Thursday during 13:00-17:00 hours at the IRPC Office, is opened for 100 participants. Since its establishment, the academy has held a total of five classes for 510 participants, 425 of whom are IRPC employees and 85 external interested participants.



Such project received Asia Responsible Entrepreneurship Awards (AREA Awards) in the Investment in People from Enterprise Asia, the independent organization in the promotion of responsibilities and sustainability of private organizations in Asia-Pacific region, and Golden Peacock Global Award for Corporate Social Responsibility 2017 from Institute of Directors, India, from being the organization with Corporate Social Responsibility using the resources available both inside and outside the organization efficiently.

### 15 1 for 9 Project

IRPC, in cooperation with public organization Office for National Education Standards and Quality Assessment (ONESQA), has organized the “1 for 9” project since 2014, considered an innovation in academic development, according to IRPC’s intention to conduct business with social responsibility. The project has three objectives, namely development of academic quality and standards, development of educational system quality assurance by giving assistance to nine educational institutes to proceed in their quality development cycle, and application of IRPC’s competence and equipment into institute development. IRPC and participating schools jointly designed development in four aspects, namely academic essence knowledge, ethics promotion, students’ safety and occupational health, and schools’ role in community and environmental development. The latter aspect is considered part of the government’s project on “reducing classroom time, increasing study time”.

“Enhance the Genius by Making a Robot”, implemented for students of Prathom 4–6 (grades 4–6) from Beacon House Yamsaard Lad Prao School. “Be Genius by Making a Robot” is an after-school club established to increase time and opportunity to learners to practice, to experience analytical thinking, to be able to work as a team and to self-learn happily. The activity also increases the learner’s potential in the

use of technology, basic knowledge in the digital era, creative inventions, skills for daily life, thinking and development of ideas in a wide scope and effective communication. The activity is learned by making a robot under the Raise Mechanic course designed by Raise Genius School, where learners will be practicing equipment, exercise imagination, analytical thinking and pass on their imagination in the 3D form. After completion, it is expected that learners will have basic knowledge in making robots and be able to create basic robots as well. The first semester of 2017 –Level 1 was run for 30 students every Wednesday between June 7 and September 27 from 14.20–5.30 hrs.

Moreover, in 2017, IRPC also supported 3 youths in Rayong Province who had the potential in the invention and control of robot to attend the World Robot Olympiad 2017 (WRO2017) in San Jose, Costa Rica.



### 16 Scholarships for community

IRPC provides educational opportunities through the Scholarships for the Community Project. In 2017, 310 scholarships worth 2,118,000 Baht were given to 310 needy youths with good academic records and behavior who live around IRPC Industrial Zone. These students are from primary, secondary, vocational and university levels and were selected by leaders of 89 Rayong communities.





## Religion, art, and culture



### 17 IRPC project to conserve culture

#### • Seafaring Buddhist Robe Offering

Being aware of the importance in conserving the local tradition, culture, and religion maintaining, IRPC in cooperation with held a “Seafaring Buddhist Robe Offering” (September 2, 2017) ceremony, initiated by the fishing communities in Moo 1, Tambon Hat Sai Ri, Amphoe Mueang, Chumphon, to conserve the near-extinct Thai cultural tradition. A procession of 40 fishing boats brought Buddhist robes to present to monks at Wat Phlap Phla, near IRPC’s Chumphon Oil Depot. The fund raised in the event was used for restoration of the crematorium of Wat Phlap Phla, purchase of safety boats, purchase of medical equipment, etc. In addition, IRPC and Chumphon Culture Office organized the “IRPC loves Southern Sea and Arts” event to preserve the cultural tradition of southern Thailand. Activities included a local food set contest, sport competition, sea boxing, shadow puppet theater, shadow puppet play, and Manora dance. The event was honored by Khun Narong Phollait, the Governor of Chumphon, to preside. This event also encouraged all relevant parties to be aware of the importance of the value of cultural heritage of the community in order to preserve sustainably.

#### • Kathin Samakkee 2017

IRPC arranged a Krathin Samakkee ceremony annually for the temples in the area surrounding IRPC Industrial Zone to promote and conserve the Thai culture together with communities, government and



private sectors. In 2017, IRPC hosted this ceremony at three temples and co-hosted at eight temples, using a total budget of 2.5 million Baht. Moreover, in the lent ceremony, there is the continual practical tradition for IRPC to give the candles to 9 temples located around the IRPC operating zone.

### 18 Thai Shadow Puppet Theater (Nang Yai), Wat Ban Don

IRPC joined in the conservation of this Thai cultural tradition, which is over 200 years old. The Nang Yai is a high-art performance which includes five invaluable arts: handicraft, dancing, music, rhetoric and literature. IRPC provided budget to cover operating costs for two screens for the shows, costumes, foods and encouraged youths who are interested in folk arts to learn this puppetry arts to make them proud and appreciate their local arts, which will lead to further development and elevate it to national and international levels.



- **Amazing Songkran**

IRPC and the Tourism Authority of Thailand (TAT) joined in the “Amazing Songkran 2017” event during April 8–13, 2017, to promote cultural tourism and Thai Songkran tradition among Thai and foreign tourists. IRPC is the only company from the private sector to jointly organize the event and lead an Electric Float Parade under the “IRPC Green Songkran” concept by using IRPC’s green plastic products to decorate the float with a procession of actors as representation of environmental conservation.



## Social development

### 19 Occupation and Employment Promotion for the Disabled

IRPC is one of the private sectors that recognized the ability of the disabled by help creating jobs order for them to be self-reliance with stable income to support themselves and their families, live with dignity, and enjoy a better quality of life.

Apart from hiring 5 disabled employees, In 2017, IRPC held two projects to support the disabled as follows; the Drinking Water Project: 20 positions opened for the disabled through The Innovation for Society at Tambon Waloei, Amphoe Phop Phra, Tak, at an average of 109,500 Baht per person per year, or a total of 2,190,000 Baht, the Redemptorists Foundation for PWDs” with Sufficiency Economy Project, aiming to provide occupational training for the disabled so that they may be able to work in positions and an environment suitable for them. IRPC supported such training for 26 disabled at an average 109,500 Baht per person per year, or a total of 2,847,000 Baht.

In addition, the operation has been implemented more than as prescribed by law by supporting the Smile Farm for Chance project to the disabled in the care of the Redemptorists Foundation. This can further the agricultural market in accordance with the sufficiency economy to increase family income and improve quality of life.

### 20 Promotion of community enterprise

IRPC values the quality of life of residents in the communities around IRPC Industrial Zone and has promoted model groups of community enterprise since 2007 through enhancement of potential and skills, development of knowledge in product processing, packaging and standards, pursuit of sales channels for community products. IRPC supports 40 community enterprise model groups to strengthen their business and become self-sustaining, which generated an income of Baht 300,000 per group. IRPC also employs the communities’ services and engages in product procurement from the communities. In 2017, this procurement accounted for Baht 296 million.

### 21 Public Facilities

In response to the communities’ needs, IRPC implemented projects beneficial to the surrounding communities, In 2017, IRPC constructed public facilities for the most benefit of communities such as projects to support thermal foggers, improvement of the landscape, a granular fertilizer plant, monasteries, exercise yards and a community occupational promotion center, installation of lights and lighting for public paths, and construction of a multi-purpose building, Civil Defense Volunteer Center, stands for the football stadium and village guardhouses.

## 22 Volunteers' Hearts for Community Development

IRPC encourages its employees to use their potential and knowledge in the activities of the Company as well as the communities for the development of the communities surrounding IRPC Industrial Zone. The activities included improvement of buildings and the community tap water system. Our volunteers also held Thai language and basic English courses for the elderly at Nongjok Convent. The project aims to benefit communities, raise public awareness among employees, create cooperation networks, and cultivate CSR DNA. In 2017 a total of 1,859 employees joined the activities with 17,447 hours spent.

## 23 IRPC Community Network Learning Center

IRPC Community Network Learning Center was established to be a learning center, promote and develop environmental matters and enhance communities' occupations and economy as well as a platform to strengthen relations between members in the communities, community and community, and communities and IRPC. The center offered various learning through its clubs: cooking, bakery, sewing (quilt art), yoga, dancing, science, English, mental arithmetic, Taekwondo, and so on. In 2017, about 11,065 people joined the activities during Saturdays and Sundays. There is also the Open House annual event to arrange the topic of seminar on the environmental management in the operational zone. The stakeholders were led to the factory to have public relations on the information with stakeholders around the operational



zone with various channels such as newsletters, videos, CSR Story, brochures and press releases via radio and cable TV to disseminate to all sectors about the operations of IRPC continually.

## 24 School for the Elderly, Amphoe Mueang Rayong

The school represents another model for promoting lifelong learning, educational management, and development of the elderly's life quality. IRPC improved the course structure following those of other elderly schools. The courses and learning activities were designed to suit the elderly in the communities and useful to their living, enhance their knowledge and skills, both physically and mentally, to make them happy in these activities together. The knowledge gained will also be useful to their occupation and in generating income to benefit themselves, their families and society. The school had 128 students and held 13 learning activities this year, which included happy recreation, and self-treatment through Thai traditional medical knowledge, and a trip to Song Salueng Agri-Nature at Amphoe Klang on self-sufficiency.

## Social Return On Investment (SROI)

The Company has prepared an evaluation of social contribution illustrating "result" or "value" derived from social activities in reviewing past projects and to systematically employ such information in procedure and strategic planning in the future. Selection of projects to be evaluated will take into account projects with high investment rate, high social impact and high outcome for the organization.

Two projects evaluated in 2017 were:

Prostheses project with 1 baht of investment and 6.66 baht social return.

Lam Sai Yong Model project with 1 baht of investment and 47.05 baht of social return.



## Investment in social enterprise

At present, the government has supported and developed the social enterprise by establishing the Thai Social Enterprise Office (TSEO) which is responsible for supporting, promoting, and coordinating for social enterprise developed as the social network of Thailand as well as responding to economic, social, cultural and environmental problems to be defined as "Social Enterprise". It is the business that primarily aims at solving social and environmental problems using good management mechanism of business sector combined with knowledge and social innovation in order to have financial sustainability from the main income derived from goods or services without the dependence on the donations. The profits will be reinvested to expand the social impact. This is in line with national strategic framework for equal opportunity and social difference including benefiting for the growth on an environmentally friendly quality of life.

In order to promote government policy and elevate the support in Corporate Social Responsibility (CSR) to social enterprise (Social Enterprise) for seeking the self-reliant investment with the community participation and ownership, the operation is in line with the approach to drive the organization towards sustainable development goals (SDG). IRPC Public Company Limited is committed to support social enterprises seriously in terms of budget, management, and setting of international excellence. This is another way to return to society which will be beneficial for the nation widely and will promote the progress of

youth and Thai society in the future.

In 2017, IRPC promoted the social enterprise as follows:

1. IRPC and PTT Group have cooperatively established Sarn Palung Social Enterprise Co., Ltd. (SPSE) since PTT Group has organized various social activities in the form of Corporate Social Responsibility (CSR); therefore, the Company can select and search for social activity projects capable of sustainable business operation that, in turn, will yield higher benefits, employment opportunity or problem-solving in the community. Such joint ventures consist of PTT with 20 percent share, PTTEP, PTTGC, Thaioil and IRPC with 15 percent share and GPSC and PTTOR with 10 percent share each. The first project is Café Amazon project for underprivileged in which the budget will be derived from PTT's donation. IRPC also plans to set up the learning center of alternative energy at IRPC Technological College (IRPCT) to become a social enterprise.

2. IRPC has strongly supported SocialGiver, a social enterprise, start up category, employing innovation and technology as a business platform to connect with service business sector, consumers and social projects for sustainable growth and development. From June 2017, Social Giver can support 5 more foundations (from 20 to 25) and launch campaigns to raise money for various foundations upto 2 million baht.

3. IRPC Technological College (IRPCT)

IRPC Technological College (IRPCT) is the vocational institute with 99.9% of the investment by





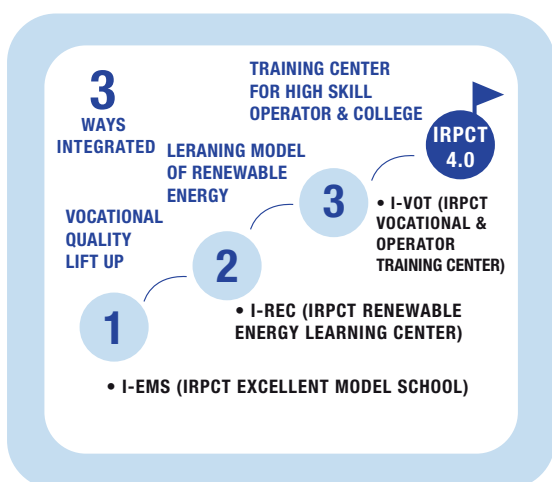
IRPC. The objective of establishment is to build the community college to respond to the needs of Rayong people in having the educational institute that produces skilled labor in the industrial sector of the country. As Rayong is the area with a lot of industrial factories, a lot of skilled workers are needed.

IRPCT under the Vocational Education Commission provides the Vocational Certificate Program and Higher Vocational Certificate Program from 1<sup>st</sup> June,

1995, under the policy support from IRPC Public Company Limited. The School-factory teaching style is developed with the aim to provide the graduates with the quality to meet the needs of the establishments of Rayong. There are more than 7,000 graduates working in the workplaces.

Apart from Thai students, since 2013 and onwards, the College has provided the education both Thai and English Program to enhance the vocational education of neighboring country having Myanmar student in the MERIT project sponsored by PTT Public Company Limited. There are also the students in the Vocational Education Scholarship Project of HRH Princess Maha Chakri Sirindhorn providing assistance in elevating the education for vocational teachers in the Lao People's Democratic Republic and the students from Cambodia and Vietnam going to cooperate in the future. There are 107 foreign students studying at the College.

In addition, IRPCT has provided the Train the Trainer program which is the development of teachers from the Lao People's Democratic Republic and Myanmar in the learning styles in electrical power engineering and electronics in order to bring such knowledge and experience back to develop the teaching system in both countries.







In 2017, IRPCT has adjusted the strategic plan to agree with the policy of Thailand 4.0, Eastern Economic Corridor (EEC) promoting the investment in the New S Curve industry including the policy of IRPC 4.0 in developing the efficiency of work with the assistance from digital system. There are 3 main mission as follows:

1. IRPCT – Excellent Model School (i-EMS) to elevate the education quality towards Asia Pacific standard by adjusting the curriculum to English Program and Mini English Program, applying information technology (e-College) and other tools in preparing Smart Learning Model (SLeM)

2. IRPCT – Renewable Energy Learning Center (i-REC) is the development on the Learning center of alternative energy as the model in learning for energy technic as well as being the learning source for students and university students from other communities under 4 Co generators Smart Grid system.

3. IRPCT – Vocational Operator Training Center (i-VOT) is the education to develop the project of training center for the operators and technicians for PTT group, vocational education institutes and operational places to respond to EEC.

Apart from being the leading vocational institute

in the East, IRPCT has also opened an IRPC Technology Services Center to provide training courses that meet labor standards and management courses such as Safety Officer Course, Safety at work in confined area, including providing the venue for training and conferences.

In 2017, IRPCT succeeded in teaching, management, Good Governance, professional skills, innovation, invention and Technology as well as receiving numerous accolades and awards, for example:

- Being accredited to be the member of Collective Action Coalition project of Thailand's Private Sector Collective Action Coalition Against Corruption (CAC)
- The 5th runner-up in the WRO 2017: World Robot Olympiad 2017 in the age of not over 19 years from 7-10 September, 2017, in Republic of Costa Rica, North America.
- Awards in the innovation and invention such as the winner in the Olympic Robot Competition, the first runner-up in the project of Go Further Innovator Scholarship 2017, the second runner-up in the competition of economic car.

Throughout the past 20 years, IRPC has continued to strive to develop quality vocational education to enforce Thailand 4.0 further.

## Operation Plan of New and Significant Social Responsibility Projects 2018

In 2018, IRPC plans to implement CSR projects that foster balance of impact between society, community and the Company. Apart from the shareholders, the Company endeavors to encourage involvement of stakeholders while considering ideas, requirements and recommendations of stakeholders more inclusively to identify precise direction that ultimately creates value to its stakeholders.

### Social Responsibility Project of 2018 are as Follows:

#### • Love Rayong River Project

IRPC, together with Thammasat University, Rayong community and Marine Office, Rayong branch organized “Love Rayong River” project as a starting point to solve problems and waste reduction in the country’s water source by encouraging youth, students, private sector and local agency to acknowledge waste problem leading to water pollution. The Company also encourages people’s involvement in inspecting, monitoring and realizing the importance of conservation of water source in Rayong province. “Love Rayong River” project will be held on April 2018. During this event, 40 canoes will start from Kod Po Public Park to Chalerm Phra Kiat View Tower for the total of 2 kilometers to collect garbage in the river while instilling awareness and involvement in solving water source problem. Such



travel route will commence from the headwater of Rayong River down to its final destination at IRPC view tower, the last mangrove forest left standing and cherished as a precious jewel of Rayong.

#### • IRPC Cubic Academy for SME & Student Project

#### • Mobile Car Clinic for Prosthesis Project

#### • Lam Sai Yong Model Project Phase III, Srisaket province

#### • Learning center of alternative energy at IRPC Technological College (IRPCT)

#### • Plastic Use with Responsibility Campaign Project

#### • Wat Krua Ta Petch Learning Center Project

#### • IRPC “Friend for Farmers” Project



# Quality, Safety, Occupational Health and Environment Management (QSHE)

IRPC Public Company Limited (IRPC) is committed to excellence and sustainable growth by taking into consideration the quality, safety, occupational health and environment (QSHE) in accordance with international standards and best practices under the umbrella of IRPC's Operational Excellence Management System. With a common goal to add value to the organization and all stakeholders, IRPC has implemented its QSHE policy, programs and activities. The major achievements of year 2017 are summarized as follows.



## Quality

IRPC has adapted and implemented quality control measures such as Quality Control Circle (QCC) and Total Productive Maintenance and Management (TPM) to increase employee productivity at the operational level and support the implementation of plant reliability by integrating QCC and TPM into IRPC's Operational Excellence Management System in order to manage the value chain of safety and environmental considerations to meet all stakeholders' satisfaction.

IRPC Company Limited started its Total Productive Maintenance & Management (TPM) to move forward to achieve its goals in 3 major criteria; namely, zero accident, zero machine breakdown and zero defect by starting from its facilities of oil refinery, basic lubricant plant and petroleum tank farm since the end of 2011 under the management of 8 major pillars consisting of:

- Focus improvement
- Autonomous maintenance
- Planned maintenance
- Safety health environment
- Education and training
- Quality maintenance
- Early management
- Office improvement

In 2016, IRPC has been granted with TPM Excellence Award from JIPM (Japan Institute of Plant Maintenance), Japan from its pilot project at the facilities of oil refinery, basic lubricant plant and petroleum tank farm. IRPC has consistently operated the TPM system while simultaneously expanding its operation to every plant under petrochemical and oil



*The management presents a "Goal Zero Accident" banner to departments as the common goal*

refinery industry. In December 2016, IRPC's performance had been re-evaluated based on the criteria of TPM award. As a result of its efficient operation and constant development, coupled with successful performance results, IRPC; therefore, had been awarded as follows:

- Oil refinery, basic lubricant plant and petroleum tank farm had received TPM Consistency Award (TPM part 2)
- Olefins and aromatics plants and petrochemical tank farm had been granted with TPM Excellence Award (TPM part 1)

These two awards presentation had been held in Kyoto, Japan on March 11, 2018.



## Safety and Occupational Health

Safety and Occupational Health is IRPC's top priority in all processes including personal safety, process safety and transport safety which may affect employees, contractors, communities as well as





The management presents a "Goal Zero Accident" banner to departments as the common goal

stakeholders. With the combination of SSHE into OEMS and adherence to international safety standards, IRPC aims to become a safe, secure and environmentally responsible organization with zero-accident and zero emergency. IRPC promotes safety awareness and culture among all employees and contractors. There are many projects and activities implemented, for example, "GOAL ZERO", "Safety Excellence", "Safe Driving Program" and "Good Health Starts Here".

IRPC developed and implemented five-year plan covering personal safety, process safety and occupational health that aims to bring a safe and healthy workplace organization without work-related injuries and emergency incidents.

The management has focused on raising the awareness of safety and occupational health. Since June 2, 2016, IRPC has implemented the "GOAL ZERO" project to encourage all employees in all areas to think about safety first. All employees must follow the operating procedures and safety requirements without taking a short cut or rush, assess job risks, and prevent safety risks.

IRPC organizes an IRPC QSHE Day every year to promote safety awareness, occupational health, environment, energy conservation and productivity. Awards are presented to the department or team who exemplifies safe working. Employee participation in the "Safety Excellence" program is a strategy to encourage changes in at-risk behavior in all dimensions, comply with safety rules and standards, and motivate the workforce to have a safety sense at all times.

In addition, the program encourages self-development among all employees to become leaders in safety, train employees to work in teams, and help/warn each other so that accident is minimized.

IRPC values road safety. It organized a "Safe Driving Campaign" to develop and instill awareness of road safety for employees and contractors in the IRPC Industrial Zone. Every morning before work and evening after work, the campaign emphasizes

and communicates the need for motorcyclists to wear helmets and drivers to buckle up seatbelts. According to the results of the survey, employees and contractors collaborated and followed the safe road instructions.

IRPC is aware of the importance of employees' health. Based on the Body Mass Index (BMI), members of the workforce are likely to become obese. Therefore, IRPC has implemented a "Good Health Starts Here" program to help the workforce keep the body fit for their day-to-day work. The program provided employees who exceed BMI standard with training on nutrition. IRPC also promoted healthy food by offering a free healthy lunch, green vegetables,



Road safety campaign promotion in the IRPC Industrial Zone

healthy refreshment and herbal drinks during business meeting. A program named “Let’s Exercise” has been implemented to promote the workforce’s exercise to stay fit and healthy.

#### • Process Safety Management

IRPC implemented Process Safety Management as an integral part of its Security Safety, Occupational Health and Safety Management and Environment under the Operational Excellence Management System (OEMS) in compliance with OSHA (Occupational Safety and Health Administration) standards. The management at all levels have demonstrated their leadership in safety and continually communicate IRPC’s commitment to workforce. The President led senior management on a visit to the work site during the major maintenance turnaround this year. They also visited the Rayong facilities and oil depots. Leadership visits have improved the workforce’s morale and demonstrated commitment to safety of the entire production processes. The commitment includes the development of e-MoC programs to support the management of change and the Incident Management System (IDMS) as a center for managing all incidents. By setting safety as one of their performance indicators, using participatory approach among work teams forges confidence among the workforce to control and prevent safety incidents.

IRPC paid a special attention to safety during the major maintenance this year. It organized the “Safety Management in 2017 Major Maintenance” to establish goals in working with contractors, conduct emergency drills and rescue drills, train safety officers of contractors, prepare manuals and media for Safety Talk and Tool Box Meeting prior to commencement of work, as well as establishing turnaround coordination centers and safety audits in each area. As a result, incident cases declined without serious accidents from that of last major maintenance in 2011.

### Response measures to minimize the impact during Major Turnaround 2017

IRPC set up an evaluation of impact on environment such as odour, noise and dirt while specifying different preventive measures to minimize and rectify potential impacts.

1. IRPC evaluated the impact on environment such as odour, noise and dirt as well as defining necessary preventive measures to rectify potential impacts.

2. IRPC managed the problem of air pollution by measuring air quality in its facilities and the communities nearby.

3. IRPC managed waste by separating waste and garbage, starting from its source while residues



Workforce participation in the “Let’s Exercise” program

resulting from the Major Turnaround had been sent to responsible agencies certified by the Department of Industrial Works for elimination in which IRPC had closely monitored and followed up the transportation of such residues.

4. Wastewater management can be classified into 2 types as follows:

4.1 Wastewater from cleaning process and system preparation which will be transported for further elimination by agency permitted by the Department of Industrial Works.

4.2 Other wastewater will be transported to IRPC's wastewater treatment system to have the same standard as specified by the Department of Industrial Works.

5. IRPC handled the problem of noise pollution by regularly measuring noise level in the community during Major Turnaround activity.

6. IRPC managed the traffic problem by arranging in-out time of contractors as well as cooperating with the traffic police to facilitate the traffic system,

7. IRPC strived to control chemical spill and leakage as well as inspecting any leakage of materials, equipment and utensils employed in containing waste to prevent toxic vapour emission to the atmosphere. In addition, vapour traps have been installed at the operation site.

8. Employees and contractors must strictly comply to every measure as specified in the safety handbook

9. News report and communication with the public sector, including local agency, community, Rayong's press shall be performed on a regular basis.

10. IRPC specified measures to minimize the impact in every activity such as field coordination center with team members to monitor risk-prone areas 24-hour a day as well as arranging the medical team to operate around the facilities.

Remarks: Communities around IRPC's facilities were estimated at 71,500 families with the total of 130 Environment



## Environment

IRPC recognizes its environmental responsibility by employing strategies for managing natural resources effectively, utilizing water resources for maximum efficiency and preventing impacts on the environment. IRPC has improved processes to become more environmentally friendly. It promoted the use of clean energy and the 3 Rs principle (Reduce, Reuse, Recycle) in the management of air, water and waste. This year the Green Turnaround Program has been implemented in all aspects, including safety, environment, and community care. This year, IRPC's factories were certified as Eco Factories based on the Industrial Ecological Framework of the Industrial Environmental Institute of the Federation of Thai Industries. Good environmental management is one of the reasons why the company has maintained membership of the Dow Jones Sustainability Indices (DJSI) for a fourth consecutive year.



*Safety Management in 2017 Major Maintenance*



Absorb about  
**3,600** tons  
of carbon dioxide  
per year





• **Pollutant Release and Transfer Registers (PRTRs)  
for the Department of Industrial Works, Ministry of  
Industry**

IRPC has participated in a pilot project to produce a PRTR report, a voluntary program organized by the cooperation between the Department of Industrial Works, Ministry of Industry, and Japan International Cooperation Agency (JICA). This program established a database containing information on industries in Rayong and their release or transfer of pollutants to the air, water and soil. Since 2012 under the cooperation with PTT Group, IRPC has reported PRTR findings under the petroleum and petrochemical group via electronic channels to the Department of Industrial Works. It has consistently improved chemical usage efficiency in parallel with raw-material and chemical loss prevention and implemented measures to reduce pollutants released to the environment.

**Reducing Greenhouse Gas (GHG) Emissions**

IRPC is committed to GHG emission reduction in alignment with Thailand's commitment to the 21<sup>st</sup> United Nations Framework Convention on Climate Change (COP21). In 2015, IRPC determined its direction to improve energy efficiency in parallel with

the reduction of GHG emissions. Its carbon footprint was certified by Thailand Greenhouse Gas Management Organization (Public Organization). It enables IRPC to identify sources of emission, assess the quantity of GHG emissions and identify improvement opportunities for efficient emission reduction. It has



Reduce VOCs by  
**60** tons per year

implemented a waste gas management project, heavy-oil quality improvement from distillation tower (UHV) project, a refractory brick coating furnace in the combustion chamber project, and reduction of heat loss at the cooling tower of the Ethylene Plant (ETP) project. As a result, this year IRPC was able to reduce GHG emissions by maximizing energy efficiency by 132,856 tons of carbon dioxide equivalent (calculated from January to September 2017).

### • Reforestation around IRPC's Industrial Zone (Protection Strip)

IRPC has continued planting a natural protection strip since the beginning of this project in 2011. This year, 18 additional rai of 5,242 trees was completed. Since the beginning of the project, 707 rai of 383,362 trees have absorbed about 3,600 tons of carbon dioxide per year.

The 707 rai of the protection strip area accounts for 12.41% of the total industrial zone area, or roughly 5,695.82 rai. It is larger than the original plan, designed at 692.42 rai. The implementation of the Protection Strip Project reduces air emission impacts, particulates and noise on the community around the site. It also adds a green landscape and reduces GHG emissions directly.

### • Management of Volatile Organic Compounds (VOCs)

IRPC has managed Volatile Organic Compounds (VOCs) to prevent impacts on the environment and communities. Control, mitigation and monitoring plans are in place. It plans to install ambient air quality monitoring stations. Also, VOCs cameras and online monitoring has been implemented this year. IRPC has spent Baht 80 million on installing the second Vapor Recovery Unit (VRU) to control VOCs from the chemical tanks of the Ethylene Plant, the Benzene, Toluene and Xylene Plant and vaporizing control systems from the tank farm. It is expected that IRPC can reduce



*Vapor Recovery Unit II*

VOCs by more than 60 tons a year.

### • Emission Control and Air Quality Improvement Program

IRPC has invested funds to limit sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>) and total suspended particles (TSPs) in air emission. Their quantities have clearly been plummeting over five years during 2012-2017 due to the use of fuels and the installation of clean combustion equipment. TGTU and CHP projects slashed sulfur dioxide and particulates from emissions. The overall reduction of both sulfur dioxide and nitrogen dioxide is more than 1,280 tons a year compared to that of before improvement.



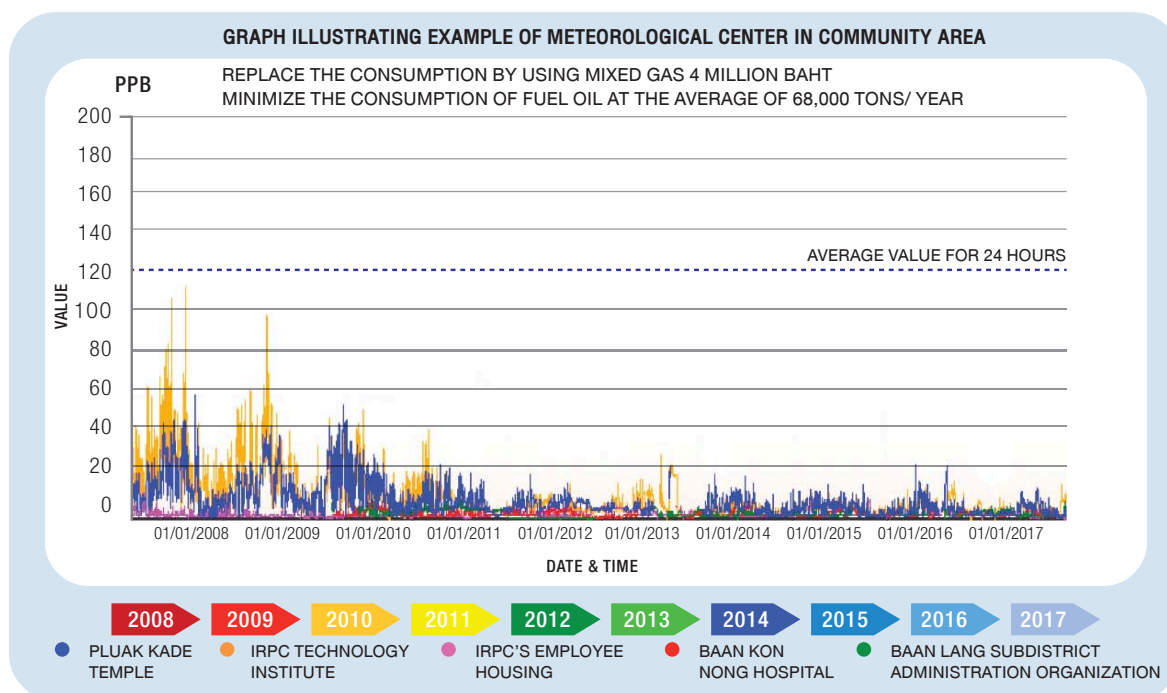
*The second Vapor Recovery Unit (VRU)*



Reduce NO<sub>x</sub>  
more than

**1,280**  
tons per year





Source: IRPC's Environmental Management Division

#### • Ecological industry development (Eco-Industrial Zone)

IRPC is committed to the development of eco-industrial zones based on a five-year strategic development plan (2012-2020), a model for the development of the eco-industry. IRPC has implemented the 3Rs (Reduce Reuse Recycle) approach, focusing on waste reduction at sources, reuse and recycling. Many projects were carried out to improve processes, including waste disposal. As a result, the quantity of hazardous waste disposed to landfill was reduced to only 1% of the total amount generated. It plans to steadily reduce the quantity of hazardous waste to landfill to zero by 2020.

This year IRPC has continued its Eco Factory and Eco Factory certification efforts. There were nine more plants certified, namely Expandable Polystyrene (EPS) plant, ABS and AS polymer and powder Plant, Plastic Compounding Plant, Wastewater Treatment Plants 1, 2 and 3, PTK Catalyst Plant, Ethylbenzene Styrene Monomer Plant, HA1 Catalyst Plant, and Water Supply Plant. This achievement completed the

Eco Factory certification of all 24 IRPC's plants.

The management of IRPC industrial facilities have dedicated in developing its ability to gain management excellence in 4 major perspectives as indicated below:

EIZ Data Base Intelligent (in terms of information management perspective) serving as an information center for the facilities that provide an up-to-date information and setting up Enterprise Data Base such as plant's environmental information (for Non-IRPC plants) in which the user will have an easy access to information via the intranet.

EIZ Emergency Integrated (in terms of emergency response perspective) The management of IRPC industrial facilities has sufficient capability to respond and cope with every emergency situation, with well-equipped appliances and personnel as well as the cooperative network in local, national and international levels. In 2017, IRPC had joined force with Thai Army, related government and private agencies in practicing to be well-prepared in case of any natural disasters take place. IRPC also exchanges

practice to adjust the standard and integrate the plans by simulating chemical leakage situation, considered severe enough to coordinate with relevant public agencies and Thai Army for their quick response and assistance. The duration of such practice took place between 21-23 June, 2017.

IRPC also established Safe Fire Project learning center, initiated by the executives with the main purpose to provide training program in terms of fire extinguishing and emergency rescue mission so that employees will possess skills and expertise in effectively responding to emergency situations which in turn help IRPC minimize training costs. Afterwards, many outside customers and interested persons had attended IRPC's training programs in which last year 15 people had participated in the training at IRPC's training center.

EIZ Accountability (in terms of supervision of facilities perspective) IRPC monitored and encouraged cooperation between its facilities and Non-IRPC industrial group by setting up service center and providing advice to relevant persons while offensively communicating information to ensure the stakeholders' confidence of IRPC's business operation.

In 2017, IRPC marked its success in many cooperative activities such as public utilities preparation plan and manufacturing support of Non-IRPC group (Turnaround 2017) and contractors. Coordination and communication in support of Turnaround 2017 had been successfully implemented with satisfactory performance results and complaint handling with CRM as a major tool in responding to Non-IRPC customers' complaint in which every complaint could be solved in a timely manner. In addition, IRPC had communicated with its plants as well as Non-IRPC plants in the area of eco-industry via the company's intranet, e-mail and line group.

EIZ Utility Reliability (in terms of public utilities and public assistance perspective) The area surrounding IRPC's facilities are well-equipped with stable, sufficient public utilities and public assistance that respond to the requirement of various plants within its facilities. In 2017, IRPC had provided additional lights along the street to prevent traffic accident in accordance with its policy of "Goal Zero" which encompasses safety of life and property of every concerned individual in its facilities.



# IRPC's Sustainability Management Structure



IRPC arranges for its organization structure with a “Sustainability Management Office” under the President’s direct supervision. Its role consists in the management of corporate sustainability strategies. IRPC Group’s “Sustainable Business Operation Committee” consists of the Executive Vice President, Sustainability Management Office, as Chairman, supported by top executives from units supervising economic, social, environmental, and corporate governance, jointly formulating sustainability policies and strategies, screening and advising on sustainable business plans for the approval of the Management Committee and the Board of Directors; supervising, monitoring, supporting, and promoting sustainable operation in line with the policies and strategies for a corporation of excellence and sustainability according to the vision of “Leading Integrated Petrochemical Complex in Asia by 2020”

Target of Sustainability Management	Accomplishments
DJSI's leader of Oil and Gas Refining and Marketing Group	<p>Selected membership of the DJSI Emerging Market, Oil and Gas Refining and Marketing Group for the fourth consecutive year, and presented with a 2018 RobecoSAM Silver Class Award</p> <div>   </div>
Disseminate information on sustainability to the public	<p>Sustainability Report Award 2017 (Excellence Level) from the Sustainability Report Award announcement, a cooperative project of CSR Club, Thai Listed Companies Association, SEC, and Thaipat Institute with the award level being more developed than that of the previous year</p>
Becoming an Eco-Industrial Zone	<p>IRPC's 24 plants were certified Eco-Factories by the Industrial Environmental Institute, Federation of Thai Industries</p>
Raising awareness that has impact on sustainable operation behavior	<ul style="list-style-type: none"> <li>Foster desirable behavior (IRPC DNA)</li> <li>Forge knowledge and understanding of sustainability management for target employees and mid-level executives</li> </ul>
Business Shift with Digital Mindset	<ul style="list-style-type: none"> <li>Strategies of Power of Digital</li> <li>Operation via digital system</li> </ul>





Co-Creation

Multi-level  
Engagement

Deep Engagement

## Stakeholders' Engagement

IRPC recognizes stakeholders' increased expectations of its role in business operations to move toward the future with security and sustainability. To this end, between October 2016–October 2017, IRPC arranged to receive opinions from five groups of stakeholders, namely employees, government agencies, community leaders, business partners, and customers through in-depth interviews in order to understand perspectives, expectations, and foster good relationship with stakeholders whose role is crucial to IRPC's success.

Opinions received from all dimensions and true understanding of stakeholders' perspectives will be beneficial in terms of information for Materiality Assessment in order to formulate IRPC's strategies and modify them to meet the ever-changing environment.

IRPC received useful comments from stakeholders. For example, the development of innovation was

crucial to its future business operations, as well as product development, and business expansion to new markets. IRPC's Educational Projects contributed to the robust development of communities and supported the public sector in mobilizing the country. IRPC's communication consisted of strategies and guidelines for sustainable development. Value was placed on human resource development. Confidence was created that IRPC's processes constantly reduced environmental impacts. Management of land use in the industrial zone was efficient. For the e-bidding, there should be assessment covering environmental, social, corporate governance dimensions, among others.

## SD Academy Project

IRPC has formulated an HR development plan to provide concept framework of sustainability management to IRPC's employees. In 2016, the Sustainability



### 1. “Formulate idea framework to achieve sustainability”

How does CSR make IRPC sustainable?  
New trend of sustainable investment that listed companies must pay attention to.



### 2. “Plan life to achieve sustainable business”

Do you know that for the Company to operate sustainable business, all functions must take part and complement one another in the formulation of sustainable strategies?



### 3. “Who are they? “Stakeholders” Who will win? Who will lose?”

How do acquaintances, good relationship, and cooperation with stakeholders play important roles in IRPC's business growth and sustainability?



### 4. “What is it to enhance IRPC's growth?”

How to design CSR to tackle the needs of stakeholders and foster sustainability for IRPC and expand the opportunity of success for IRPC's business



### 5. “Eliminate risk and prioritize issues”

Learn risk management and identify critical issues related to IRPC's sustainability, including management and prioritization



### 6. “Answer society's questions with SROI”

How to pinpoint actual key success indicators of the project that we operate and participate in the analysis of returns on investment

Management Office started to provide such knowledge to the management from vice presidents or equivalent upward, continuing on to section and department chiefs in 2017 through the SD Academy Project, a workshop on sustainability consisting of six courses. The objectives of the project were as follows:

1. First-line to mid-level executives and interested persons acquire knowledge and understanding of the importance of CSR and sustainability development, formulation of sustainable strategies, importance of stakeholders in IRPC's businesses, design of activities/ procedures of network of cooperation on

sustainability development, assessment of the importance of risks, prioritization of issues, and understanding of the principle of Social Return on Investment (SROI)

2. First-line to mid-level executives and interested persons integrate knowledge on the responsibilities toward communities, society, and the environment, as well as sustainability development to IRPC's business management

3. First-line to mid-level executives are acquainted with their supporting roles and duties to drive IRPC toward a sustainable corporation.



# Corporate Governance Report of Thai Listed Companies (CGR) 2017

No.	Criteria	Information Sources
Rights of Shareholders		
A1	Does the Company offer other ownership rights beyond voting?  <b>IRPC: Yes. The rights to propose meeting agenda in advance of the meeting, nominate candidates for directorship, appoint or dismiss director, consider the remuneration of the director and auditor, consider the profit split/ dividend, access sufficient, up-to-date and complete information, and express opinions.</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 60</li> </ul>
A2	Is the decision on all forms of director remuneration approved by the shareholders annually?  <b>IRPC: Yes (The Board considered all forms of directors' remuneration including salary, meeting allowance and bonuses for approval of shareholders meeting).</b>	<p>Minutes of the Annual General Meeting of Shareholders (AGM) specifies:</p> <ul style="list-style-type: none"> <li>● No other benefits</li> <li>○ Other benefits (please specify .....)</li> <li>● Minutes of the 2017 AGM page 19-21</li> <li>● Annual Report 2017 page 98</li> </ul>
A3	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?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>○ Only the total remuneration amount for the entire Board was disclosed</li> <li>● 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.</li> <li>● Notice of the 2017 AGM page 5-8</li> <li>● Minutes of the 2017 AGM page 19-21</li> </ul>
A4	Does the Company allow shareholders to elect Board members individually?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● The voting results of individual director were disclosed</li> <li>○ The voting results of the entire Board were disclosed</li> <li>● Minutes of the 2017 AGM page 63</li> <li>● Annual Report 2017 page</li> </ul>
A5	Does the Company disclose in the minutes that it has appointed scrutineers/ inspectors to count and/ or validate the votes at the AGM?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>○ No    ○ Observer    ○ Witness</li> <li>● Scrutineers    ○ Other (please specify).....</li> <li>● Minutes of the 2017 AGM page 2</li> <li>● Annual Report 2017 page 63</li> </ul>
A6	Is there any opportunity provided to shareholders to propose agenda items, or submit questions before the AGM?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● The rights to: propose meeting agenda in advance of the AGM</li> <li>● The rights to submit questions on corporate issues in advance of the AGM</li> <li>● SET Website-Please specify the web link to the mentioned information <a href="https://www.set.or.th/set/newsdetails.do?newsId=14742422249221&amp;language=th&amp;country=TH">https://www.set.or.th/set/newsdetails.do?newsId=14742422249221&amp;language=th&amp;country=TH</a></li> <li>● Company Website-Please specify the web link to the mentioned information <a href="https://irpc.listedcompany.com/newsroom/190920161736090249T.pdf">https://irpc.listedcompany.com/newsroom/190920161736090249T.pdf</a></li> <li>● Annual Report 2017 page 60</li> </ul>
A7	Does the Company publicly disclose a policy to encourage and facilitate the Company's shareholders, as well as institutional investors, to attend the AGM?  <b>IRPC: Yes</b>	<p>Annual Report 2017 page 62</p> <ul style="list-style-type: none"> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/ir_home_th.php">http://www.irpc.co.th/th/ir_home_th.php</a></li> </ul>

No.	Criteria	Information Sources
<b>Quality of the notice to call annual general meeting of shareholders (AGM)</b>		
A8	Does the Company clearly separate the meeting agenda and each resolution in the AGM deals with only one item? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>The Board's resolutions were disclosed on SET Website</li> <li>Notice of the 2017 AGM page 1-10</li> <li>Annual Report 2017 page 61</li> </ul>
A9	On appointment of directors, are the shareholders provided with the candidate's name and profile? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>1. Name-surname</li> <li>2. Age</li> <li>3. Education/ work experiences</li> <li>4. Number of Board positions in listed and non-listed companies—showing in separate list</li> <li>5. Nomination criteria and process</li> <li>6. Types of directors proposed for approval, i.e. director or independent director.</li> <li>7. For returning director, Information on Board meeting attendance in the past year</li> <li>8. For returning director, DD/MM/YYYY of first appointment</li> <li>Notice of the 2017 AGM page 4-6/ 16-27</li> <li>Annual Report 2017 page 62</li> </ul>
A10	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? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>Name and firm of the auditor</li> <li>The auditor's experience, ability and independence</li> <li>Auditor's fees</li> <li>Notice of the 2017 AGM page 8-9</li> <li>Annual Report 2017 page 62</li> </ul>
A11	On dividend payment, are company's dividend policy, dividend amount, and explanation and information disclosed to support shareholders' consideration? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>Dividend policy</li> <li>Dividend payment <input type="radio"/> No dividend payment</li> <li>Supporting explanation and information</li> <li><input type="radio"/> Accumulated loss</li> <li>Dividend amount proposed</li> <li>Other (please specify) (reason/ tax credit restrictions)</li> <li>Notice of the 2017 AGM page 2-3</li> <li>Annual Report 2017 page 61</li> </ul>
A12	Does the notice of the meeting specify the objectives and reason for each agenda item proposed? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>Notice of the 2017 AGM page 2-10</li> <li>Annual Report 2017 page 61</li> </ul>
A13	Does the notice of the meeting include director's comments and opinion for each agenda item? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>Notice of the 2017 AGM page 2-10</li> <li>Annual Report 2017 page 61</li> </ul>
<b>Quality of the minutes of the annual general meeting of shareholders</b>		
A14	Does the voting method and vote counting system declared and recorded? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>The voting method and vote counting system were declared before the meeting began.</li> <li>Voting ballot was used</li> <li>Minutes of the 2017 AGM page 3</li> <li>Annual Report 2017 page 63</li> </ul>
A15	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? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>Shareholders had the opportunity to ask questions/ raise issues, but none did.</li> <li>Questions and answers were recorded</li> <li>Minutes of the 2017 AGM page 11-26</li> <li>Annual Report 2017 page 63</li> </ul>
A16	Do the AGM minutes clearly record the meeting resolution with voting results for each agenda item, including "for", "against" and "abstain" vote tallies? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>The meeting resolutions were clearly recorded.</li> <li>The resolution specifies "for", "against" and "abstain" tallies and void ballot of each agenda were recorded.</li> <li>Minutes of the 2017 AGM page 1-27</li> <li>Annual Report 2017 page 64</li> </ul>

No.	Criteria	Information Sources
A17	Is a name list of Board members attending the AGM disclosed in the AGM minutes? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>Minutes of the 2017 AGM page 1</li> <li>Annual Report 2017 page 64</li> </ul>
A18	Does the Company make publicly available by the next working day the results of the votes taken during the AGM for all resolutions? <b>IRPC: The results were make public on the same day after the meeting.</b>	<ul style="list-style-type: none"> <li>SET Website-Please specify the web link to the mentioned information <a href="http://www.set.or.th/set/newsdetails.do?newsId=14912630028001&amp;language=th&amp;country=TH">http://www.set.or.th/set/newsdetails.do?newsId=14912630028001&amp;language=th&amp;country=TH</a></li> <li>Company Website-Please specify the web link to the mentioned information <a href="https://irpc.listedcompany.com/newsroom/040420171319220644T.pdf">https://irpc.listedcompany.com/newsroom/040420171319220644T.pdf</a></li> <li>Annual Report 2017 page 64</li> </ul>
A19	Did the Chairman of the Board attend the AGM? <b>IRPC: Yes. (Mr. Tevin Vongvanich)</b>	<ul style="list-style-type: none"> <li>Minutes of the 2017 AGM page 1</li> <li>Annual Report 2017 page 63</li> </ul>
A20	Did the CEO/ President attend the AGM? <b>IRPC: Yes. (Mr. Sukrit Surabotsopon)</b>	<ul style="list-style-type: none"> <li>Minutes of the 2017 AGM page 1</li> <li>Annual Report 2017 page 63</li> </ul>
A21	Did the Chairman of the Audit Committee attend the AGM? <b>IRPC: Yes. (Mr. Songpope Polachan)</b>	<ul style="list-style-type: none"> <li>Minutes of the 2017 AGM page 1</li> <li>Annual Report 2017 page 63</li> </ul>
A22	Did the Chairman of the Remuneration Committee attend the AGM? <b>IRPC: Yes. (Mr. Woothisarn Tanchai)</b>	<ul style="list-style-type: none"> <li>Minutes of the 2017 AGM page 1</li> <li>Annual Report 2017 page 63</li> </ul>
A23	Did the Chairman of the Nomination Committee attend the AGM? <b>IRPC: Yes. (Mr. Woothisarn Tanchai)</b>	<ul style="list-style-type: none"> <li>Minutes of the 2017 AGM page 1</li> <li>Annual Report 2017 page 63</li> </ul>
A24	Did the Company organize the most recent AGM in an easily accessible location? <b>IRPC: Yes. (Mr. Woothisarn Tanchai)</b>	<ul style="list-style-type: none"> <li>Notice of the 2017 AGM page 14-15</li> <li>Minutes of the 2017 AGM page 1</li> <li>Annual Report 2017 page 62</li> </ul>
<b>Does the Company's shareholder structure indicate any mechanism on anti-takeover defenses?</b>		
A25	Is cross shareholding apparent? <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>Annual Report 2017 page 116</li> </ul>
A26	Is pyramid holding apparent? <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>Annual Report 2017 page 116</li> </ul>
A27	Do Board members hold more than 25% of the outstanding shares? (Bonus) <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>Annual Report 2017 page 65</li> <li>Form 56-1</li> </ul>
A28	What is the proportion of outstanding shares that are considered "free float"? <b>IRPC: 51.90 (as of March 2, 2017)</b>	<p>The proportion of free float as of 2018 XM book closing date:</p> <ul style="list-style-type: none"> <li><input checked="" type="radio"/> Equal to or over 40%   <input type="radio"/> Between 15%-39%</li> <li><input type="radio"/> Less than 15%</li> <li>SET Website-Please specify the web link to the mentioned information <a href="https://www.set.or.th/set/companyholder.do?symbol=IRPC&amp;ssoPagId=6&amp;language=th&amp;country=TH">https://www.set.or.th/set/companyholder.do?symbol=IRPC&amp;ssoPagId=6&amp;language=th&amp;country=TH</a></li> </ul>

No.	Criteria	Information Sources
A29	<p>Were there additional AGM/ EGM agenda item(s) for shareholders' approval that were not included in the notice to call the meeting? (Penalty)</p> <p><b>IRPC: No additional item apart from those specified was included in the notice to call the 2017 AGM.</b></p>	<p><input type="radio"/> Additional AGM/ EGM agenda items</p> <p><input checked="" type="radio"/> No additional AGM/ EGM agenda item</p> <p><input checked="" type="radio"/> Notice of the 2017 AGM page 1-10 consists of 7 agenda items:</p> <ol style="list-style-type: none"> <li>1) 2 items for acknowledgment</li> <li>2) 4 items for consideration</li> <li>3) 1 item for other matters (if any)</li> </ol> <p><input checked="" type="radio"/> Minutes of the 2017 AGM page 1-27</p> <p><input checked="" type="radio"/> Annual Report 2017 page 64</p>
A30	<p>Did the Company fail or neglect to offer equal treatment for share repurchases to all shareholders? (Penalty)</p> <p><b>IRPC: No share repurchase</b></p>	<p><input checked="" type="radio"/> Annual Report 2017 page 65</p>
A31	<p>Is there evidence of barriers that prevent shareholders from communicating or consulting with other shareholders? (Penalty)</p> <p><b>IRPC: No</b></p>	<p><input checked="" type="radio"/> Annual Report 2017 page 70-71</p>
A32	<p>Did the Company fail to disclose the existence of shareholders agreement of essential effect to other shareholders? (Penalty)</p> <p><b>IRPC: No</b></p>	<p><input checked="" type="radio"/> Annual Report 2017 page 70-71</p>
<b>Equitable Treatment of Shareholders</b>		
B1	<p>Does the Company offer one-share, one-vote?</p> <p><b>IRPC: Yes</b></p>	<p><input checked="" type="radio"/> Annual Report 2017 page 64</p> <p><input checked="" type="radio"/> Articles of Association-Article 34</p>
B2	<p>Where the Company has more than one class of shares, does the Company publicize the voting rights attached to each class of shares?</p> <p><b>IRPC: No</b></p>	<p><input checked="" type="radio"/> Common share only <input type="radio"/> Others (please specify) .....</p> <p><input checked="" type="radio"/> Annual Report 2017 page 64</p>
B3	<p>Does the Company have any mechanism/ channel to allow minority shareholders to influence the nomination and appointment of director?</p> <p><b>IRPC: Yes</b></p>	<p><input checked="" type="radio"/> Shareholders have the channel to nominate director in advance.</p> <p><input type="radio"/> Cumulative voting was used</p> <p><input checked="" type="radio"/> SET Website-Please specify the web link to the mentioned information</p> <p><input checked="" type="radio"/> Company Website-Please specify the web link to the mentioned information</p> <p><input checked="" type="radio"/> Annual Report 2017 page 64</p>
B4	<p>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?</p> <p><b>IRPC: Yes</b></p>	<p><input checked="" type="radio"/> Annual Report 2017 page 64</p> <p><input checked="" type="radio"/> Form 56-1</p> <p><input checked="" type="radio"/> CG Handbook page 72</p>
B5	<p>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?</p> <p><b>IRPC: Yes</b></p>	<p><input checked="" type="radio"/> Annual Report 2017 page 70, 142</p>
B6	<p>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 arms' length?</p> <p><b>IRPC: Yes</b></p>	<p><input checked="" type="radio"/> Annual Report 2017 page 139-142</p> <p><input checked="" type="radio"/> Form 56-1</p>

No.	Criteria	Information Sources
B7	Does the Company have an economic- grouping structure with business interconnections which may lead to possible conflicts of interest?  <b>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.</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 139-142</li> </ul>
B8	Does the Company include in the notice of the AGM the proxy form to facilitate voting via proxy?  <b>IRPC: Yes</b>	What kind of Proxy Forms did the Company send to the shareholders/ <ul style="list-style-type: none"> <li>● Proxy Form A ● Proxy Form B ○ Proxy Form C ○ None</li> <li>● Notice of the 2017 AGM 11-13</li> <li>● Annual Report 2017 page 65</li> </ul>
B9	Does the notice to shareholders clearly specify the documents required to give proxy?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Notice of the 2017 AGM page 11-13</li> <li>● Annual Report 2017 page 65</li> </ul>
B10	Is there any requirement to make it harder for a proxy appointment?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Notice of the 2017 AGM page 11-13</li> <li>● Annual Report 2017 page 65</li> </ul>
B11	How many days in advance did the Company send out (by mail) the notice of general shareholder meetings?  <b>IRPC: 21 days</b>	<ul style="list-style-type: none"> <li>● Mailed on March 31, 2017</li> <li>● Date of AGM: April 4, 2017</li> <li>● The notice was mailed 21 days in advance of AGM</li> <li>● Annual Report 2017 page 61</li> </ul>
B12	Does the Company post the notice to call the shareholders' meeting at least 30 days in advance on its website?  <b>IRPC: 30 days</b>	<ul style="list-style-type: none"> <li>● SET Website for corporate news/securities - Please specify the web link to the mentioned information <a href="http://www.set.or.th/set/newsdetails.do?newsId=14567838602781&amp;language=th&amp;country=TH">http://www.set.or.th/set/newsdetails.do?newsId=14567838602781&amp;language=th&amp;country=TH</a></li> <li>● Date the notice was posted on IRPC's website: March 3, 2017</li> <li>● Date of AGM: April 4, 2017</li> <li>● The notice was posted on website: 30 days in advance of AGM</li> <li>● Annual Report 2017 page 61</li> </ul>
B13	Does the Company use cumulative voting in the election of Board members? (Bonus)  <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● one-share one-vote</li> <li>○ Cumulative Voting</li> <li>● Minutes of the 2017 AGM page 3</li> </ul>
B14	Does the Company also send out the English translation of the notice of shareholders' meetings and supporting documents to foreign shareholders? (Bonus)  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Notice of the 2017 AGM</li> <li>● Company Website-Please specify the web link to the mentioned information (Thai) (English)</li> <li>● Annual Report 2017 page 65</li> </ul>
B15	Are there any connected transactions that can be classified as financial assistance to non-subsidiary-companies? (Penalty)  <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 65</li> </ul>
B16	Have there been any cases of insider trading involving company directors and/ or management in the past year? (Penalty)  <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 64-65</li> </ul>
B17	Has there been any violation/ non-compliance case regarding connected transaction in the past year? (Penalty)  <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 142</li> </ul>



No.	Criteria	Information Sources
B18	Has there been any violation/ non-compliance case regarding the buy and sale of company's asset? (Penalty) <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 142</li> </ul>
B19	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 shares? (Bonus) <b>IRPC: Directors are required to notify the Board upon the trading</b>	<ul style="list-style-type: none"> <li>● CG Handbook page 77</li> <li>● Code of Conduct page 15</li> <li>● Annual Report 2017 page 64</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/cg_control_manage.php">http://www.irpc.co.th/th/cg_control_manage.php</a></li> </ul>
The Role of Stakeholders		
C1	Does the Company have a separate corporate social responsibility (CSR) report? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● CSR report was prepared</li> <li>● CSR report was prepared in compliance with GRI framework with GRI Index disclosed</li> <li>● Form 56-1</li> <li>● Annual Report 2017 page 186</li> <li>● Sustainability Report 2017</li> </ul>
C2	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? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● A policy and guidelines on the workplace safety were set.</li> <li>○ The rates of accidental injury, lost days/ absenteeism, and occupational illness were disclosed.</li> <li>● Annual Report 2017 page 205</li> <li>● Form 56-1</li> <li>● CG Handbook page 81</li> <li>● Code of Conduct page 7</li> <li>● Sustainability Report 2017</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/goodgovernance.php">http://www.irpc.co.th/th/goodgovernance.php</a></li> </ul>
C3	Does the Board define a policy for the employee's compensation and welfare benefits? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 69</li> <li>● Form 56-1</li> <li>● CG Handbook page 61</li> <li>● Code of Conduct page 4</li> <li>● Sustainability Report 2017</li> <li>● Company Website - Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/cg_stakeholders.php">http://www.irpc.co.th/th/cg_stakeholders.php</a></li> </ul>
C4	Does the Board provide a provident fund for the employees? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 69</li> <li>○ Financial Statement and Footnote</li> </ul>
C5	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? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● A policy and procedures for the employees' development was set.</li> <li>● The average training hours per year per employees was disclosed.</li> <li>● Annual Report 2017 page 68, 167-170</li> <li>● Form 56-1</li> <li>● CG Handbook page 69</li> <li>● Code of Conduct page 4</li> <li>● Sustainability Report 2017</li> </ul>
C6	Does the Board formulate a policy preventing human rights violations? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 78</li> <li>● Form 56-1</li> <li>● CG Handbook page 67</li> <li>● Code of Conduct page 4</li> <li>● Sustainability Report 2017</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/corporate_human_rights.php">http://www.irpc.co.th/th/corporate_human_rights.php</a></li> </ul>

No.	Criteria	Information Sources
C7	Does the Board define a policy and procedures for the treatment of the customers?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 66</li> <li>● Form 56-1</li> <li>● CG Hanbook page 59</li> <li>● Code of Conduct page 24</li> <li>● Sustainability Report 2017</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/cg_stakeholders.php">http://www.irpc.co.th/th/cg_stakeholders.php</a></li> </ul>
C8	Does the Board have a policy and procedures for the treatment of the business competitors?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 67</li> <li>● Form 56-1</li> <li>● CG Hanbook page 60</li> <li>● Code of Conduct page 27</li> <li>● Sustainability Report 2017</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/cg_stakeholders.php">http://www.irpc.co.th/th/cg_stakeholders.php</a></li> </ul>
C9	Does the Board define a policy and procedures for the treatment of the business partners, particularly on business partner selection?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● The Company has a policy and procedures for the treatment of the business partners.</li> <li>● Procedures for partner selection are disclosed in details.</li> <li>● Annual Report 2017 page 67</li> <li>● Form 56-1</li> <li>● CG Hanbook page 60</li> <li>● Code of Conduct page 27</li> <li>● Sustainability Report 2017</li> <li>● Company Website - Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/CG/policy/Procurement-Manual.pdf">http://www.irpc.co.th/th/pdf/CG/policy/Procurement-Manual.pdf</a></li> </ul>
C10	Does the Board formulate a policy and procedures for the treatment of the creditors, particularly on guarantee / collateral conditions, capital management, and default?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● The Company has a policy and procedures for the treatment of the creditors which include:</li> <li>● Guarantee terms and conditions ○ Capital management</li> <li>● Default</li> <li>● Annual Report 2017 page 67</li> <li>● Form 56-1</li> <li>● CG Hanbook page 60</li> <li>● Code of Conduct page 27</li> <li>● Sustainability Report 2017</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/cg_stakeholders.php">http://www.irpc.co.th/th/cg_stakeholders.php</a></li> </ul>
C11	Does the Board set a policy preventing violations of the software copyright and intellectual property?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 69</li> <li>● Form 56-1</li> <li>● CG Hanbook page 79</li> <li>● Code of Conduct page 21</li> <li>● Sustainability Report 2017</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf">http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf</a></li> </ul>
C12	Does the Board have a policy against corruption and a preventive measure for commercial bribery?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 77</li> <li>● Form 56-1</li> <li>● CG Hanbook page 36-46</li> <li>● Code of Conduct page 9</li> <li>● Sustainability Report 2017</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/CG/policy/2017-Bribery-Policy_TH.pdf">http://www.irpc.co.th/th/pdf/CG/policy/2017-Bribery-Policy_TH.pdf</a></li> </ul>

No.	Criteria	Information Sources
C13	Does the Company have a corruption risk assessment procedure in place to determine the extent of the risk of corruption to the business? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 77</li> <li>● Form 56-1</li> <li>● CG Hanbook page 36-46</li> <li>● Code of Conduct page 9</li> <li>● Sustainability Report 2017</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf">http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf</a></li> </ul>
C14	Does the Company define internal compliance and control guidelines to prevent and monitor corruption risk? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 77</li> <li>● Form 56-1</li> <li>● CG Hanbook page 36-46</li> <li>● Code of Conduct page 9</li> <li>● Sustainability Report 2017</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf">http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf</a></li> </ul>
C15	Does the Company have the procedures to monitor and enforce the anti-corruption policy? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 77</li> <li>● Form 56-1</li> <li>● CG Hanbook page 36-46</li> <li>● Code of Conduct page 9</li> <li>● Sustainability Report 2017</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf">http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf</a></li> </ul>
C16	Has the Company been educating its employees on its anti-corruption policy and procedures? <b>IRPC: Yes (IRPC held its own training and sent its employees to attend training arranged by other organizations, such as IOD)</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 77</li> <li>● Form 56-1</li> <li>● CG Hanbook page 36-46</li> <li>● Code of Conduct page 4</li> <li>● Sustainability Report 2017</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf">http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf</a></li> </ul>
C17	Does the Board have a policy for the community services? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 69</li> <li>● Form 56-1</li> <li>● CG Hanbook page 62</li> <li>● Code of Conduct page 7</li> <li>● Sustainability Report 2017</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/sustainable.php">http://www.irpc.co.th/th/sustainable.php</a></li> </ul>
C18	Does the Board organize social activities or take part in the community development program? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 69</li> <li>● Form 56-1</li> <li>● CG Hanbook page 62</li> <li>● Code of Conduct page 7</li> <li>● Sustainability Report 2017</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/sustainable.php">http://www.irpc.co.th/th/sustainable.php</a></li> </ul>

No.	Criteria	Information Sources
C19	Does the Board have a business operations policy conforming to environmental standards?  <b>IRPC: Yes</b>	<input type="radio"/> ISO14000, 14001 <input type="radio"/> Green Label <input checked="" type="radio"/> Other (please specify) ..... <input checked="" type="radio"/> Annual Report 2017 page 70 <input checked="" type="radio"/> Form 56-1 <input checked="" type="radio"/> CG Hanbook page 81 <input checked="" type="radio"/> Code of Conduct page 7 <input checked="" type="radio"/> Sustainability Report 2017 <input checked="" type="radio"/> Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/sustainable.php">http://www.irpc.co.th/th/sustainable.php</a>
C20	Does the Board encourage the utilization of the resources efficiently?  <b>IRPC: Yes</b>	<input checked="" type="radio"/> Annual Report 2017 page 70 <input checked="" type="radio"/> Form 56-1 <input checked="" type="radio"/> CG Hanbook page 83 <input checked="" type="radio"/> Code of Conduct page 7 <input checked="" type="radio"/> Sustainability Report 2017 <input checked="" type="radio"/> Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/cg_control.php">http://www.irpc.co.th/th/cg_control.php</a>
C21	Does the Board have a training program to educate the employees about the environmental issues?  <b>IRPC: Yes</b>	<input checked="" type="radio"/> Annual Report 2017 page 206 <input checked="" type="radio"/> Form 56-1 <input checked="" type="radio"/> CG Hanbook page 69 <input checked="" type="radio"/> Code of Conduct page 7 <input checked="" type="radio"/> Sustainability Report 2017 <input checked="" type="radio"/> Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/sustainable.php">http://www.irpc.co.th/th/sustainable.php</a>
C22	Does the Board provide direct channel for stakeholders to communicate/ complaint any concerns to the Board?  <b>IRPC: Yes</b>	<input checked="" type="radio"/> Annual Report 2017 page 77 <input checked="" type="radio"/> Form 56-1 <input checked="" type="radio"/> CG Hanbook page 45 <input checked="" type="radio"/> Code of Conduct page 18 <input checked="" type="radio"/> Sustainability Report 2017 <input checked="" type="radio"/> Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf">http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf</a>
C23	Does the Company have procedures for complaints by employees concerning illegal or unethical behavior?  <b>IRPC: Yes</b>	<input checked="" type="radio"/> Annual Report 2017 page 78 <input checked="" type="radio"/> Form 56-1 <input checked="" type="radio"/> CG Hanbook page 45 <input checked="" type="radio"/> Sustainability Report 2017 <input checked="" type="radio"/> Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf">http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf</a>
C24	Does the company have a policy or procedures to protect an employee/ person who reveals illegal/ unethical behavior from retaliation?  <b>IRPC: Yes</b>	<input checked="" type="radio"/> Annual Report 2017 page 77-78 <input checked="" type="radio"/> Form 56-1 <input checked="" type="radio"/> CG Hanbook page 46 <input checked="" type="radio"/> Sustainability Report 2017 <input checked="" type="radio"/> Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf">http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf</a>
C25	Does the Company provide clear contact details which stakeholders can use to voice their concerns and/ or complaints for possible violation of their rights?  <b>IRPC: Yes</b>	<input checked="" type="radio"/> Annual Report 2017 page 77 <input checked="" type="radio"/> Form 56-1 <input checked="" type="radio"/> CG Hanbook page 45 <input checked="" type="radio"/> Sustainability Report 2017 <input checked="" type="radio"/> Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf">http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf</a>

No.	Criteria	Information Sources
C26	Does the Company have a reward/ compensation policy that accounts for the performance of the company both in short-term and long-term financial measures? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>○ Balanced Scorecard ○ ESOP ○ EJIP ○ Other (please specify)</li> <li>● Annual Report 2017 page 69</li> <li>● Form 56-1</li> <li>● CG Handbook page 70</li> <li>● Code of Conduct page 4</li> <li>● Sustainability Report 2017</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf">http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf</a></li> </ul>
C27	Have there been any violations of any laws pertaining to labor, employment, consumer, commercial competition or environmental issues? (Penalty) <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 107-109</li> </ul>
C28	Has the Company faced any sanctions by the regulators for failure to make an announcement within the requisite time period for material events? (Penalty) <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 107</li> </ul>
C29	Does the Company prepare an integrated report? (Bonus) <b>IRPC: Yes (In 2015, 2016, and 2017)</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 70</li> <li>● Sustainability Report (CSR Report) <a href="http://www.irpc.co.th/th/pdf/library/13/AW_IRPC%20IR%202015_TH%20for%20IRPC_HI.pdf">http://www.irpc.co.th/th/pdf/library/13/AW_IRPC%20IR%202015_TH%20for%20IRPC_HI.pdf</a></li> </ul>
<b>Disclosure and Transparency</b>		
<b>Does the Company have a transparent shareholder structure?</b>		
D1	Is there a breakdown of the shareholding structure? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 113, 116</li> <li>● Form 56-1</li> <li>● SET Website-Please specify the web link to the mentioned information <a href="http://www.set.or.th/set/companyholder.do?symbol=IRPC&amp;ssoP_ageld=6&amp;language=th&amp;country=TH">http://www.set.or.th/set/companyholder.do?symbol=IRPC&amp;ssoP_ageld=6&amp;language=th&amp;country=TH</a></li> </ul>
D2	Is it easy to identify beneficial shareholder? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 113, 116</li> <li>● Form 56-1</li> <li>● SET Website-Please specify the web link to the mentioned information <a href="http://www.set.or.th/set/companyholder.do?symbol=IRPC&amp;ssoP_ageld=6&amp;language=th&amp;country=TH">http://www.set.or.th/set/companyholder.do?symbol=IRPC&amp;ssoP_ageld=6&amp;language=th&amp;country=TH</a></li> </ul>
D3	Does the Company disclose the direct and indirect shareholdings of directors? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>○ The Company disclose only direct or unseparated direct and indirect shareholdings of directors</li> <li>● The Company disclose separated direct and indirect shareholdings of directors</li> <li>● Annual Report 2017 page 104-105</li> <li>● Form 56-1</li> </ul>
D4	Does the Company disclose the direct and indirect shareholdings of senior management? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>○ The Company disclose only direct or unseparated direct and indirect shareholdings of directors</li> <li>● The Company disclose separated direct and indirect shareholdings of directors</li> <li>● Annual Report 2017 page 106-207</li> <li>● Form 56-1</li> </ul>



No.	Criteria	Information Sources
Please assess the quality of the annual report in the following D.05-D.21:		
D5	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? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● The SET's code of corporate governance is fully complied with.</li> <li>○ The reasons for each identified non-compliance with SET's code of corporate governance were disclosed.</li> <li>● Annual Report 2017 page 56-78</li> </ul>
D6	Corporate objectives/ Long Term Goal <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 18</li> </ul>
D7	Financial status and performance <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 4-5, 146-163, 171-184</li> </ul>
D8	Non-financial performance indicators, for example, market share, customer's satisfaction level, etc. <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>○ Percentage of market share</li> <li>○ Percentage of customer's satisfaction</li> <li>● Annual Report 2017 page 122-127, 128-137</li> </ul>
D9	Business operations and competitive position <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 117-127</li> </ul>
D10	Corporate group structure (if any) <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 116</li> </ul>
D11	Key risks in business operation <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 47-49</li> </ul>
D12	Dividend policy <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 76</li> </ul>
D13	Details of whistle-blowing policy <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 77</li> </ul>
D14	Board member background <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 22-33</li> <li>● Name-Surname    ● Age    ● Position</li> <li>● Educational background    ● Experience</li> <li>● Shareholding percentage</li> <li>● Date/ month/ year of appointment as director</li> <li>● Directorship in other listed company, listed company and other company must be clearly separated</li> </ul>
D15	Identification of independent directors <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 20-33</li> </ul>
D16	Basis of the Board remuneration <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 98</li> </ul>
D17	Basis of the key executives' remuneration <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 100-101</li> </ul>
D18	Disclosure of individual directors' remuneration <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 99-100</li> </ul>
D19	Number of Board of directors' meetings held during the year <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 94</li> </ul>
D20	Board meeting attendance of individual directors <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 94</li> </ul>
D21	Training and continuing education programs attended by each director in the last year. <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>○ None participated in any development or training in the past year.</li> <li>● Information on the development or training of each director in the past year was disclosed.</li> <li>● Annual Report 2017 page 22-33, 74-75</li> </ul>

No.	Criteria	Information Sources
D22	Does the Company fully disclose details of its connected transactions? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>○ Financial Statement and Footnote page 139-142</li> </ul>
D23	Does the Company have a specific policy requiring directors to report their shareholding and transactions of company shares to the Board of directors? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 64</li> <li>● Form 56-1</li> <li>● CG Hanbook page 77</li> <li>● Code of Conduct page 12</li> </ul>
D24	Does the Company disclose in the annual report the change in shareholding of the directors and the executives, i.e. share held at the beginning and end of the year, and trading during the year? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 64</li> </ul>
D25	Does the Company have a policy requiring directors to report possible conflicts of interest? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 64-65</li> <li>● Form 56-1</li> <li>● CG Hanbook page 27</li> <li>● Code of Conduct page 12</li> </ul>
D26	Does the Company disclose its policy covering the review and approval of material/ significant connected transactions by the Board of directors? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 65, 139-142</li> <li>● Form 56-1</li> <li>● CG Hanbook page 27</li> <li>● Code of Conduct page 12</li> </ul>
D27	Does the Company perform an annual audit using independent and reputable auditors? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 76</li> <li>● Auditor: Deloitte Touche Tohmatsu Jaiyos Audit Co., Ltd.</li> </ul>
D28	Are audit fees disclosed in the annual report? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 76</li> <li>● Audit fees: 4,000,000 Baht (four million Baht only)</li> </ul>
D29	Are the non-audit fees disclosed in the annual report? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Non-audit fees : 9,008,830 Baht (nine million eight thousand eight hundred and thirty baht)</li> </ul>
D30	Does the auditor endorse the Company's financial statements with conditions? <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 52-53</li> <li>● Financial statement</li> </ul>
D31	Is the annual report released within 120 days from the financial year end? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Release date of Annual Report 2017</li> <li>● SET Website</li> <li>● Company Website</li> <li>● Annual Report 2017 page 71</li> </ul>
<b>Does the Company offer multiple channels of access to information? Multiple channels include (32)–(36):</b>		
D32	Annual report <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017</li> </ul>
D33	Quarterly reports <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● SET Website-Please specify the web link to the mentioned information <a href="http://www.set.or.th/set/companyprofile.do?symbol=IRPC&amp;ssoPagId=4&amp;language=th&amp;country=TH">http://www.set.or.th/set/companyprofile.do?symbol=IRPC&amp;ssoPagId=4&amp;language=th&amp;country=TH</a></li> <li>● Company Website- Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/ir_home_th.php">http://www.irpc.co.th/th/ir_home_th.php</a></li> <li>● Annual Report 2017 page 52-53</li> </ul>
D34	Company website <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/index.php?intro=1">http://www.irpc.co.th/th/index.php?intro=1</a></li> </ul>

No.	Criteria	Information Sources
D35	Analyst briefing(s)/ Opportunity Day <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● A total of 4 Analyst Meetings</li> <li>● Attended 4 Opportunity Day events.</li> <li>● Annual Report 2017 page 71</li> <li>● Form 56-1</li> <li>● Company Website Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/ir_home_th.php">http://www.irpc.co.th/th/ir_home_th.php</a></li> </ul>
D36	Press conference(s)/ press briefing(s) on the Company's financial status? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● A total of 7 press conferences on corporate performance were held.</li> <li>● A total of 4 Newsletter on corporate performance were issued.</li> <li>● Annual Report 2017 page 71</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/ir_home_th.php">http://www.irpc.co.th/th/ir_home_th.php</a></li> </ul>
D37	Was the financial report disclosed in an untimely manner during the past year? <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 142</li> </ul>
<b>Does the Company have a website disclosing the following up-to-date information?</b>		
D38	Business operations <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website-Please specify the web link to the information <a href="http://www.irpc.co.th/th/ir_home_th.php">http://www.irpc.co.th/th/ir_home_th.php</a></li> </ul>
D39	Financial statements <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/ir_home_th.php">http://www.irpc.co.th/th/ir_home_th.php</a></li> </ul>
D40	Press releases <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/ir_home_th.php">http://www.irpc.co.th/th/ir_home_th.php</a></li> </ul>
D41	Shareholding structure <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/cg_shareholder.php">http://www.irpc.co.th/th/cg_shareholder.php</a></li> </ul>
D42	Organization structure <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_organiz.php">http://www.irpc.co.th/th/about_organiz.php</a></li> </ul>
D43	Corporate group structure (If any) <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/ir_home_th.php">http://www.irpc.co.th/th/ir_home_th.php</a></li> </ul>
D44	Information on the Board of directors and management <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website-Please specify the web link to the mentioned information The Board: <a href="http://www.irpc.co.th/th/about_Board.php">http://www.irpc.co.th/th/about_Board.php</a> The management: <a href="http://www.irpc.co.th/th/about_management.php">http://www.irpc.co.th/th/about_management.php</a></li> </ul>
D45	Information on the investor relations <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/ir_home_th.php">http://www.irpc.co.th/th/ir_home_th.php</a></li> </ul>
D46	Company's Articles of Association <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/CG/Articles%20of%20Association_280458_TH.pdf">http://www.irpc.co.th/th/pdf/CG/Articles%20of%20Association_280458_TH.pdf</a></li> </ul>
D47	Downloadable annual report <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/ir_home_th.php">http://www.irpc.co.th/th/ir_home_th.php</a></li> </ul>

No.	Criteria	Information Sources
D48	Downloadable notice to call the AGM IRPC: Yes	<ul style="list-style-type: none"> <li>Company Website-Please specify the web link to the mentioned information <a href="http://irpc.listedcompany.com/newsroom/010320161809390811T.pdf">http://irpc.listedcompany.com/newsroom/010320161809390811T.pdf</a></li> </ul>
D49	Downloadable minutes of the AGM IRPC: Yes	<ul style="list-style-type: none"> <li>Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/ir_home_th.php">http://www.irpc.co.th/th/ir_home_th.php</a></li> </ul>
D50	Website in both Thai and English IRPC: Yes	<ul style="list-style-type: none"> <li>Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/ir_home_th.php">http://www.irpc.co.th/th/ir_home_th.php</a></li> </ul>
D51	Does the Company provide contact details for a specific Investor Relations person or unit that is easily accessible to outside investors? IRPC: Yes	<ul style="list-style-type: none"> <li>A specific Investor Relations unit was set up</li> <li>A specific Investor Relations person was appointed</li> <li>Contact channel <input checked="" type="radio"/> Tel. <input checked="" type="radio"/> Email <input checked="" type="radio"/> Fax. <input checked="" type="radio"/> Other (Please specify)</li> <li>Annual Report 2017 page 71</li> <li>Form 56-1</li> <li>Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/ir_home_th.php">http://www.irpc.co.th/th/ir_home_th.php</a></li> </ul>
D52	Was there any record of sanctions by the SEC requiring the company to revise its financial statements during the past year? (Penalty) IRPC: No	
D53	Does the company disclose the details of the CEO compensation? (Bonus) IRPC: Yes	<ul style="list-style-type: none"> <li>Annual Report 2017 page 100-101</li> </ul>
Board Responsibilities		
E1	Does the Board of directors have the Company's own written corporate governance policy? IRPC: Yes	<ul style="list-style-type: none"> <li>Annual Report 2017 page 56-60</li> <li>Form 56-1</li> <li>CG Handbook page 7</li> <li>Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf">http://www.irpc.co.th/th/pdf/library/09/Corporate%20Governance_th.pdf</a></li> </ul>
E2	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 company's website? IRPC: Yes	<ul style="list-style-type: none"> <li>Annual Report 2017 page 56-60</li> <li>Form 56-1</li> <li>CG Handbook page 48</li> <li>Code of Conduct page 2</li> <li>Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/library/09/Code_of_Conduct.pdf">http://www.irpc.co.th/th/pdf/library/09/Code_of_Conduct.pdf</a></li> </ul>
E3	Does the Company disclose that all directors, senior management and employees are required to comply with the code? IRPC: Yes	<ul style="list-style-type: none"> <li>Annual Report 2017 page 56-60</li> <li>Form 56-1</li> <li>CG Handbook page 48</li> <li>Code of Conduct page 3</li> <li>Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/library/09/Code_of_Conduct.pdf">http://www.irpc.co.th/th/pdf/library/09/Code_of_Conduct.pdf</a></li> </ul>
E4	Does the Company disclose how it implements and monitors compliance with the code of ethics or code of business conduct? IRPC: Yes	<ul style="list-style-type: none"> <li>Annual Report 2017 page 56-60</li> <li>Form 56-1</li> <li>CG Handbook page 48</li> <li>Code of Conduct page 2</li> <li>Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/pdf/library/09/Code_of_Conduct.pdf">http://www.irpc.co.th/th/pdf/library/09/Code_of_Conduct.pdf</a></li> </ul>

No.	Criteria	Information Sources
E5	Does the Board of directors have a corporate vision/mission?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 86, 18</li> <li>● Form 56-1</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_vision.php">http://www.irpc.co.th/th/about_vision.php</a></li> </ul>
E6	Has the Board of directors reviewed the vision, mission, and strategy in the last financial year?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 86</li> <li>● Form 56-1</li> </ul>
E7	Does the Board of directors monitor the implementation of the corporate strategy?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 86</li> <li>● Form 56-1</li> <li>● CG Hanbook page 20</li> </ul>
E8	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?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 83</li> <li>● Form 56-1</li> <li>● CG Hanbook page 18</li> </ul>
E9	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)  <b>IRPC: The policy on directorship in listed companies that each director can hold is limited to up to 5</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 83</li> <li>● CG Hanbook page 18</li> </ul>
E10	Does the Board of directors state a policy that addresses the Board positions in other firms held by the Company's CEO/ President?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 83</li> <li>● Form 56-1</li> <li>● CG Hanbook page 21</li> </ul>
E11	Does the Board of directors have a term limit of nine years for independent directors?  <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 83</li> <li>● Form 56-1</li> <li>● CG Hanbook page 18</li> </ul>
E12	Does the Board of directors have a term limit of six years or less for independent directors? (Bonus)  <b>IRPC: The term is limited to up to 9 years</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 83</li> <li>● Form 56-1</li> <li>● CG Hanbook page 18</li> </ul>
E13	Does the Company have any independent directors who have served for more than nine years? (Penalty)  <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● No <input type="radio"/> Yes Number.....director (s)</li> <li>● Annual Report 2017 page 83</li> <li>● Form 56-1</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_Board.php">http://www.irpc.co.th/th/about_Board.php</a></li> </ul>
E14	Did the company fail to disclose the identity of the independent directors? (Penalty)  <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 83, 22, 104-106</li> <li>● Form 56-1</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_Board.php">http://www.irpc.co.th/th/about_Board.php</a></li> </ul>
E15	Is any of the director or senior management a former employee or partner of the current external auditor (in the past 2 years)? (Penalty)  <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● No <input type="radio"/> Yes Number.....director(s)</li> <li>● Annual Report 2017 page 20-46</li> <li>● Form 56-1</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_management.php">http://www.irpc.co.th/th/about_management.php</a></li> </ul>
E16	Does the Company have any independent directors who serve on more than five Boards of publicly-listed companies?  <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● No <input type="radio"/> Yes Number.....director (s)</li> <li>● Annual Report 2017 page 20-33</li> <li>● Form 56-1</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_Board.php">http://www.irpc.co.th/th/about_Board.php</a></li> </ul>



No.	Criteria	Information Sources
E17	Does the Company have any executive directors who serve on more than two Boards of publicly-listed companies outside of the business group? <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● No <input type="radio"/> Yes Number.....director (s)</li> <li>● Annual Report 2017 page 22-33</li> <li>● Form 56-1</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_Board.php">http://www.irpc.co.th/th/about_Board.php</a></li> </ul>
E18	Does at least one non-executive director have prior working experience in the major industry the Company is operating in? <b>IRPC: Yes (Mr. Tevin Vongvanich, Mr. Chansin Treenuchagron, Mr. Chavalit Punthong, Mr. Nutthachat Charuchinda, Dr. Anusorn Sangnimnuan, Mr. Somnuk Bomrungsalee, and Mr. Kris Imsang)</b>	<ul style="list-style-type: none"> <li>● No <input type="radio"/> Yes Number 7 directors</li> <li>● Annual Report 2017 page 22-32</li> <li>● Form 56-1</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_Board.php">http://www.irpc.co.th/th/about_Board.php</a></li> </ul>
E19	Does the SET/ SEC have any evidence of non-compliance with SET/ SEC rules and regulations during the past year? <b>IRPC: No</b>	
E20	Does the Company have a compliance unit? (Bonus) <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 107-109</li> <li>● Form 56-1</li> </ul>
E21	Does the Board of directors have an internal audit operation established as a separate unit in the Company? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● An internal audit unit was set up</li> <li><input type="radio"/> An external firm was hired to be the auditor</li> <li>● Annual Report 2017 page 34</li> <li>● Form 56-1</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_organiz.php">http://www.irpc.co.th/th/about_organiz.php</a></li> </ul>
E22	If an internal audit was established, does it report directly to the Audit Committee? <b>IRPC: Yes (The Office of Corporate Internal Audit reports directly to the Audit Committee)</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 34, 88</li> <li>● Form 56-1</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_organiz.php">http://www.irpc.co.th/th/about_organiz.php</a></li> </ul>
E23	Is the head of internal audit identified or, if outsourced, is the name of the external firm disclosed? <b>IRPC: Yes (Head of The Office of Corporate Internal Audit: Mr. Thammasak Panyowatkool)</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 44, 88</li> <li>● Form 56-1</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_management.php">http://www.irpc.co.th/th/about_management.php</a></li> </ul>
<b>Assessment of the Quality of the Audit Committee Report</b>		
E24	Disclosure of meeting attendance of the Board of directors during the year <b>IRPC: Yes A total of 11 meetings were held.</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 94</li> </ul>
E25	Internal control assessment and review <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 88, 52-53</li> </ul>
E26	Connected transactions <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 88, 52-53</li> </ul>
E27	Proposed auditor appointment <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 88, 52-53</li> </ul>
E28	Financial report review <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 88, 52-53</li> </ul>
E29	Legal compliance <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 88, 52-53</li> </ul>

No.	Criteria	Information Sources
E30	Overall concluding opinion <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 88, 52-53</li> </ul>
E31	Does the Company disclose the Board of directors' diversity policy, such as professional skills, specific experiences, or gender, etc? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 89-90</li> <li>● Form 56-1</li> <li>● CG Hanbook page 18</li> </ul>
E32	Does the Company disclose the criteria used in selecting new directors? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 89-90</li> <li>● Form 56-1</li> <li>● CG Hanbook page 18</li> </ul>
E33	Does the Company disclose the process followed in appointing new directors? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 89-90</li> <li>● Form 56-1</li> <li>● CG Hanbook page 18</li> </ul>
E34	Does the Nomination Committee undertake the process of identifying the quality of directors that aligned with the Company's strategic directions? (Bonus) <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 89-90</li> <li>● Form 56-1</li> <li>● CG Hanbook page 18</li> </ul>
E35	Does the Company use professional search firms or director pool when searching for candidates to the Board of directors? (Bonus) <b>IRPC: Yes (The Director Pool was used each time)</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 89-91</li> <li>● Form 56-1</li> </ul>
E36	Does the Company provide an orientation to new directors? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 74</li> <li>● Form 56-1</li> <li>● CG Hanbook page 19</li> </ul>
E37	Does the Board of directors have a policy that encourages directors to attend on-going or continuous professional education programs? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 74-75</li> <li>● Form 56-1</li> <li>● CG Hanbook page 49</li> </ul>
E38	Have Board members participated in the professional/ accredited directors' training? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 74-75</li> <li>● Form 56-1</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_Board.php">http://www.irpc.co.th/th/about_Board.php</a></li> </ul>
E39	Does the Board of directors encourage directors to regularly attend the continuing development programs or seminars? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 74-75</li> <li>● Form 56-1</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_Board.php">http://www.irpc.co.th/th/about_Board.php</a></li> </ul>
E40	How many Board meetings were held in the past year? <b>IRPC: 12 meetings</b>	<ul style="list-style-type: none"> <li>● A total of 12 Board meetings were held.</li> <li>● Annual Report 2017 page 94</li> <li>● Form 56-1</li> </ul>
E41	What is the attendance performance of the Board members during the past 12 months? <b>IRPC: The Board attendance is 80% and individual attendance is over 75%)</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 93-94</li> <li>● Form 56-1</li> </ul>
E42	Does the Company require a minimum quorum of at least 2/3 for Board decisions? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 93-94</li> <li>● Form 56-1</li> <li>● CG Hanbook page 23-24</li> </ul>

No.	Criteria	Information Sources
E43	Are the Board of directors' meetings scheduled in advance throughout the year? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 93</li> <li>● Form 56-1</li> <li>● CG Handbook page 23</li> </ul>
E44	Have all directors attended at least 75% of all the Board meetings held during the year? <b>IRPC: Yes (over xx %)</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 93</li> <li>● Form 56-1</li> </ul>
E45	Are Board papers for the Board of directors' meetings provided to the Board at least five business days in advance of the Board meeting? <b>IRPC: xx days in advance of the Board meeting.</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 93</li> <li>● Form 56-1</li> <li>● CG Handbook page 23</li> </ul>
E46	Are there any meetings of non-executive directors in the absence of the management? <b>IRPC: A total of xxx non-executive directors meetings were held</b>	<ul style="list-style-type: none"> <li>○ No ● Yes. A total of 1 non-executive directors meetings were held,</li> <li>● Annual Report 2017 page 93-94</li> <li>● Form 56-1</li> </ul>
E47	Does the Board of directors provide a risk management policy? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 92-93</li> <li>● Form 56-1</li> <li>● CG Handbook page 30</li> </ul>
E48	Does the Board disclose the internal control and risk management systems it has in place? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 92-93</li> <li>● Form 56-1</li> </ul>
E49	Does the annual report disclose that the Board of directors has conducted a review of the Company's internal controls and risk management systems? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 47-49, 92-93</li> </ul>
E50	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) <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 52-53</li> </ul>
E51	Does the Company disclose how key risks are managed? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 50-53</li> <li>● Form 56-1</li> </ul>
E52	Does the Board of directors state a policy on conflicts of interest? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 65</li> <li>● Form 56-1</li> <li>● CG Handbook page 74</li> <li>● Code of Conduct page 12</li> </ul>
E53	Does the Board of directors clearly distinguish the roles and responsibilities of the Board and those of the management? <b>IRPC: Yes</b>	<p>The Board distinguishes the role and responsibilities of:</p> <ul style="list-style-type: none"> <li>● The Board ● The management ● CEO</li> <li>● Annual Report 2017 page 95</li> <li>● Form 56-1</li> <li>● CG Handbook page 39</li> </ul>
E54	Are the decisions requiring Board of directors' approval disclosed? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 87</li> <li>● Form 56-1</li> <li>● CG Handbook page 20</li> </ul>
E55	Does the Board of directors conduct an annual self-assessment? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 72-74</li> <li>● Form 56-1</li> </ul>

No.	Criteria	Information Sources
E56	Does the Company disclose the process followed in conducting the assessment of the entire Board? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 71-74</li> <li>● Form 56-1</li> </ul>
E57	Does the Company disclose the criteria used in the assessment of the entire Board? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 71-74</li> <li>● Form 56-1</li> </ul>
E58	Is an annual performance assessment conducted of individual director? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 72-73</li> <li>● Form 56-1</li> </ul>
E59	Does the Company disclose the process followed in conducting the individual director assessment? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 72-73</li> <li>● Form 56-1</li> </ul>
E60	Does the Board of directors disclose the criteria used in the individual director assessment? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 72-73</li> <li>● Form 56-1</li> </ul>
E61	Is an annual performance assessment conducted of all Sub-committees? <b>IRPC: Yes</b>	IRPC has 4 Sub-committees (Board level) <ol style="list-style-type: none"> <li>1. Nomination and Remuneration Committee</li> <li>2. Audit Committee</li> <li>3. Risk Management Committee</li> <li>4. Corporate Governance Committee</li> </ol> <ul style="list-style-type: none"> <li>● Annual Report 2017 page 73-74</li> <li>● Form 56-1</li> </ul>
E62	Does the Board of Directors conduct an annual performance assessment of the No. 1 Management (CEO)? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 74</li> <li>● Form 56-1</li> </ul>
E63	Does the Board of directors have a CEO succession plan in place? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 75</li> <li>● Form 56-1</li> </ul>
E64	Does the Company disclose its remuneration policy both short-term and long-term incentives and performance measures for its CEO? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> <li>● CG Handbook page 25-26</li> </ul>
E65	Is there disclosure of the fee structure for non-executive directors? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 99</li> <li>● Form 56-1</li> </ul>
E66	Do the shareholders/ the Board of directors approve the remuneration of the executive director/ the senior executives)? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 99</li> <li>● Form 56-1</li> </ul>
E67	Does the Board of directors appoint a company secretary? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 98</li> <li>● Form 97</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_management.php#nogo">http://www.irpc.co.th/th/about_management.php#nogo</a></li> </ul>
E68	Is the Company secretary educated or trained in legal or accountancy or company secretarial practices? <b>IRPC: The Company Secretary has training related to secretarial practices</b>	Graduated in <ul style="list-style-type: none"> <li>● Accountancy</li> <li>● Laws</li> </ul> Courses trained <ul style="list-style-type: none"> <li>● CSP</li> <li>○ FPCS/ FCS</li> </ul> <ul style="list-style-type: none"> <li>● Annual Report 2017 page 56</li> <li>● Form 56-1</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_management.php#nogo">http://www.irpc.co.th/th/about_management.php#nogo</a></li> </ul>

No.	Criteria	Information Sources
E69	Is the chairman of the Board an independent director? <b>IRPC: No. The Chairman was appointed due to his knowledge, experience, and competency in the petroleum and petrochemical fields. (Chairman : Mr. Tevin Vongvanich)</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_Board.php#nogo">http://www.irpc.co.th/th/about_Board.php#nogo</a></li> </ul>
E70	Is the chairman of the Board also the CEO/ President? <b>IRPC: No (President: Mr. Sukrit Surabotsopon)</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> <li>● Company Website-Please specify the web link to the mentioned information <a href="http://www.irpc.co.th/th/about_Board.php#nogo">http://www.irpc.co.th/th/about_Board.php#nogo</a></li> </ul>
E71	Does the Board define and disclose the role and responsibilities of the chairman of the Board? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> <li>● CG Hanbook page 24</li> </ul>
<b>Appointment of the Audit Committee</b>		
E72	Does the Board of directors appoint the Audit Committee? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> </ul>
E73	Are the duties and responsibilities of the Audit Committee clearly stated? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> </ul>
E74	Does the profile and qualifications of the members of the Audit Committee publicly disclosed? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> </ul>
E75	Are all members of the Audit Committee independent directors? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> </ul>
E76	Did the Audit Committee meet at least four times during the year? <b>IRPC: The Audit Committee held a total of xx meetings.</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> </ul>
E77	Is the attendance of each member at the Audit Committee meetings disclosed in the annual report? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> </ul>
E78	Does at least one of the independent directors of the Audit Committee have accounting qualification? <b>IRPC: Yes (Mr. Jessada Promjart)</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> </ul>
E79	Does the Audit Committee have a primary responsibility for recommendation on the appointment and removal of the external auditor? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> </ul>
E80	Does the Audit Committee have a primary responsibility for recommendation on the appointment, transfer and removal of the internal auditor? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> </ul>
<b>Appointment of the Remuneration Committee</b>		
E81	Does the Board of directors appoint the Remuneration Committee? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> </ul>



No.	Criteria	Information Sources
E82	Are the duties and responsibilities of the Remuneration Committee clearly stated? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 89-90</li> <li>● Form 56-1</li> </ul>
E83	Is the Committee composed of a majority of independent directors (over 50%)? <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 89</li> <li>● Form 56-1</li> </ul> <p>The Committee has 3 members, one (33.33%) of whom is an independent director.</p>
E84	Is the Chairman of the Committee an independent director? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 23, 89</li> <li>● Form 56-1</li> </ul>
E85	Did the Remuneration Committee meet at least twice during the year? <b>IRPC: The Remuneration Committee held a total of xx meetings.</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 94</li> <li>● Form 56-1</li> </ul>
E86	Is the attendance of each member at Remuneration Committee meetings disclosed in the annual report? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 94</li> <li>● Form 56-1</li> </ul>
<b>Appointment of the Nomination Committee</b>		
E87	Does the Board of directors appoint the Nomination Committee? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 89</li> <li>● Form 56-1</li> </ul>
E88	Are the duties and responsibilities of the Committee clearly stated? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 89-90</li> <li>● Form 56-1</li> </ul>
E89	Does the Nomination Committee comprise entirely of independent directors? (Bonus) <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 89</li> <li>● Form 56-1</li> </ul>
E90	Is the Nomination Committee composed of a majority of independent directors (over 50%)? <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 89</li> <li>● Form 56-1</li> </ul> <p>The Nomination Committee has 3 members, one (33.33%) of whom is an independent director</p>
E91	Is the Chairman of the Nomination Committee an independent director? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 23, 89</li> <li>● Form 56-1</li> </ul>
E92	Did the Nomination Committee meet at least twice during the year? <b>IRPC: The Nomination Committee held a total of xx meetings.</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 94</li> <li>● Form 56-1</li> </ul>
E93	Is the number of meetings and member attendance at the Nomination Committee meetings disclosed? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 94</li> <li>● Form 56-1</li> </ul>
E94	Does the Board of directors appoint the Corporate Governance Committee (at the Board level only)? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> </ul>
E95	Does the Board of directors appoint the Risk Management Committee? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page</li> <li>● Form 56-1</li> </ul>

No.	Criteria	Information Sources
E96	Does the Board of directors comprise of at least five members and no more than 12 members? <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 82</li> <li>● Form 56-1</li> <li>● The Board comprises of 15 members</li> </ul>
E97	Does the Company have at least one female independent director? (Bonus) <b>IRPC: Yes (Ms. Ruenvadee Suwanmongkol)</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 27-83</li> <li>● Form 56-1</li> <li>● The Board has 1 female independent director</li> </ul>
E98	How many Board members are non - executive directors? <b>IRPC: 14 (out of 15 members, or 93.33%)</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 82</li> <li>● Form 56-1</li> <li>● The Board has 14 non-executive directors</li> </ul>
E99	Among the Board of directors, how many are independent directors? <b>IRPC: 7 (out of 15 members, or 46.67%)</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 92</li> <li>● Form 56-1</li> <li>● The Board has 7 independent directors.</li> </ul>
E100	Does the Board of directors provide the definition of 'independence' for identifying independent directors in public communications? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 84</li> <li>● Form 56-1</li> </ul>
E101	Are the independent directors independent of the management and major shareholders? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 87</li> <li>● Form 56-1</li> <li>● Finance</li> </ul>
E102	Does the annual report contain a separate Board of directors' report describing their responsibilities in reviewing the Company's financial statements? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 84</li> <li>● Form 56-1</li> </ul>
E103	Does the Company provide an employee stock options scheme with (1) the exercise period over 3 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) <b>IRPC: No</b>	<p>At the 2015-2017 AGM/ EGMr</p> <p><input type="radio"/> Approved <input type="radio"/> ESOP <input type="radio"/> EJIP <input type="radio"/> warrant <input type="radio"/> No</p> <ul style="list-style-type: none"> <li>● Annual Report 2017 page 87</li> <li>● Form 56-1</li> <li>● SET Website/ SETSMART</li> </ul>
E104	Did the Company sign the declaration of the Private Sector Collective Action Coalition Against Corruption? (Bonus) <b>IRPC: Yes</b>	
E105	Did the Company publish the Board Committee Report for each Board Committee (only at the Board level) in the Company's annual report? (Bonus) <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 88-92</li> <li>● Form 56-1</li> </ul>
E106	Has the Company had any non-compliance cases regarding fraud/ ethics in the past year? (Penalty) <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 107</li> </ul>
E107	Have there been any instances where non-executive directors have resigned and raised any issues of governance-related concerns? (Penalty) <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 107</li> </ul>
E108	Have there been major corporate scandals that point to weak oversight by the Board of directors? (Penalty) <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● Annual Report 2017 page 107</li> </ul>

## Compliance with the Social Responsibility Criteria (2018)

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**IRPC Public Company Limited**

555/2 Energy Complex Building B, 6<sup>th</sup> Floor,  
Vibhavadi-Rangsit Rd., Chatuchak, Bangkok 10900 Thailand  
Tel : 66 (0) 2765-7000 Fax : 66 (0) 2765-7001

**[www.irpc.co.th](http://www.irpc.co.th)**