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In Collaboration with RobecoSAM ●



**2016 ANNUAL REPORT**  
IRPC Public Company Limited

# GETTING TO THE TOP AND STAYING THERE



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**"...In order to develop anything, it is crucial to start from the existing basics.  
If the basics are not stable or flawed, it would be difficult to make additional development.  
So we should make a clear understanding, in order to promote any kinds of development,  
good basics should be considered in a similar degree. ..."**

*His Majesty King Bhumibol Adulyadej's royal sermon  
given on the commencement ceremony at Chulalongkorn University Auditorium,  
Chulalongkorn University, July 10, 1980*



IRPC will follow his majesty's philosophy  
for sustainable development.

With heart-felt condolence and highness honor,  
Board of Directors, Managements, and staffs of  
IRPC Public Company Limited



## MESSAGE FROM THE CHAIRMAN

### Dear Shareholders,

This year marked the tragic, massive loss for Thais, with His Majesty King Bhumibol Adulyadej passing away on October 13. The Board of Directors, the executives, and all employees united in mourning and undertook several public service activities under the name of “IRPC collectively mourns His Majesty the late King Bhumibol: Good deeds for our beloved Father” in remembrance of his boundless benevolence. IRPC is committed to maintaining his resolve and adopting his initiatives in the conduct of its business.





This year also marked ongoing resounding success from last year, with Baht 9.721 billion posted in net profit, a 3.4% rise from last year's Baht 9.402 billion. A major part (Baht 2.311 billion) of this was made by the Everest Project, an ongoing project from last year jointly carried out with a world-class consultant company, designed to comprehensively raise efficiency by calling on everyone's efforts. It is indeed IRPC's auspicious 11th year, for we appear to have reached a plateau of healthy profits in the wake of significant leaps in processing efficiency, marketing, innovation, R&D, value addition, knowledge accumulation, and HR development. To the management, the Board has granted its full support so that success may be based on responsibility to shareholders, society, and stakeholders, along with transparency and corporate governance. As far as corporate culture is concerned, we are proceeding from continuous development to further development. IRPC rolled out its i-SPIRIT values last year and began forming a new DNA in each employee late this year to close behavioral gaps hindering maximum efficiency. In other words, strengthening from the inside. We believe this move will take IRPC closer to its vision fulfillment.

Full efforts were made by the Board and its committees in executing their mandates this year. In jointly setting directions and strategies, as well as efficient choice of business issues, all directors applied their capabilities, experience, knowledge, and skills, which abounded in diverse and thorough ways. Equally important, they value business conducted with good governance, anti-corruption, and anti-bribery. Consequently, IRPC stands an excellent chance of sustainable growth. It is a public company dubbed by the Stock Exchange

of Thailand "SET Sustainability Investment" securities since ranking began last year. Also, IRPC garnered a special-mention NACC Integrity award for 2016, presented by the Office of the National Anti-Corruption Commission. IRPC also extended its support to public-sector initiatives through the "Pracharath Project", flood victim assistance, and application of 35%-natural rubber polymer innovations to capitalize on natural-rubber oversupply.

On behalf of the Board of Directors, I would like to express my heartfelt appreciation to everyone for their confidence in, support to, and cooperation with IRPC all through the years-the shareholders, customers, business partners, government agencies, academicians, financial institutions, communities, and all employees and executives of IRPC and its affiliates. I salute all employees for their total dedication, which has once again delivered impressive results.

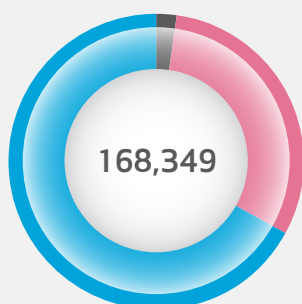
I have every confidence that the preparedness and continuous, earnest all-around development will enable IRPC to grow in the right directions and stand on its feet-whether business, organization health, corporate governance, social responsibility, or corporate citizenship. The sky is the limit for IRPC. The result of your success will doubtlessly multiply the value added for shareholders and returns for stakeholders and Thailand.



Mr. Tevin Vongvanich  
Chairman

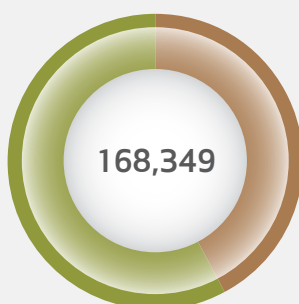
## KEY PERFORMANCE

By Sales Revenue



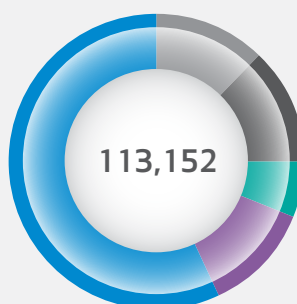
Petroleum Products  
Petrochemical Products  
Others

By Distribution



Domestic  
Export

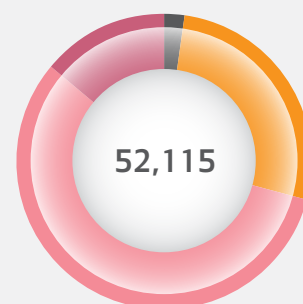
Petroleum Products



Diesel  
Gasoline  
Fuel Oil  
Lube Base Oil and Asphalt  
Others

Petrochemical Products

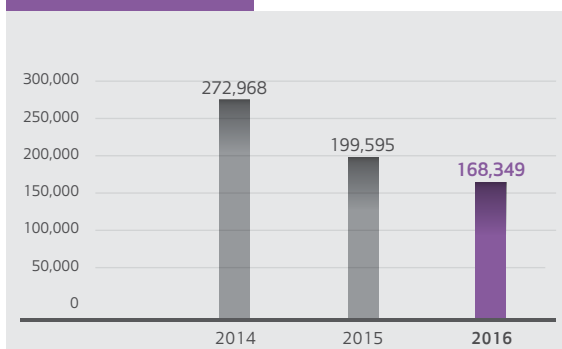
(Unit: Million Baht)



Aromatic  
Olefins and Polyolefins  
Styrenics  
Polyol

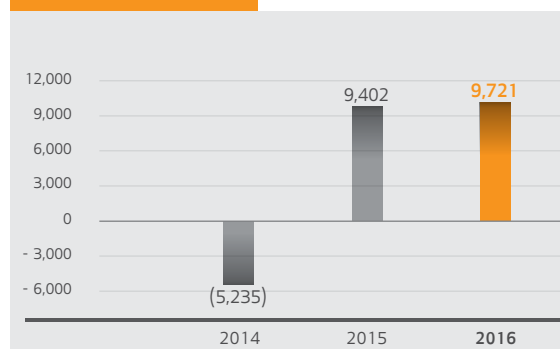
Net Sales

(Unit: Million Baht)



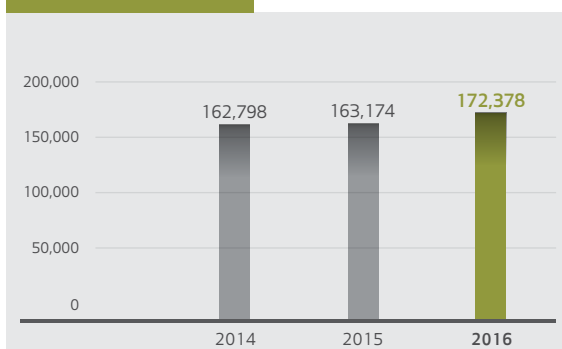
Net Profit

(Unit: Million Baht)



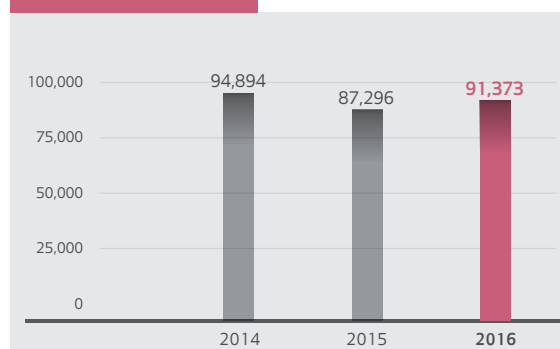
Total Assets

(Unit: Million Baht)



Total Liabilities

(Unit: Million Baht)



## FINANCIAL HIGHLIGHTS

(Unit: Million Baht)

	2014	2015	2016
<b>Financial Position</b>			
Current Assets	44,142	35,984	39,848
Total Assts	162,798	163,174	172,378
Current Liabilities	46,829	36,210	52,429
Total Liabilities	94,894	87,296	91,373
Shareholder's Equity	67,904	75,878	81,005
Registered Capital	20,475	20,475	20,475
Paid-up Capital	20,434	20,434	20,434
<b>Operating Performance</b>			
Sales			
Net Sales <sup>(1)</sup>	281,589	214,172	185,041
Cost of Goods Sold <sup>(2)</sup>	272,968	199,595	168,349
Gross Profit (Loss)	287,930	197,913	164,900
EBITDA <sup>(3)</sup>	(6,341)	16,258	20,140
Net Profit (Loss)	(1,402)	17,033	17,430
	(5,235)	9,402	9,721
<b>Financial Ratio</b>			
EBITDA Margin	N/A	7.95%	9.42%
Net Profit Margin	N/A	4.39%	5.25%
Return on Assets	N/A	5.77%	5.79%
Return on Equity	N/A	13.09%	12.41%
Current Ratio (time)	0.94	0.99	0.76
Net Debt to Equity (time) <sup>(4)</sup>	0.87	0.66	0.75
Dividend per share	N/A	48%	48%
Dividend payout	0.08	0.22	<sup>(5)</sup> 0.23
Book Value per share (baht)	3.32	3.71	3.96
Earning per share (baht)	(0.26)	0.46	0.48

**Notes:**

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

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

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

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

(5) The Board of Directors of the Company's meeting on 14 February 2017, approved a dividend payment for the operating results of 2016 at Baht 0.23 per share. However, the approval for the dividend payment shall be proposed to the Annual Shareholders' Meeting for the year 2017 for the further consideration and approval.



## VISION

Leading Integrated Petrochemical Complex  
in Asia by 2020

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## MISSION

Operational Excellence

Value Creation

High Performance  
Organization

Innovation & Creation of  
New Business

Corporate Social  
Responsibility

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## VALUES



Individual Ownership

Responsibility for Society

Synergy

Integrity & Ethics

Performance Excellence

Trust & Respect

Innovation

# BOARD RESPONSIBILITY

Boards of Directors

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Organization Structure

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Managements Team

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Report of the Audit Committee

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Internal control

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Message from the Chairman,  
Nomination and Remuneration Committee

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Message from the Chairman,  
Risk Management Committee

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Message from the Chairman,  
Corporate Governance Committee

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Corporate Governance Report

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## BOARDS OF DIRECTORS



**Standing :** Mr. Songpope Polachan  
Independent Director/  
Chairman of the Audit  
Committee

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

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

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

**Mr. Pramoul Chanpong**  
Independent Director/  
Member of the Corporate  
Governance Committee

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

**Mr. Tevin Vongvanich**  
Chairman





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

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

**General Theppong Tippayachan**  
Independent Director

**Mr. Somnuk Bomrungsalee**  
Director/Member of  
the Nomination and  
Remuneration Committee

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

**Mr. Nattachat Charuchinda**  
Director/Chairman of  
the Risk Management  
Committee

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

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

# BOARDS OF DIRECTORS

## Mr. Tevin Vongvanich

Chairman/The Directors who are authorized to sign on behalf of the Company

Age 58 Years Directorship Starting Date: 20 October 2015

### Education/Training

- B.E. Chemical Engineering (1st Class Honor), Chulalongkorn University, Thailand
- M.Sc. Chemical Engineering, Rice University, USA
- M.Sc. Petroleum Engineering, University of Houston, USA
- 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, 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)

### 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

#### Current Position in Public Companies

- 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

#### Current Position in Limited Companies and Others

- 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 Subcommittee, National Committee on Competitive Advantage (NCC), National Economic and Social Development Board (NESDB)
- Nov. 2014-Present Honorary Advisor, Energy Committee National Legislative Assembly

## Mr. Songpope Polachan

**Independent Director/  
Chairman of the Audit Committee**

Age 62 Years Directorship Starting Date: 5 April 2013

### Education/Training

- Bachelor of Science (Geology), Chiangmai 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
- Finance for Non-Finance Directors Program (FND), Class 9/2004, Thai Institute of Directors (IOD)
- Director Accreditation Program (DAP), Class 23/2004, 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 of subsidiaries

None

### Work Experience within the past 5 years

- 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

#### Current Position in Public Companies

- Sep. 2016-Present Chairman of the Audit Committee, IRPC Public Company Limited
- Jun. 2015-Present Member of the Audit Committee, IRPC Public Company Limited
- Oct. 2014-Present Independent Director, IRPC Public Company Limited
- Apr. 2013-Present Director, IRPC Public Company Limited

## Mr. Woothisarn Tanchai

**Independent Director/Chairman of  
the Nomination and Remuneration Committee**

Age 58 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, 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

#### Current Position in Public Companies

- Jun. 2015-Present Independent Director/Chairman of The Nomination and Remuneration Committee, IRPC Public Company Limited

#### Current Position in Limited Companies and Others

- Dec. 2014-Present Secretary General, King Prajadhipok's Institute
- Present Advisor, Constitution Drafting Committee 2014
- Present Member, Nakhon Ratchasima Rajabhat University Council
- Present Member of the Office of the Basic Education Commission Sub-Committee, the Public Sector Development Commission
- Present Office of the Public Sector Development Commission
- Present Member of the Office of the Basic Education Commission Council Committee the Thammasat University



## Mr.Anusorn Sangnimnuan

### Independent Director/Chairman of the Corporate Governance Committee

Age 62 Years Directorship Starting Date: 29 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 of subsidiaries

None

#### Work Experience within the past 5 years

- 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

##### Current Position in Public Companies

- Sep. 2016-Present Chairman of the Corporate Governance Committee, IRPC Public Company Limited
- Aug. 2016-Present Independent Director, IRPC Public Company Limited
- 2016-Present Independent Director/Chairman of the Corporate Governance Committee/Member of the Nomination and Remuneration Committee, Pruksa Holding Public Company Limited
- 2016-Present Director, B.Grimm Power Public Company Limited
- 2014-Present Independent Director, Pruksa Real Estate Public Company Limited

##### Current Position in Limited Companies and Others

- 2016-Present Director, B.Grimm Power Public Company Limited
- 2014-Present Independent Director, Pruksa Real Estate Public Company Limited

## Mr.Nattachat Charuchinda

**Director/Chairman of the Risk Management Committee/The Directors who are authorized to sign on behalf of the Company**

Age 61 Years Directorship Starting Date: 29 April 2016

### Education/Training

- Bachelor of Engineering, Chiangmai University
- Master of Business Administration, Thammasat University
- Program for Global Leadership (PGL), Harvard Business School, USA
- Oxford Energy Seminar, UK
- Break Through Program for Senior Executives (BPSE), IMD Institute, Switzerland
- 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

#### Current Position in Public Companies

- Jun. 2015-Present Director/Chairman of the  
Risk Management Committee,  
IRPC Public Company Limited

## General Theppong Tippayachan

**Independent Director**

Age 58 Years Directorship Starting Date: 1 September 2016

### Education/Training

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

### 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

- 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

#### Current Position in Limited Companies and Others

- Oct. 2016-Present Assistant Commander in Chief,  
Royal Thai Army

## General Sasin Thongpakdee

Independent Director/Member of  
the Corporate Governance Committee

Age 58 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
- National Defence College, Class 24/2011, The Joint State-Private Sector Course
- 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 of subsidiaries

None

### Work Experience within the past 5 years

- 2016 Deputy Chief of Staff, Royal Thai Army
- 2012 Director-General, Directorate of Operations, RTA

### Current Position

#### Current Position in Public Companies

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

#### Current Position in Limited Companies and Others

- Oct. 2016- Present Chief of Staff, Royal Thai Army

## Mr. Pramoul Chanpong

Independent Director/Member of  
the Corporate Governance Committee

Age 61 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 of subsidiaries

None

### Work Experience within the past 5 years

- Jul.2014-Sep.2016 Inspector General, Ministry of Energy
- 2013-2014 Director-General, Dept. Of Alternative Energy Development and Efficiency

### Current Position

#### Current Position in Public Companies

- Oct. 2019-Present Independent Director, IRPC Public Company Limited
- Oct. 2014-Present Member of the Corporate Governance Committee, IRPC Public Company Limited
- Apr. 2014-Present Director, IRPC Public Company Limited



## Somnuk Bomrungsalee

### Director/Member of the Nomination and Remuneration Committee

Age 59 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 229/2016, Thai Institute of Directors (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

- 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

##### Current Position in Public Companies

- Apr. 2016-Present Member of the Nomination and Remuneration Committee, IRPC Public Company Limited
- Apr. 2014-Present Director, IRPC Public Company Limited

##### Current Position in Limited Companies and Others

- Oct. 2016- Present Deputy Secretary of Energy

## Mr.Chavalit Punthong

### Director/Member of the Nomination and Remuneration Committee. The Directors who are authorized to sign on behalf of the Company

Age 60 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 of subsidiaries

None

#### Work Experience within the past 5 years

- 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

##### Current Position in Public Companies

- Apr. 2016-Present Member of the Nomination and Remuneration Committee, IRPC Public Company Limited
- Nov. 2015-Present Director, IRPC Public Company Limited
- Oct. 2016-Present Member of the Risk Management Committee, Global Power Synergy Public Company Limited
- Oct. 2015-Present Chief Operating Officer Infrastructure and Sustainability Management Business Group, PTT Public Company Limited
- Dec. 2015-Present Director, Global Power Synergy Public Company Limited

## Mr.Chansin Treenuchagron

**Director/Member of the Risk Management Committee. The Directors who are authorized to sign on behalf of the Company**

Age 56 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
- 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 Alumni 2015
- Advanced Certificate Course in Public Economics Management for Executives, Class 10, King Prajadhipok's Institute
- 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 of subsidiaries

None

### Work Experience within the past 5 years

- 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

#### Current Position in Public Companies

- Apr. 2016-Present Member of the Risk Management Committee,  
IRPC Public Company Limited
- Oct. 2015-Present Director,  
IRPC Public Company Limited
- Jan. 2016-Present Senior Executive Vice President, Downstream Business Group Alignment,  
PTT Public Company Limited

#### Current Position in Limited Companies and Others

- Nov. 2015-Present Chairman, PTT Polymer Marketing Company Limited
- Nov. 2015-Present Chairman, PTT Polymer Logistics Company Limited

## Mr.Jessada Promjart

### Independent Director/ Member of the Audit Committee

Age 55 Years Directorship Starting Date: 15 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, Class14, 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 of subsidiaries

None

#### Work Experience within the past 5 years

- 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, SEEDMCOT 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

##### Current Position in Public Companies

- Sep.2016-Present Member of the Audit Committee, IRPC Public Company Limited
- Aug.2016-Present Independent Director, IRPC Public Company Limited
- Mar.2016-Present Director, IRPC Public Company Limited
- Jun.2016-Present Director, Chu Kai 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

##### Current Position in Limited Companies and Others

- Nov. 2016-Present Director and Audit Committee, Expressway Authority of Thailand
- Dec. 2015-Present Director and Audit Committee, Government Savings Bank (Thailand)
- Apr. 2015-Present Director of Construction sector, Chulabhorn Hospital and Chulabhorn Medicine Institute, Chulabhorn Hospital
- Mar. 2015-Present Corporate Governance Committee of the agreement of shopping center, Pahonyothin road's advantage between State Railway of Thailand and Central Inter Pathana Company Limited

## Miss Ruenvadee Suwanmongkol

Independent Director/  
Member of the Audit Committee

Age 52 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 of subsidiaries

None

### Work Experience within the past 5 years

- 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

#### Current Position in Public Companies

- Apr. 2016-Present Independent Director/Member of the Audit Committee, IRPC Public Company Limited

#### Current Position in Limited Companies and Others

- Feb. 2014-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
- 2014-Present Director-General, Legal Execution Department, Ministry of Justice
- Present Committee Member, The Foundation Assanee Pollajan
- Present Committee Member, Thai Committee for Refugees Foundation
- Present Committee Member, The Foundation of Business Lawyer Promotion
- Present Committee Member, Women for Peace foundation

## Mr.Ekniti Nitithanprapas

Director/Member of the  
Risk Management Committee

Age 45 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)

### 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

- 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

#### Current Position in Public Companies

- Mar. 2016- Present Member of the 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 the Nomination, Compensation and Corporate Governance Committee, Siam Commercial Bank Public Company Limited

#### Current Position in Limited Companies and Others

- Oct. 2015- Present Director-General of the State Enterprise Policy Office, Ministry of Finance
- Nov. 2015- Present Chairman, National Credit Bureau Company Limited

## Mr. Sukrit Surabotsopon

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

Age 58 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
- 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)
- Politics and Governance in Democratic Systems for Executive source, Class 15/2012, King Prajadhipok's Institute
- 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" : 8,000,000 Share  
Possession 0.03915%

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

None

### Work Experience within the past 5 years (As of 31 December 2016)

- 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

#### Current Position in Public Companies

- Oct. 2014-Present Member of the 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
- Nov. 2013-Present Director, UBE Chemicals (Asia) Public Company Limited

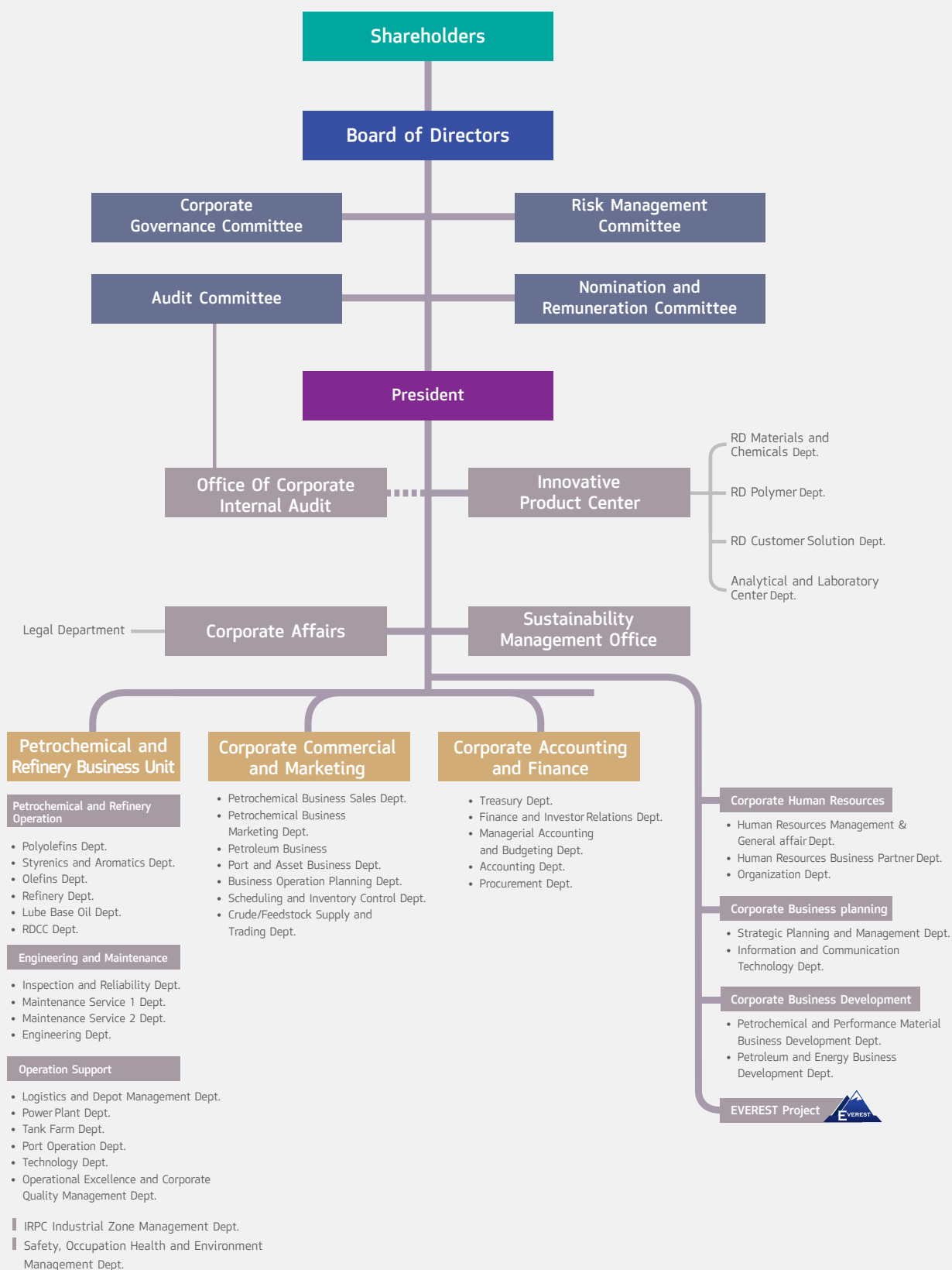
#### Current Position in Limited Companies and Others

- Jan. 2016-Present Director, PTT Energy Solutions Company Limited
- Mar. 2015-Present Chairman, IRPC Technology Company Limited
- Feb. 2015-Present Chairman, IRPC PCC 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



# ORGANIZATION STRUCTURE

As of January 1, 2017



## MANAGEMENTS TEAM



**Mr. Pongpraphan 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 Commercial and Marketing



**Miss Wanida Utaisomnapa**

Executive Vice President,  
Corporate Business Planning

**Mr. Sirimet Leepagorn**

Executive Vice President,  
EVEREST Project Director

**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. Woravuth Sivapetranart**

Executive Vice President,  
Refinery and Petrochemical  
Operation

**Mr. Veerawat Srinoradithlert**

Executive Vice President,  
Engineering & Maintenance

**Mr. Vichit Nittayanonte**

Executive Vice President,  
Operation Support



**Mr. Phothiwat Paopongchuang**

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

**Miss Awrapin Ketratanakul**

Executive Vice President,  
Sustainability Management Office

**Mr. Kraisit Anukoolutaiwong**

Executive Vice President,  
Corporate Human Resource

**Mr. Trisdee Watanangkur**

Executive Vice President,  
Operation Support  
(Retire 31 December 2016)

## MANAGEMENTS TEAM

### Mr.Sukrit Surabotsopon

#### President

Age 58 Years Appoint President since october 1, 2013

(details as shown in Board of Directors page 21)

### Mr.Pongraphan Titathavewatana

#### Senior Executive Vice President, Petrochemical & Refinery Business Unit

Age 58 Years Appointed management under SEC regulations 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": 364,478 Share Possession: 0.00178%

#### 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

##### Current Position in Public Companies

- Jan. 2016-Present Senior Executive Vice President, Petrochemical & Refinery Business Unit, IRPC Public Company Limited

##### Current Position in Limited Companies and Others

- 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 54 Years Appointed management under SEC regulations since January 2, 2015

#### Education/Training

- Bachelor of Science (Chemistry), Ramkhamhaeng University
- Master of Business Administration, Asian University
- Mini MBA, Thammasart University
- Director Accreditation Program (DAP), Class 111/2014, Thai Institute of Directors (IOD)
- Director Certification Program (DCP), Class 224/2016, Thai Institute of Directors (IOD)
- The Board's Role in Strategic Formulation, Governance Matters Australia

#### Possession of IRPC shares (%)

No. of share "IRPC": 311,480  
(Self: 295,580 Share Possession: 0.00145%)  
(Spouse: 15,900 Share Possession: 0.00008%)

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

None

#### Work Experience within the past 5 years

- Jan. 2016-Dec. 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

##### Current Position in Public Companies

- Jan. 2016-Present Senior Executive Vice President, Corporate Commercial and Marketing, IRPC Public Company Limited

##### Current Position in Limited Companies and Others

- Jan. 2016-Present Acting Managing Director, IRPC OIL Company Limited
- Jan. 2016-Present Acting Managing Director IRPC A&L Company Limited
- Feb. 2015-Present Director, IRPC-PCC Company Limited
- Dec. 2014-Present Director, IRPC A&L Company Limited
- Dec. 2014-Present Director UBE Chemical (Asia) Public Company Limited Current Position in Limited Companies and Others
- Feb. 2012-Present Director, IRPC Oil Company Limited

## Mrs.Rachadaporn Rajchataewindra

### Senior Executive Vice President, Corporate Accounting & Finance

Age 58 Years Appointed management under SEC regulations since November 1, 2015

#### Education/Training

- Bachelor of Art (Accounting), Chiangmai University
- Bachelor of Law, Sukhothai Thammathirat University
- Master of Business Administration, International Business (English Program), University of the Thai Chamber of Commerce
- PTT Group Leadership Development Program III, PLLI
- NIDA-Wharton Executive Leadership Program, The Wharton School University of Pennsylvania
- TLCA Executive Development Program (EDP), Class4/2009, Thai Listed Companies Association
- Director Accreditation Program (DAP), Class111/2014, Thai Institute of Directors (IOD)
- Corporate Governance for Executive, Class1/2014, Thai Institute of Directors (IOD)
- Successful Formulation and Execution of Strategy, Class21/2014, Thai Institute of Directors (IOD)
- Director Certification Program (DCP), Class204/2015, 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

- Dec.2015-Jul.2016 Director, Thai ABS Company Limited
- 2010-Oct 2015 Vice President, Corporate, PTT Asahi Chemical Company Limited

#### Current Position

##### Current Position in Public Companies

- 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

##### Current Position in Limited Companies and Others

- Apr. 2016-Present Director, IRPC PCC Company Limited
- 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, IRPC A&L Company Limited

## Mr.Vichit Nittayanonte

### Executive Vice President, Operation Support

Age 57 Years Appointed management under SEC regulations since January 2, 2015

#### Education/Training

- Bachelor of Science (General Science), Chulalongkorn University
- Master of Business Administration Degree, Burapha 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

- 2012-2016 Executive Vice President, Petrochemical Operation, IRPC Public Company Limited
- Dec. 2012-2016 Acting Managing Director, Thai ABS Company Limited
- Feb. 2012-Jul. 2016 Director, Thai ABS Company Limited
- 2010-2012 Managing Director, IRPC Polyol Company Limited

#### Current Position

##### Current Position in Public Companies

- Jan. 2017-Present Executive Vice President, Operation Support, IRPC Public Company Limited

##### Current Position in Limited Companies and Others

- Jan. 2016-Present Acting Managing Director, IRPC Polyol 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, Petrochemical and Refinery Operation

Age 53 Years Appointed management under SEC regulations 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

##### Current Position in Public Companies

- 2017-Present Executive Vice President, Petrochemical and Refinery Operation IRPC Public Company Limited

##### Current Position in Limited Companies and Others

None

## Mr.Veerawat Srinoradithlert

### Executive Vice President, Engineering & Maintenance

Age 54 Years Appointed management under SEC regulations 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

##### Current Position in Public Companies

- 2012-Present Executive Vice President, Engineering & Maintenance, IRPC Public Company Limited

##### Current Position in Limited Companies and Others

None

## Mr.Trisdee Watanangkur

### Executive Vice President, Operation Support

(Retire 31 December 2016)

Age 60 Years Appointed management under SEC regulations since January 2, 2015

#### Education/Training

- Bachelor of Science (Chemical Engineering), Chulalongkorn University
- Mini MBA, Thammasat University

#### Possession of IRPC shares (%)

No. of share "IRPC": 355,866 Share Possession: 0.00174%

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

None

#### Work Experience within the past 5 years

- 2013 Executive Vice President Operation 4, IRPC Public Company Limited
- 2012 Executive Vice President Port Business, IRPC Public Company Limited

#### Current Position

##### Current Position in Public Companies

- 2014-Present Executive Vice President Operation Support, IRPC Public Company Limited

##### Current Position in Limited Companies and Others

None

## Mr.Sirimet Leepagorn

### Executive Vice President/ EVEREST Project Director

Age 49 Years Appointed management under SEC regulations 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 years

- 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

##### Current Position in Public Companies

- Jan. 2016-Present EVEREST Project Director, , IRPC Public Company Limited

##### Current Position in Limited Companies and Others

- 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 50 Years Appointed management under SEC regulations 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

##### Current Position in Public Companies

- Jan. 2016-Present Executive Vice President, Corporate Business Planning, IRPC Public Company Limited
- Feb. 2016-Present Secretary of the Risk Management Committee, IRPC Public Company Limited

##### Current Position in Limited Companies and Others

None

## Mr.Chalor Panutrakul

### Executive Vice President, Corporate Business Development

Age 58 Years Appointed management under SEC regulations 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
- The Board's Role in Strategic Formulation, Governance Matters Australia
- Advanced Security management Program (ASMP), Class 4, The Association National Defense College of Thailand under the Royal Patronage of His Majesty the King
- 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

##### Current Position in Public Companies

- 2014-Present Executive Vice President, Corporate Business Development, IRPC Public Company Limited

##### Current Position in Limited Companies and Others

None

## Mr.Pravet Assavadakorn

### Executive Vice President, Innovative Product Center

Age 58 Years Appointed management under SEC regulations 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
- Director Accreditation Program (DAP), Class 98/2012, 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

- 2009-2014 Executive Vice President, Corporate Business Development, IRPC Public Company Limited

#### Current Position

##### Current Position in Public Companies

- 2014-Present Executive Vice President, Innovative Product Center, IRPC Public Company Limited

##### Current Position in Limited Companies and Others

None



## Mr.Kraisit Anukoolutaiwong

### Executive Vice President, Corporate Human Resource

Age 55 Years Appointed management under SEC regulations 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": 1 Share Possession: 0.00000%

#### 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

##### Current Position in Public Companies

- 2011-Present Executive Vice President,  
Corporate Human Resource,  
IRPC Public Company Limited

##### Current Position in Limited Companies and Others

- 2015-Present Director,  
Technology IRPC Company Limited

## Mr.Thammasak Panyowatkool

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

Age 50 Years Appointed management under SEC regulations 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

- 2014-2015 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

##### Current Position in Public Companies

- 2016-Present Executive Vice President, Officiate  
as Office of Internal Audit Manager  
and Secretary of Audit Committee  
IRPC Public Company Limited

##### Current Position in Limited Companies and Others

- 2014 -Present Director,  
IRPC Technology Company Limited
- 2014-Present Director,  
Rayong Acetylene Company Limited

## Miss Awrapin Kettratanakul

### Executive Vice President, Sustainability Management Office

Age 57 Years Appointed management under SEC regulations 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

##### Current Position in Public Companies

- 2014-Present Executive Vice President, Sustainability Management Office, IRPC Public Company Limited

##### Current Position in Limited Companies and Others

None

## Mr. Phothiwat Paopongchuang

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

Age 55 Years Appointed management under SEC regulations 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

#### 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

##### Current Position in Public Companies

- 2014-Present Executive Vice President, President Office, IRPC Public Company Limited

##### Current Position in Limited Companies and Others

- 2014-Present Managing Director, Technology IRPC Company Limited

## Miss Monwipa Choopiban

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

Age 58 Years Appointed management under SEC regulations 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)
- CGR Workshop: Enhancing Good Corporate based on CGR Scorecard
- CSR Thailand Conference: CSR Roadmap for ASEAN
- London Global Convention on Corporate Governance and Sustainability Year 2011 and 2014
- Thailand's 5th National Conference on Collective Action Against Corruption (CAC)
- 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)
- The Board's Role in Strategic Formulation, Governance Matters Australia
- Anti-Corruption in Practice (ACPC), Thai Institute of Directors (IOD)
- Corporate Governance for Executives (CGE), Thai Institute of Directors (IOD)
- Tone at the Top Series "Clean Business Engagement with Public Sector", Thai Institute of Directors (IOD)
- How can Corporate Directors Help Nurture Social Enterprise, Thai Institute of Directors (IOD)
- Honest & Caution as the Director's Shield, CG Forum, The Stock Exchange of Thailand
- Tone at the Top Series "Operating Transparency Business in Asia", Thai Institute of Directors (IOD)
- Managing Conflict in the Boardroom, Thai Institute of Directors (IOD)
- "Organization Fraud", Prevention Detection & Control, CG Form, The Stock Exchange of Thailand
- National Dialogue on Business and Human Life (GCNT)
- Sustainable Brand 2016

### 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

#### Current Position in Public Companies

- 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

#### Current Position in Limited Companies and Others

- 2015-Present Director, Technology IRPC Company Limited

## REPORT OF THE AUDIT COMMITTEE

### Dear Shareholders,

IRPC's Audit Committee consists of three independent directors that are qualified and highly experienced in the energy business, finance and accounting, and law. Chaired by Mr. Songpope Polachan, it features Mr. Jessada Phromjat and Ms. Ruenwadee Suwannamongkol as members. The year saw the resignation of the former chairman (Mr. Cherdpong Siriwit) on reaching the age of 70 in line with corporate governance, with effect from September 1. Board Meeting No. 8/2016 of August 26 this year resolved to appoint Mr. Polachan 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 adequate, efficient, and effective internal control and internal audit systems.

Meeting 12 times, this year the committee met the management, internal auditors, and the external auditor on relevant items. On one occasion it got together with the external auditor in the absence of the management. The committee's performance this year is captured below.

**1. Review of financial reports:** The committee reviewed key data of quarterly and annual financial statements, with clarifications given by the external auditor and finance and accounting executives to ensure that their preparation conformed to TFRS (Thai Financial Reporting Standards), which aligns with international financial reporting standards. The statements had been unconditionally certified by the external auditor. A meeting with the external auditor in the absence of the management to hear their free views on financial statement audit and internal control dealing with the audit. The external auditor reported no significant issue or suspicious behavior in the management's conduct.

**2. 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 membership of CAC (Collective Action Coalition against Corruption) of the Anti-Corruption Organization of Thailand.

**3. Review of risk management:** The Board and the management valued risk management. In place was assessment of internal and external risk factors and 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 updates on risk management regularly reported to the Board. The Audit Committee reviewed risk management effectiveness through outcome 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.

**4. Review of internal control:** The committee reviewed IRPC's internal control system for the year to reasonably ensure that its business proceeded efficiently and effectively, enabling it to achieve all objectives and goals. The Office of Corporate Internal Audit staged assessment of internal audit by asking executives to use control self-assessment (CSA) forms and the form for assessing the adequacy of internal control against the practical guideline scope of COSO (The Committee of Sponsoring Organizations of the Treadway Commission). Such assessment showed that IRPC had indeed commanded a sound internal control system that was adequate for business, leading to efficient and effective performance. This assessment was endorsed by this committee.

**5. Review and oversight of internal control:** This committee ensured that IRPC commanded an internal audit unit that was independent and reports 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 of IRPC's hiring and purchasing process to alert relevant parties and the Office of Corporate Internal Audit of irregularities for immediate corrective actions.

**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 had suitably complied.

**7. Amendment of the Audit Committee Charter:** At the request of this committee, the charter underwent amendment, with the duty and responsibility of removing the external auditor added in case the auditor becomes incompetent or negligent, or violates laws and regulations. Such amendment was approved by the Board at Meeting No. 3/2016 on March 15.

**8. Recommendation of the external auditor for 2016:** The committee reviewed, selected, nominated, and proposed fees for IRPC's external auditor that is independent by reviewing the qualifications, caliber, and past performances. This year it nominated as the external auditor PricewaterhouseCoopers ABAS Ltd. for the Board's endorsement and the shareholders' approval.

On the whole, 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 it 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. Songpope Polachan)**

Chairman, Audit Committee



# INTERNAL CONTROL

## Summary of the Board's views

At Meeting No. 1/2560 (2017) of January 24, 2017, attended by independent directors and the Audit Committee, the Board assessed IRPC's internal control system by interviewing the management and the Office of Corporate Internal Audit and examined the management-prepared assessment form. The system's components, namely the control environment, risk assessment, control activities, information and communication, and monitoring activities, were found adequate and suitable, with enough personnel in place for efficient system implementation. Besides, its internal control system monitored and controlled subsidiaries' businesses to prevent the properties of IRPC and subsidiaries from abuse or unauthorized use by directors or executives, and adequately prevented transactions with potential conflicts and related parties. The Board also viewed other internal controls as adequate.

This year the Board considered the company's internal control management essentially in line with COSO (The Committee of Sponsoring Organizations of the Treadway Commission) in the following aspects.

### 1. Control environment

The Board and the management advocated a corporate culture emphasis on the code of business conduct and corporate governance in line with its vision and missions, complete with a sound and suitable internal-control environment:

- The Board remained independent of the management and looked after the overall business by commenting on IRPC's strategic directions for guiding its business plan and work plan formulation. It also regularly tracked corporate performance and the performance of subcommittees to ensure that IRPC's business achieved its goals.
- The Board and the management defined a corporate governance policy; a compliance policy to ensure proper compliance with laws and regulations; an internal control policy; written guidelines for anti-corruption for directors, executives, and employees, requiring all to be responsible for internal control. To this end, IRPC regularly reminded all its employees of such policies.
- IRPC revised its corporate governance manual to include the anti-corruption policy and relevant measures along with decision guidelines concerning its code of business conduct and treatment of stakeholders.
- IRPC structured itself as business groups and business lines to enable efficient corporate management and uniform business conduct coupled with segregation of duties for critical segments for checks and balances.
- IRPC set qualifications for individual positions as criteria for nominating and developing personnel, key succession plans, and systematic, standardized performance assessment processes to reward and inspire work efficiency.

### 2. Risk Assessment

Valuing risk management to ensure short-term and long-term goal achievement, the Board and the management instituted a Board-appointed Risk Management Committee and a President-appointed Risk Management Steering Committee. These committees steered risk management practices properly and efficiently, as well as implemented concrete risk management to ensure corporate objective achievement. Below is the management approach.

- IRPC defined a company-wide risk management scope under ISO 31000-Risk Management and COSO Enterprise Risk Management and defined a risk management policy for guiding risks potentially compromising IRPC's achievement of objectives
- IRPC conducted risk management across the corporation with due regard for changes in internal and external factors as well as the probability of fraud and corruption. It also defined an approach for risk management to manageable levels. In place was a process for monthly risk revision and monitoring against plans. It is the responsibility of all units to manage risks to acceptable levels.
- IRPC introduced KRIs (key risk indicators) to track changes in various factors and defined additional measures to tackle such changes efficiently and promptly.

### 3. Control Activities

IRPC defined efficient and effective control activities to lower risks of compromised achievement of its objectives as follows.

- IRPC defined control activities with due regard for internal control principles, including segregation of duties; having policies and practical guidelines concerning engagement in transactions of possible conflicts of interest along with transactions that are transparent, auditable, and fair; and transaction approval with due regard for IRPC's optimal interest.
- IRPC defined IT security control processes in line with ISO 27001 (Information Security Management) to ensure efficient and effective corporate information security systems
- In place were written rules, policies, requirements, and job manuals together with clearly defined authority scopes, job duties at each level, and work procedures for guidelines. Performance verification was in place to conform to these rules, policies, requirements, and manuals.
- IRPC developed CCMS (Continuous Control Monitoring System) for procurement/hiring and payment processes to constantly and efficiently aid the monitoring and detection of irregularities in line with sound segregation of duties.

### 4. Information & Communication

IRPC valued the quality of information and communication, which critically supported effective internal control under the following ICT management guidelines.

- In place were data confidentiality setting, guidelines for storage of important documents and controlled documents, as well as internal and external data supporting operation, to ensure that important information related to corporate businesses are factual, complete, adequate, and timely.
- IRPC properly communicated with the Board, the management, employees and stakeholders, essentially about company performance. Meeting documents were sent to the Board ahead of meetings for adequate study.
- IRPC instituted several internal communication channels, namely Town Hall meetings between the management and employees, intranet communication, and email communication.
- Several external communication channels were in place, including the company website, email, Facebook. In place was a directly responsible unit for regular disclosure of information to stakeholders.
- IRPC put in place complaint-filing channels and defined a clear whistleblower system to ensure employees and external parties that such complaints will be transparently, honestly, justly, and confidentially handled within due time.

### 5. Monitoring Activities

IRPC commanded a process for monitoring and assessing the adequacy of internal control and defined a remedial approach to ensure efficient and effective internal control in the following ways.

- Annually, IRPC assessed corporate and process internal control through control self-assessment through its internal control unit, which reviewed assessment adequacy and suitability while providing advice on remedial approach formulation for identified shortcomings. It also put in place a process for the reporting of shortcomings for prompt acknowledgment of the management, in addition to a monitoring process to ensure effective, timely remedy.
- The Office of Corporate Internal Audit, an independent unit reporting to the Audit Committee, reviewed and assessed the effectiveness of internal control for various activities under the audit plans approved by the Audit Committee. These plans aligned with IRPC's strategic directions and critical risks facing IRPC's businesses. The office also provided recommendations for greater internal control efficiency and effectiveness by informing the management of remedial actions, reporting to the Audit Committee audit findings and outcomes of monitoring remedial actions to completion.



(Mr. Tevin Vongvanich)  
Chairman

## 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), with (2) Mr. Somnuk Bomrungsalee and (3) Mr. Chavalit Punthong as members. The committee met a total of five times, executing their Board-assigned tasks thoroughly and transparently, coupled with the recognition that they represented the shareholders and must proceed fairly and in the best interests of the shareholders and other stakeholders, as has always been its practice

This year the committee proceeded more cautiously and completely by using supporting data that are more diverse in all aspects for directors' nomination and for setting the compensation of directors and the President. It expressed views, deliberation, comments, and reference data, seen in clear and concrete proposals provided to the Board. As a result, the Board endorsed the committee's assorted proposals, evident in the newsletters sent to the shareholders through SET's channel this year

In nominating directors, apart from using all processes and deliberation criteria stated in the charter (under Management Structure (page 80)), The committee scrutinized the ability of potential directors to address its business strategies together with the experience and clear acceptability in corporate governance. To this end, track records and roles in forging confidence among stakeholders, coupled with qualifications for the Director Pool of the Ministry of Finance, came under scrutiny. Also reviewed was the nomination of independent directors to give the Board composition a suitable proportion of independent directors. This year all Board directors did perform their duties to the best of their ability and contributed to their oversight of IRPC so that goals might be achieved in both performance outcomes and transparent, sustainable corporation.

In reviewing the President's performance composition and goals, his performance this year, and his compensation for 2017 for the Board's consideration, the committee applied all factors with fairness, whether in setting compensation components or in performance assessment conclusion-including IRPC's overall performance, corporate KPIs, factors supporting sustainable growth, corporate image, social and community responsibility achieved with transparent and truly beneficial practices.

In reviewing the compensation of directors and committees, the committee proposed the previous compensation figures approved by the shareholders in 2006, still intact today. Directors' bonuses were carefully reviewed by benchmarking them with past percentages of the profits approved by the shareholders. This was examined in parallel with dividend payout rates, dividend yields, and Board performance assessment this year, which was superior to those of last year.

This coming year, the Nomination and Remuneration Committee plans to develop its task performance and assessment for greater clarity. It will remain committed to performing its tasks transparently and fully efficiently to bring about fairness and the best



(Mr. Woothisarn Tanchai)

Chairman, Nomination and Remuneration Committee

## MESSAGE FROM THE CHAIRMAN, RISK MANAGEMENT COMMITTEE

### Dear Shareholders,

IRPC Public Company Limited recognizes and highly values efficient, effective risk management across the corporation to assure stakeholders of its ability to achieve goals and the prevention and mitigation of potential losses under its business circumstances and uncertainty. The Risk Management Committee's duties and responsibilities are to set a risk management policy, steer corporate risk management, and provide guidance to manage risks to acceptable levels. The current committee is chaired by Mr. Nuttachat Charuchinda, with Mr. Chansin Treenuchagron, Mr. Ekniti Nitithanprapas, and Mr. Sukrit Surabotsopon as members. These qualified, competent

1. Steered and reviewed corporate risk management, consisting of risk identification, analysis, and assessment; setting risk management measures; and monitoring and reviewing risk management outcomes every quarter to keep risks manageable and achieve goals
2. Provided guidance for corporate risk management to the Risk Management Steering Committee and the Supply Chain and Financial Risk Management Committee for efficient implementation
3. Reviewed and commented on this year's corporate risks before tabling them for the Board's endorsement by ensuring that such risks aligned with business directions, strategies, and corporate goals under prevailing circumstances
4. Reviewed its own charter and added the mandate for screening significant investment projects
5. Reviewed corporate KPIs for the year before tabling them for the Board's approval
6. Reported its performance for the Board's acknowledgment every quarter

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



(Mr. Nuttachat Charuchinda)

Chairman, Risk Management Committee

## MESSAGE FROM THE CHAIRMAN, CORPORATE GOVERNANCE COMMITTEE

### Dear Shareholders,

The Board of Directors of IRPC appointed a Corporate Governance Committee to propose guidance for corporate governance (CG) for its consideration. Its mandates are to steer and monitor the management's compliance with CG so that IRPC may be a transparent and auditable corporation that fosters confidence and trust among all stakeholders, and to promote the Board's mission and guidance for its performance so that the Board may exemplify CG, anti-corruption, and anti-bribery. This year the committee steered IRPC's complete compliance with annual CG plans, a roadmap to the long-term goal of good corporate citizenship. Details appear under Corporate Governance Report on page 42. Below are major development approaches.

1. Look after shareholders' rights and equal treatment of shareholders by allowing minor shareholders to propose agenda items and nominate directors for election in advance
2. Plan, define strategies, and set a transparent, auditable business policy, for which IRPC was named a transparent organization for this year by the Office of the National Anti-Corruption Commission
3. Train directors, the management, and employees on CG knowledge and understanding, including anti-corruption (work discretion under ethics)
4. Manage projects and activities to nurture business ethics among executives and employees under the Board's policy, cascaded to the President for uniform compliance (Tone at the Top), including the IRPC CG Day Project
5. Amend and improve the efficiency of the internal control system. Audit business operation against CG by optimizing the coordination of GRC between governance risks and compliance
6. Assess corruption risks and compliance risks while setting a policy against corruption and bribery for IRPC and affiliates
7. Forge an IRPC anti-corruption network across the supply chain, covering customers, business partners, and affiliates
8. Forge networks or alliances with business entities and stakeholders in taking the role of a global corporate citizen, including UNGC Network Thailand (GCNT)
9. Nurture engagement with stakeholders and fairly address all stakeholders' needs and expectations.

In making these moves, IRPC followed the plans and efficiently achieved goals, evident in survey and assessment outcomes, acceptance, and top awards presented by leading domestic and international institutions, including the five-emblem CGR (Corporate Governance Report of Thai Listed Companies) acclaim granted by IOD; SET Sustainability Award 2016, presented by SET; Certificate of ESG 100 Company, presented by Thaipat Institute; and DJSI (Dow Jones Sustainability Indices) membership of the Oil & Gas Refining and Marketing for three consecutive years.

Despite international acceptance of IRPC's CG system, equipped with concrete, efficient practices, the committee is still committed to further improvement and stringent implementation to become a role model for business under sustainable development. Such achievement would support the Thai capital market's CG standards, IRPC's own growth, and confidence among shareholders, investors, and all stakeholders. Finally, being a sustainable SET stock represents another achievement in addition to IRPC's progress in direction and its goal of good corporate citizenship soon.



**(Mr. Anusorn Sangnimnuan)**

Chairman, Corporate Governance Committee



# CORPORATE GOVERNANCE REPORT

Constantly valuing and complying with corporate governance of international standards and alignment with SET's policy and the ASEAN Corporate Governance Scorecard (ASEAN CG Scorecard), IRPC has earned decent assessment scores and awards for CG practices domestically and internationally, grouped by aspect as seen below.

## Corporate governance

1. NACC Integrity Award 2016, an award presented by the Office of the National Anti-Corruption Commission
2. Five-emblem assessment recognition by the 2016 CGR project, under the Thai IOD for the eighth year in a row. This year, incidentally, IOD made its assessment more stringent in line with the ASEAN CG Scorecard
3. Full (100) marks for its AGM 2016, assessed by the Thai Investors Association
4. Best CEO under the "IAA Award for Listed Companies 2015/2016" (Resources group), presented by the Investment Analysts Association
5. Best Investor Relations Award, presented by SET
6. Corporate Governance Asia Recognition Award 2016: Best Investor Relations by Company, presented by the Corporate Governance Asia journal for the third consecutive year, citing transparent information disclosure to investors with fairness to stakeholders and in line with corporate governance
7. "Golden Peacock Global Award for Excellence in Corporate Governance 2016", presented by the Institute of Directors (IOD) of India for the fourth time in recognition of its outstanding corporate governance practices.

## Sustainable management

1. A third consecutive year of DJSI (Dow Jones Sustainability Indices) membership for the Emerging Market of the Oil & Gas Refining and Marketing group for 2016



2. SET Sustainability Award 2016 (given to selected listed companies)
3. Thailand Sustainable Investment 2016 acclaim for of its exemplary outstanding sustainable business conduct while supporting social engagement
4. Sustainability Report Award 2016 (Outstanding) granted by SET.

## Anti-corruption

- CAC membership certification of Thailand's Collective Action Coalition against Corruption Private Sector on April 4, 2014. IRPC gained certification of its policy and complete practices against fraud in the corporation as required by CAC, for which recertification is due every three years. Today, with all documents submitted under new regulations on December 15, 2016, IRPC is undergoing recertification.

## Socio-environmental responsibility

1. Certificate of ESG 100 Company (Resources group) for 2016, granted by Thaipat Institute for the value given to Environmental Social and Governance (ESG). IRPC is in the ESG100 elite group for a second consecutive year.
2. EIT-CSR Award plaque of honor, presented by the prime minister for IRPC's socio-environmental responsibility activities by state enterprises and operators, reviewed by the Right and Code of Conduct Panel of the Engineering Institute of Thailand



SET Sustainability Awards 2016

3. Asia Responsible Entrepreneurship Award 2016 (AREA Award 2016) for Social Empowerment for the Lam Sai Yong Model Project (Sustainable Drought-Solving), hosted by Enterprise Asia, an independent entity supporting business caliber development

4. "Golden Peacock Global Award for Social Responsibility 2016", presented by the Institute of Directors (IOD) of India.

### Corporate Governance Policy

To promote IRPC as a business concern marked by efficiency, CG, and operational excellence focusing on optimizing benefits for the shareholders and with due regard for stakeholders as a whole while remaining righteous in business conduct, free of fraud, transparent, and open to scrutiny, the Board has defined a CG policy for its Board of Directors, executives, and employees to observe as practical guidelines, detailed as follows:

1. The Board is committed to applying the key CG principles (CREATE) as guidelines for IRPC's operation, namely: **C**reation of Long Term Value, **R**esponsibility, **E**quitable Treatment, **A**ccountability, **T**ransparency, **E**thics
2. The Board is dedicated, responsible, and independent, with clear segregation of roles between the Chairman and the President

3. The Board plays a key role in defining IRPC's vision and key strategies, policies, and plans, taking into account risk factors and laying down suitable management approaches while ensuring that accounting, financial, and audit systems are credible

4. The Board plays a key role in defining an anti-corruption policy and key relevant mechanisms so as to prevent fraud and represent IRPC's practical guidelines, leading to a corporate culture. The Board steers the prevention and resolution of conflicts of interest and connected transactions to ensure fair business conduct.

5. The Board must lead in ethics and observance of IRPC's CG approach

6. The Board may appoint suitable ad hoc committees to support its deliberation of key matters

7. The Board must hold annual self-assessment to frame the scrutiny and improvement of its performance, including a suitable third-party assessment, such as every three years.

8. The Board sets IRPC's Code of Conduct for itself, executives, staff and employees to apply as their practical guidelines in tandem with IRPC's regulations

9. The Board sets a policy on information disclosure to ensure that IRPC's shareholders and stakeholders have equal access to sufficient, reliable, and timely information disclosure, both financial and non-financial, with Corporate Communications and Investors Relations providing information to the public and investors.

10. IRPC's shareholders and stakeholders are entitled to fair treatment and equal access to information, as well as suitable communication channels with IRPC

11. The Board sets a succession policy and plans to ensure that a personnel recruitment system is in place for all key executive positions along with a transparent and fair recruitment process.

The Board is confident that good, clear, and transparent CG system will enhance the trust among the shareholders, investors, and stakeholders. In 2016, the Board followed the CG principles in line with the criteria of SET's Corporate Governance Report of Thai Listed Companies (CGR) 2016, and the Asean CG Scorecard in five major elements as follows:

## 1. Shareholders' Rights

IRPC supported, promoted and facilitated shareholders' exercise of their rights to ensure that it was completely and equally protected under the law, and information disclosed to shareholders is accurate, complete, timely, and transparent.

At the 2016 AGM, shareholders exercised their rights as follows:

### Before the Meeting

- IRPC gave the opportunity for one or more shareholders with a combined 4% or more of the eligible voting shares to propose agenda items for the 2016 AGM and nominate directors in advance from September 25 to December 31, 2015. No additional agenda nor nomination was proposed. For the 2017 AGM, the shareholders can propose agenda items and nominate directors in advance between September 20, 2016, and January 31, 2017.

- IRPC disclosed the resolution of the Board at the Meeting No. 2/2016 on February 9, 2016, which set the record date for Tuesday, February 23, 2016, and list shareholders in accordance with Article 225 of the Securities and Exchange Act by closing the registration book on Wednesday, February 24, 2016, for the right to attend the 2016 AGM and to receive dividends. The date for the 2016 AGM was set for Friday April 1, 2016, starting 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. The resolutions were made public via SET's information distribution system on the date of the resolution.

- IRPC posted the complete meeting notice for the 2016 AGM with the relevant attachments and a proxy form to facilitate those that could not attend by themselves, map of the meeting venue, contact number for any inquiries, in Thai and English on IRPC website: [www.irpc.co.th](http://www.irpc.co.th), on March 1, 2016, or 30 days before the meeting date. Thailand Securities Depository Co., Ltd. (TSD), mailed the AGM notice to shareholders on March 11, 2016, or 21 days before the meeting, to allow them sufficient time to study the agenda in advance. Announcement of the 2016 AGM was published in Thai and English newspapers (Kao Hoon and Bangkok Post) for three consecutive days before the meeting date. Details of the 2016 AGM were also published in IRPC Newsletter Volume 18/2016 and mailed to the shareholders with the meeting notice, meeting documents, and attachments.

- Quality of Meeting Notice. IRPC boasted eight agenda items this year. There was no agenda item for adoption of the minutes of the previous meeting since IRPC had sent them to the shareholders on April 22-30, 2015, for their review and objection or amendment. No shareholder objected to the minutes, and it was automatically adopted. For each agenda item, objectives and justification together with the opinion of the Board were stated as highlighted below:



- Acknowledgement of the 2015 performance and approval of IRPC's 2015 financial statements, audited and unconditionally certified by an authorized external auditor.
- Approval of dividend payment for the 2015 performance. IRPC disclosed its dividend policy and successfully maintained suitable financial liquidity in keeping with its business, with categories and sources of retained earnings from which the dividends were to be paid, the proposed dividend rate, the dividend payment date, complete with clear rationale and consideration data. Details appear on page 2 of the 2016 AGM meeting notice.
- Appointment of directors to replace those who completed their terms, with complete profiles (name, last name, age, biography, education, career profile, and the number of companies in which each nominee served as director) in full details so that the shareholders may have enough data for their consideration of suitable directors. Details appear on pages 17-26 of the 2016 AGM meeting notice.
- Approval of directors' compensation for 2016, for which IRPC had proposed a policy for directors' compensation (namely retention fee, meeting fee, bonus). No other compensation or benefits were given. Details appear on pages 6-7 of the 2016 AGM meeting notice.
- Appointment of the external auditor for 2016 and audit fee-setting, stating the detailed profile of the external auditor (namely auditors' names, company, experience and ability, independence, audit fees and non-audit fees together with other services). These details were given in full and clearly on page 7-8 of the 2016 AGM meeting notice.
- Approval of the transfer of all operations from Thai ABS Co., Ltd., which, like IRPC, operates in the petrochemical business, which made it convenient for the merger. All the properties, liabilities, and employees of Thai ABS would be transferred to IRPC, which would result in a decrease in the structure and operating cost of Thai ABS, making it more competitive in the market. The merger through a business transfer was also tax-exempted, such as juristic person income tax, valued-added





tax, specific business taxes, under article 74 (1) (c) of the Revenue Code. With the approval of the AGM, IRPC proceeded with the resolution and, with the merger accomplished, informed shareholders via SET's channel on August 1, 2016.

### Meeting Day

- IRPC's 2016 AGM was held on Friday, April 1, 2016, 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 four consecutive years.
- The meeting was held at a convenient meeting venue for public transport (BTS and buses) with spacious parking lots and efficient security, as well as officers to attend to the needs and registration. Enough registration points were arranged, with registration starting two hours ahead of the meeting as informed to the shareholders in advance in the notice. The Barcode system was leveraged during registration

and vote-counting for greater efficiency, accuracy, and speed. IRPC facilitated proxy-giving by having available free duty stamps for the legal completeness of documents. IRPC staged an exhibition about its significant workplans and operation, such as the Everest Project, so that shareholders could learn about IRPC's strategies and development plans to become an excellence and sustainable organization and to create trust in and understanding of shareholders. An IRPC Innovation Product Bazaar also introduced products from environmentally friendly plastics, such as travelling luggage produced from Green ABS with natural rubber, or plastic food-packing boxes using natural color from fruits and vegetables for maximum safety. The bazaar also provided a channel for manufacturers, IRPC's customers, to directly meet their consumers,

- The AGM began as scheduled, with the Chairman of the Board serving as meeting chairman. In attendance were the sub-committee chairs, directors, and the President along with senior executives and the Company Secretary. (Full details appear in the AGM minutes, disclosed on IRPC's website). A total of 15 directors (or 100% of the Board) attended the AGM.



- IRPC requested an independent legal adviser from Weerawong Chinnawat and Phiangphanor Co., Ltd. (Ms. Phiangphanor Boonklum and company) to ensure that the AGM was legitimate and provide legal information as needed. The external auditor in attendance at the AGM was Mr. Wichien Kingmontree, CPA No. 3977, PriceWaterhouseCoopersABS (PWC). IRPC arranged for vote-verifiers who observed and served as the neutral party in vote-tallying, namely Ms. Ratchada Khlongprong, a volunteer from the shareholders in attendance, and one representative from the Thai Investors Association.
- Before starting deliberation of the meeting agenda, the Chairman clearly informed the meeting about the voting method and vote-tallying. IRPC issued only one class of shares, for which one share equals one vote.
- On the agenda of directors' appointment, IRPC allowed the shareholders to vote for directors individually, with individual names on the ballot. In line with its good practices, directors with vested interests left the meeting on the agenda items in

question. For this meeting, four such directors, namely Mr. Pramual Chanpong, Mr. Chavalit Punthong, Mr. Songpope Polachan, and Mr. Triumph Jalichandra, left the meeting 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, allocating enough time and asking related directors to provide assorted data to them until no further questions were asked. He ensured that these questions, answers, and comments were included in the minutes for those who missed the AGM. IRPC arranged for ballot-casting, ensured that all ballots were collected, and inspected the vote outcomes and recording of votes from the ballots. To this end, for greater efficiency and speed, the Barcode system was used to compile outcomes. Meeting resolutions were spelled out for every agenda item, complete with the numbers of yes, no, or abstained votes, and displayed on the projector for transparency.

- The Chairman conducted the meeting strictly by the sequence given in the meeting notice. No other agenda items were added, apart from what appeared in the meeting notice.

### After the Meeting

- IRPC disclosed the resolutions of the 2016 AGM for each agenda item in Thai and English via IRPC's website and the SET Portal on the meeting date (April 1, 2016) after the meeting.
- Quality of the minutes. The complete minutes included the contents, list of directors and senior executives in attendance, shareholders' questions along with responses by directors and executives, and meeting resolutions and voting outcomes for each agenda item, complete with details of the yes, no, and abstained votes on each voting agenda item.
- IRPC made available the minutes of the 2016 AGM on SET's and IRPC's websites on April 12, 2016 (12 days after the meeting). The IRPC Newsletter, Special Issue, Volume 20/2016, was published and mailed to all shareholders on April 20, 2016, notifying them to forward any amendment or points of dispute to the



Company Secretary by May 31, 2016. At the close of the period, no shareholder objected to the minutes, which were automatically adopted.

## 2. Equitable Treatment of Shareholders

IRPC pledges equitable treatment of all shareholders together with strict compliance with corporate governance principles. The 2016 operation can be summarized as follows:

- IRPC issued only one class of shares.
- IRPC gave the opportunity for one or more shareholders with a combined 4% or more of the eligible voting shares to propose agenda items and nominate directors in advance from September 25 to December 31, 2015. To this end, IRPC publicized clear criteria and a procedure on its website and notified shareholders via SET's news channel.
- IRPC disseminated the documents accompanying the AGM on its website in Thai complete with the English translation 30 days in advance and mailed them to all shareholders 21 days in advance (March 11, 2016).
- IRPC sent proxy forms (Form A and Form B) together with the shareholders' meeting notices to those who could not attend in person, stating the documents, evidence, advice, and proxy procedure to accommodate the shareholders in their preparation and their proxies in attending the meeting. Shareholders could assign proxies to attend the meeting and vote in their place under one share per vote by filling in the proxy form as explained in detail and without complicated criteria in the proxy procedure. Moreover, they could download the proxy forms (Form A, B and C) from the website. IRPC submitted the names of three independent directors without vested interests in the meeting as proxies for shareholders, namely 1) Mr. Cherdpong Siriwit, 2) Mr. Woothisarn Tanchai, and 3) Mr. Watcharakiti Watcharothai.
- IRPC stated a policy of no trading of securities 45 days ahead of the disclosure of financial statements and two days after such disclosure and ensured the directors' and the executives' strict compliance with SEC's criteria.

- IRPC devised a written policy and guidelines to keep and prevent the use of inside information and notified all employees for implementation and specified that directors and executives were legally responsible for reporting portfolios and regularly submitting a report to the directors for acknowledgment. In 2016, IRPC's directors and executives were not reproached or warned by SET on share transactions using inside information.

- IRPC prepared a report of security holding by directors and executives and specified that the directors and the executives must accurately and completely comply with SET's and SEC's rules and regulations. IRPC submitted this report to the monthly meetings of the Board for acknowledgment.

IRPC has never received such warning from the regulators. In 2016, the Board together held no more than 25% of IRPC's issued and paid-up shares, with a total shareholding of 0.05115% (as of December 31, 2016) according to SET's criteria.

- On changing or taking new positions by directors, the latest information must be submitted to SEC for acknowledgment.
- The Board approved connected and related-party transactions, that was not normal business and procured with comparison with other companies, the Audit Committee screened them before submitting it to the Board for consideration based on transparency and fairness for all concerned. taking into account IRPC's best interests and reported/disclosed the transactions in compliance with SET's regulations based on transparency in the annual financial report.
- IRPC did not provide financial assistance to those companies that were not its subsidiaries. There was neither cross-sharing in IRPC's group nor share repurchasing.
- IRPC stipulated that all executives and all employees, as well as subsidiaries, must report all transactions of possible conflicts of interest with IRPC via the on-line system for the second consecutive year, apart from the report by the directors and executives as set by SEC to raise the awareness of transparent, fraud-free operation and submitted the report to the Corporate Governance Committee.



### 3. Roles of Stakeholders

IRPC values the rights of all stakeholders by clearly devising a policy and treatment of stakeholders in its Corporate Governance Handbook and as part of the strategic plan in the corporate business operation. IRPC determines KPIs for clear performance assessment. The stakeholders will be protected fairly, including internal stakeholders, namely employees, executives, subsidiaries, or external stakeholders.

#### Treatment of Stakeholders

##### Shareholders/Investors

IRPC is committed to business operation that results in good performance, secure growth, competitiveness,

taking into account major risks on current and future businesses to increase long-term value for shareholders. To this end, IRPC is responsible for disclosing information based on transparency and fairness, forging good relationship, and focusing on communication with shareholders/investors via numerous channels and activities, such as:

- Communication via printed media, radio, TV, on-line media, activities with stakeholders and other public relations channels such as quarterly newsletters to keep shareholders informed of IRPC's operations and major activities.
- Regular meetings with investors and analysts in Thailand and abroad (detail in Information Disclosure and Transparency).
- Shareholders' visit to IRPC's facilities in Rayong on November 10, 2016.
- Activity with shareholders to raise awareness of road safety by supplying 500 traffic cones under IRPC's POLIMAXX brand made of 65% polymers and 35% natural rubber to Rayong Provincial Police for traffic in Rayong as appropriate.
- Activity for investors' knowledge with the President's lecture on the in-depth petrochemical shares and the petroleum overview on January 8-10, 2016, in Phuket.



- Disclosure of information to the public via news conferences and assorted media all year round.
- IRPC prepared an Integrated Report in conformity to the IR Framework focusing on the treatment of stakeholders. The report was easy readable and suitable for communication with extensive target groups and publicized on IRPC's website.

### Customers/Consumers

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



- IRPC in corporate with partners has set up the booth in Energy Innovation Fair that organized by the Ministry of Energy and the National Research Council of Thailand. It held at Khlong Phadung Krung Kasem floating market nearby the Government House. This event gives Thai inventors the opportunity to showcase and sell their innovations.

- The Company along with domestic agents attended K Fair 2016 Trade Fair, the world's premier trade fair for plastics and rubber, Düsseldorf - Germany and Italy from October 21-28, 2016 to enhance the opportunity to present innovative product in the petrochemical industry.

- IRPC organized an anti-corruption activity under the "IRPC Anti-Corruption Network" on July 27 for IRPC's employees, customers, and business partners. IRPC was honored to have Mr. Kulveeh Janvatanavit (adviser to CAC), an expert from IOD to deliver a lecture on the definition of "corruption", the impact of corruption on Thailand, the role of CAC, and procedures in announcing the intention and application for CAC membership, and activities between employees, customers, and business partners concerning anti-corruption pledging. Moreover, after the anti-corruption seminar, IRPC provided consultation, supported, and followed up on updates of customers and business partners interested in submitting the application form for CAC membership.

- IRPC in coordination with IOD accommodated 25 companies who submitted the application form announcing their intention and applying for CAC membership. IRPC planned to provide counsel, advice, assistance to the customers/business partners for self-assessment to be certified as CAC members.

### Business partners

IRPC is committed to the treatment of all business partners based on equality and fairness in line with business competition based on honesty, transparency, taking into account common benefit, developing and maintaining sustainable relationship with business partners, and confidence in one another. IRPC adheres to procurement regulations with clear procedures and practice and devises the policy of procurement excellence under the EVEREST Project. The advisor applies best practices in the organization on the treatment of business partners based on laws and procurement contracts in line with the standards recognized in leading industries, anti-corruption, and money-laundering prevention. IRPC registered the Approved Vendors, Manufacturers, and a Contractor List with efficient, accountable procurement and Procurement Web Portal, which is the channel for



communicating information and news about procurement, such as bidding, e-Sourcing (RFP, RFQ), evaluation (AVL, ACL), which will facilitate business partners with convenience, speed, transparency, and accountability in all procedures. IRPC also organizes activities to forge good relations with business partners, such as:

- IRPC invited business partners to the “PTT Group CG Day 2016” activity, organized by six listed companies under PTT Group on August 18 to promote corporate governance in the whole supply chain and fight corruption with stakeholders.
- IRPC organized an anti-corruption seminar under the “IRPC Anti-Corruption Network” on July 27 for IRPC’s employees, customers, and business partners.
- IRPC stated a policy of refusal to receive or give gifts during the New Year season or other occasions involving business partners, in compliance with IRPC’s corporate governance principles and anti-corruption policy. IRPC has sent letters to all business partners for the acknowledgment of its policy.

### Competitors

IRPC manages its business under a code of conduct and ethics on the treatment of competitors. It has a control system to ensure that there is no means to seek or use information that represents competitors’ trade secrets through dishonest means. IRPC does not tarnish competitors’ reputation without factual data.



### Creditors

IRPC devises a policy and practices on the treatment of creditors, especially guarantee conditions, capital management, and clear non-compliance with contracts by striving to strictly respect contracts under creditors’ stipulations.

### Employees

IRPC stresses the importance of the equitable treatment of all employees without taking into account gender, nationality, race, religion, or belief. The employees constitute a major driver of the organization for business success. Therefore, IRPC promotes the continuous development of employees’ skills and ability with goals set for human resource excellence under the EVEREST Project to ensure that the employees are equipped with potential compared to the standard of other leading companies in the same industry.



*At the 2016 AGM, IRPC provided a venue for its direct customers to advertise their environmentally friendly polymers*



IRPC determines proper, fair compensation and welfare to retain quality employees in the long run, fosters a good workplace culture and environment, focuses on occupational rights, safety, and health, and workplace equipment, and respects employees' personal rights. IRPC devises numerous development methods, such as:

- IRPC instills i SPIRIT, started in 2015 as the organization's new set of core values to ensure employees' implementation in order to drive the different units toward goals.
- IRPC is in the process of developing new DNAs for employees under the EVEREST Project in the hope that the organization will overcome obstacles and move forward with security and sustainability, such as:

- (1) Cross-Functional
- (2) Taking Ownership
- (3) Results-Oriented
- (4) How to Solve the Problem
- (5) Challenge the way we work everyday
- (6) Supporting Team Member
- (7) Performance-Based Rewards
- (8) Promise and Deliver

- IRPC conducts an annual survey of employee engagement. The survey results will be used to formulate work plans across the organization to increase employee engagement through activities, continuously implement work plans, and incorporate into the KPIs of the executives.

- IRPC sets up a performance management system (PMS) of employees with specific sets of KPIs for thorough, explicable, and fair performance measurement. A salary structure compatible with similar industries is adopted to retain quality employees. The system also provides promotion criteria which are fair and explicable to all, with specific sets of knowledge and capability for each job which can be used to design proper training and development programs for job holders.

- Knowledge and capability development
  - Defined Human Resource policy by developing Human Resource Management Policies and Manual for employee to better understand the policies, procedures and regulations including employees' remunerations.



- Developed employees capability and forged learning process with by developing a manual for learning and development frame practices. The Company will set the course based on the employees and managements' training needs such as Management, Safety & Environment, Quality & Productivity and Technical including the courses in business code of conduct and anti-corruption in relevant to the Company's policies. Moreover, the Company required supervisors and employees to jointly prepare Individual Development Plans (IDP) to fit individual needs for development. The company set the average training hours per employee per year for each level which disclosed in SD report.
- Communication and activities with the employees
  - "The President meets Employees" activities are held quarterly and whenever there is a critical need for communication. The general topics are sharing of general work performance, policies, and business directions for better understanding, questioning, and information exchange. The activity is held in a room with video broadcast to all operating offices for two-way communication via the IRPC intranet.
  - With full intention on the rights and benefits of employees, the President always chairs the Employee Committee to efficiently develop resolutions between the employer and employees on any issues in a timely manner, as well as supporting activities of IRPC's eight labor unions.
- The President, executives, and employees attended the annual retirement party to honor and inspire employees who had devoted themselves to IRPC and foster good models for the corporate culture.
- Compensation and welfare to employees
  - IRPC develops a compensation policy conforming to work performance in the short term and the long term. The review process is appraised with assessment of the agreed KPIs at the organization, business unit, and individual levels for the complete year against its respective competency. A variation bonus is granted to senior executives in proportion to specific achievements.
  - IRPC has modified its welfare structure to better retain quality employees, promote, and upgrade the quality of life of all employees. Some of these welfare benefits are medical fees, housing rent, and non-resident allowances.
  - IRPC has formulated a provident fund for the long-term welfare for employees, with a higher corporate contribution than the legal requirement and exponential to service years. Employees are given information and training together with options for appropriate investment depending on the individual's need for maximum return and investment flexibility.
  - IRPC organized an annual recognition service year awards for employees with 10, 20, and 30 service years.
  - IRPC constantly promotes and fosters awareness among its workforce of the recognition of commercial patents and intellectual property. Several campaigns were organized to remind employees to fully comply with the Copyright Act B.E. 2537 (1994). IRPC also published its policy on standard practices for its computer machines and computing network, as well as good operation practices to prevent employees from using illegal computer programs and software. Periodic reviews and monitoring prevent infringement.
  - An internal audit is tasked to monitor and audit any violation on the use of copyrights owned by IRPC, and to protect and optimize IRPC's intellectual properties.



## Society and Community

IRPC realizes that it is fully incorporated into communities and society, with the responsibility of assisting them, supporting community services, and developing a sustainable quality of life. The community and social programs on public health, education, religion, culture, and the quality of life can be summarized as follows:

- IRPC, in cooperation with 76 surrounding communities within five kilometers of its industrial zone, set up a “Community Health Fund Project” to efficiently take care of residents’ health and ensure that the residents in the 76 communities took part in health programs, from promotion, prevention, treatment, to rehabilitation.
- IRPC continuously managed health development programs in areas surrounding the industrial zone, including the community’s wellness through the use of a geographic information system (GIS), the Mobile Medical Clinic, IRPC’s “Pan Nam Jai clinic” (Sharing with Communities), the drinking water for community, the sports for youths, the caliber development of local administrative organizations, and stakeholders, among others.
- IRPC participated in the “CSR-DIW Continuous 2016” Project with certified 16 IRPC plants.
- IRPC prepared a “Community Relations Magazine” to publicize information, news, encourage acknowledgment, and enhance confidence among communities and society that IRPC operates business in parallel with the responsibility for communities, society, and the environment.
- IRPC, in collaboration with the Prostheses Foundation under the Patronage of HRH Princess Mother and Rayong Province provided prosthetics units for amputees in Rayong and nearby provinces between July 9-15 to honor the 70<sup>th</sup> Anniversary Celebration of His Majesty the King’s Accession to the Throne and the Celebration on the Auspicious Occasion of Her Majesty the Queen’s 7<sup>th</sup> Cycle Birthday on August 12 at IRPC Sport Complex, Rayong. There were 220 amputees who registered for prosthetics units, and 191 prosthetics units were provided to them.
- IRPC organized the “IRPC & the Legend of Mon Phra Padaeng” event on April 25 at Wat Songtham Worawihan, Phra Pradaeng District, Samut Prakan Province, to preserve the culture and traditions of



the Mon community, and forge relationship with the ethnic community around the oil depot in Phra Pradaeng. IRPC raises awareness of the employees and the community on the importance of maintaining the local culture and identity.

### Environment and Natural Resources

IRPC has developed a policy on the responsibility for the environment, natural resources, and safety. IRPC was selected by the Industrial Environment Institute of the Federation of Thai Industries as a role model for eco-industrial operations. The 2016 activities pertaining to the development of the environment, natural resources, and safety can be summarized as follows:

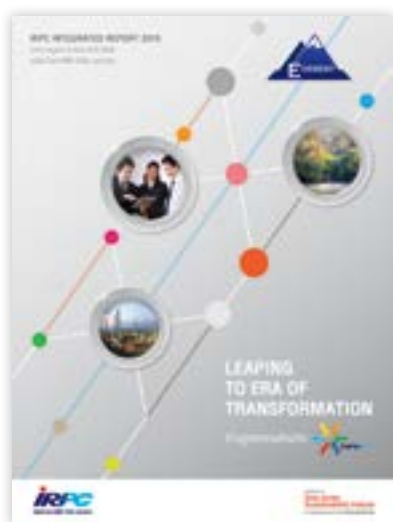
- IRPC was certified as Eco-Factory, with 11 operation units.
- IRPC promoted an environmental project entitled “Tree-Planting Project along the Roads to the Si Mahosoth Ancient City” with the Office of Natural Resource and Environmental Policy and Planning by planting trees (Bougainvilleas) along both sides of the road leading to Si Mahosoth Ancient City in Tambon Khok Pip, Amphoe Si Mahosoth, Prachin Buri Province, to increase green areas, provide relaxation for the use of bicycle tracks, improve the community’s quality of life, and promote community-friendly tourism.
- IRPC supported the “Lam Sai Yong Model” water management project by laying 1.2 kilometers of PE pipeline to transport water from a public aqueduct in Nong Yang Village, Tambon Lam Sai, Amphoe Nang Rong, Buriram Province, to the reservoirs dredged by the Royal Forest Department in the Don Jon community wood and by using solar-generated water pumps to ensure that the community had water reserved for the dry season.
- IRPC devised measures for 24-hour environment watch by measuring the quality of air, noise, and water in natural water resources and avoiding noisy processes at night, a special mobile medical clinic, and added 24-hour reception of complaints in case of emergency.

### 4. Information Disclosure and Transparency

IRPC devises a policy of disclosing complete, sufficient, accountable, regular, and timely financial

and non-financial information via different channels, such as the 56-1 Form, annual reports, IRPC website (both in Thai and in English), and the media. IRPC has set up the Investor Relations unit to coordinate between IRPC and shareholders, analysts, and other relevant persons. In 2016, IRPC conducted information disclosure as follows:

- IRPC prepared reports on its information in conformity to SEC and SET, such as:
  - Report of directors’ and executives’ vested interests, based on SEC’s criteria
  - Report of material information and financial statements via SET’s channel
  - Annual Report 2015 with IRPC’s financial statements and material operation highlights. IRPC’s financial statements were unconditionally approved by the external auditor. IRPC was never ordered by SEC and SET to rectify its financial statements.
  - Disclosure of transactions and agreements between shareholders with material impacts on other shareholders or IRPC.
- IRPC prepared reports based on international standards:
  - IRPC prepared a Corporate Sustainability Report 2015 to communicate the guidelines of management and performance outcomes in the economic, social, and environmental dimensions using the Sustainability Reporting Guidelines of the Global Reporting Initiative (GRI G.4) to ensure that the information disclosure met international standards and to assess the completeness of the contents against the core level, cross-checked by an external agency for accountability and submitted to the shareholders together with the annual report and publicized on IRPC’s website.
  - IRPC prepared and submitted a report of Communication on Progress (CoP) to the UN Global Compact as a member, committed to operating and reporting performance outcomes in compliance with the UN Global Compact, where IRPC has been a member since 2011. In 2016, IRPC upgraded reporting at the GC Advanced Level, the highest level of reporting, for the third consecutive year. An electronic report was sent



to the website of the UN Global Compact ([www.unglobalcompact.org](http://www.unglobalcompact.org)) and publicized on IRPC's website.

- IRPC prepared the Integrated Report 2015 in conformity to IR guidelines and publicized it on IRPC's website.
- IRPC disclosed material information via electronics at [www.irpc.co.th](http://www.irpc.co.th) to publicize its up-to-date news (in Thai and in Eng) such as vision, nature of business, financial statements, press releases, shareholding structure, organization structure, business group structure, information on the directors and the executives, information on investor relations, company affidavit, articles of association, memorandum of association, annual report (publicized within 120 days of the closing of the accounting year), Integrated Report, (downloadable) notice of the AGM, documents accompanying the AGM, 56-1 Form, documents presented for the AGM, analyst meeting, corporate governance policy, other activities and news on the business, the corporation's responsibilities, stewardship of stakeholders, and operation for sustainable growth.
- IRPC communicates via printed media, radio, TV, activities with stakeholders and other public relations channels, such as newsletters, to keep shareholders informed of its operation and major activities every quarter.
- IRPC communicates via a LINE Group with analysts in case of major events, which constitutes another efficient communication channel.

- Conduct conference call meeting with analysts after disclosing 2016 financial statements to SET by allowing 50 analysts to call and ask questions clearly which can be categorized as a Green Meeting.

- In 2016, there were 7 meetings.

- Direct information disclosure to shareholders, investors, analysts, reporters, and the media by the President and the executives in year-round meetings with stakeholders, such as:

- Presentation of information to investors in Thailand (7 times) and abroad (4 times)
- Analyst Meetings (4 times)
- Opportunity Day (5 times)
- Company Visits (34 times)
- Press Briefing/Press Conferences/Press Releases (17 times)
- Communication via "IRPC Newsletter" (4 times)

- Releasing correct and useful corporate information to the media such the press conference, interviews and the press releases to further disseminate to public is one of the company's priorities. Meanwhile, IRPC keeps good relationship and support to media by hosting several activities to boost understanding of the Company's vision, mission, business strategies, business outlook, progression on investment projects and CSR through seminars and academic conferences.

- A Silent Period for information relevant to IRPC's turnover for investors and analysts: During such period, IRPC makes no appointment or provide information to analysts seven days before IRPC reports its turnover to SET. Investors may study IRPC's information via IRPC's website [www.irpc.co.th](http://www.irpc.co.th) or contact IRPC's Investor Relations unit.

Tel. : 0 2649 7380

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

Fax : 0 2649 7379

## 5. Board Responsibilities

The Board of Directors consists of 15 directors in compliance with the shareholders' intention specified in IRPC's Articles of Association. It assigns the Nomination and Remuneration Committee to nominate directors under the framework set in advance without discrimination of gender, race, and religion, and submit them to the

Board for approval and submit the nominees' profiles to the shareholders for appointment at the AGM and for approval of compensation of directors. The Nomination and Remuneration Committee determines the Board Matrix in the structure of directors to encompass a proper SET-defined ratio of independent directors to accommodate IRPC's efficient operation of large-scale petroleum and petrochemical industries amid high competition.

In 2016, the Board convened 12 meetings, with 97% of the Board members and over 75% of directors attending the meetings (detail of individual directors' meeting attendances on page 83). The directors considered the trend of the industry, ability, competency, business risks, opportunities and limitations of IRPC. The President conveyed directions and key policies to the executives to formulate strategic plans in each line of work to support IRPC's vision. The Board convened a STS meeting to assess business risks affecting IRPC's finance, ability of business operation, reputation, and image, and devised a Five year Strategic Plan: Business and Budget Plan: Core Mission for 2016. At the same time, KPIs were devised to measure successes and monitor or report operation within an appropriate timeframe of each line of work, and annual review of strategic plans.

The Board has periodically improved corporate governance on IOD's advice in compliance with CGR as follows:

- Set a policy that limits five board seats in SET-listed companies that a director can hold
- Set a policy that limits a term of nine years for directors and independent directors (three terms)
- Set the performance assessment of directors by an external assessor every three years, in 2015 The next assessment will be in 2018. The improvement was made during 2016 and 2017 on the following:
  - (1) Nomination and appointment of directors
  - (2) Continuous development of directors
  - (3) Time spent on strategies
  - (4) Policy review
  - (5) Meeting system.
- Reviewed and improved the performance assessment form of the Board and the sub-committees in line with SET's assessment guideline. In 2016, the performance assessment of the Company Secretary and the cross-assessment of two directors (instead of one) per director were added.
- Provided opportunities for minor shareholders to submit agenda items and nominate directors



- Prepared a Corporate Compliance Hand Book covering eight major issues, namely 1) Compliance with applicable laws and regulations, 2) Fair competition and prevention of monopoly, 3) Anti-fraud, corruption, and bribery, 4) Respect and compliance with human right principles, 5) Protection of intellectual property, 6) Prevention of money laundering, 7) Management of IRPC's assets and data, and 8) Responsibilities for the environment, health, and safety.



Domestic fund managers and UOB Kay Hian Securities (Thailand) on a plant visit



## Structure of Directors and Terms of Directorship

Details of composition and qualifications of the Board appear under Management Structure, page 72-74

## Roles and Responsibilities of Directors

Details under Management Structure, page 75-77

## Nomination and Appointment of Directors

Details under Management Structure, page 80

## Segregation of Roles between the Chairman and the President

Details under Management Structure, page 77

## Roles and Responsibilities of the Chairman

Detail under Management Structure, page 77

## Sub-Committees

Detail under Management Structure, page 78-82

## Performance Assessment of the Board

The Board of Directors and its Sub-committees undergo the annual performance assessment as a framework for investigation whether, for the past year, they complete their tasks, assume appropriate roles and responsibilities, and comply with corporate governance were met. The assessment results are used to develop directors in the following year. In 2016, apart from self-assessment and cross-assessment, cross-assessment of one director for two directors was added. Independent assessment in compliance with the ASEAN CG Scorecard is assessed every three years, due in 2018.

## Annual Performance Appraisal

IRPC conducted a performance appraisal of the Board of Directors and Committees, with the outcomes summarized below:

**1. The Board's performance appraisal outcome as a whole** in 2016 received an average score of 95.38% (compared to 95.28% in 2015).

Appraisal Topics	Scores
• Board structure and qualifications	96.70%
• Board's roles and responsibility for business strategy setting	93.66%
• Board's practices	94.33%
• Board meetings	96.58%

Directors proposed additional recommendation: "To efficiently manage this complex business, directors should enhance their own knowledge and capacity in such key issues as finance and accounting, which will enable them to set a vision and business directions under fast-changing circumstances and heated competition in the petrochemical industry."

## 2. Individual Appraisal Outcome

- The average scores of performance self-assessment in 2016 was 97.29% (against 95.97% in 2015).
- The average scores of other directors (cross-evaluation) in 2016 was 98.20 % (from 89.15% in 2015).

Appraisal Topic	Self-assessment Score	Cross-evaluation Score
• Director' qualifications	97.71%	98%
• Responsibility for one's own decision and action, which are explicable	99.56%	98.45%
• Responsibility for duties, performed with sufficient competency and efficiency.	92.71%	98.34%
• Fair and equitable treatment of stakeholders, which is explicable	97.33%	98.98%
• Transparent and auditable operation together with information disclosure	97.67%	99%
• Vision for long-term value addition	97.62%	96.45%
• Ethics and compliance with the Code of Conduct	98.44%	98.23%

### 3. Performance appraisal of the Audit Committee

3.1 Performance appraisal by the Chairperson in 2016 earned an average score of 100%.

Appraisal Topics	Scores
• Independently performing duties	100%
• Reviewing the financial statements	100%
• Considering connected transactions	100%
• Reviewing the internal control system	100%
• Reviewing IRPC's risk assessment	100%
• Reviewing compliance with SET and SEC criteria	100%
• Performing other assigned duties	100%
• Regularly reporting to the Board	100%

3.2 The Audit Committee's appraisal outcome as a whole in 2016 earned an average score of 99.31% (compared to 99.44% in 2015).

Appraisal Topics	Scores
• Structure and component	100%
• Roles and responsibilities	100%
• Relations with internal and external auditors	100%
• Relations with the management	95.83%
• Reporting	100%
• Quality control	100%

3.3 The Audit Committee's individual appraisal outcome in 2016 earned an average score of 88.39%.

Appraisal Topics	Scores
• Business knowledge	75%
• Proficiency in duties	83.33%
• Assigned authority and duties	91.67%
• Independence and fairness	100%
• Understanding of duties and responsibilities	94.05%
• Performance and meetings	86.11%

### 4. Committees' appraisal outcome in 2016

- The Nomination and Remuneration Committee earned an average score of 95.35%.
- The Corporate Governance Committee earned an average score of 97.30% (against 98.96% in 2015).
- The Risk Management Committee earned an average score of 99.27% (against 99.44% in 2015).

Appraisal Topic	Nomination and Remuneration Committee	Corporate Governance Committee	Risk Management Committee
Committee Structure	95.56%	97.78%	100%
Policy	96.67%	94.29%	100%
Practices	95.83%	97.14%	98.33%
Meeting preparation and conduct	93.33%	100%	98.75%

### President performance appraisal

The President's appraisal and remuneration were defined under explicit and transparent criteria, which fairly and concretely reflect his performance and suit his responsibilities. The detailed procedure in 2016 is shown under Management Structure, page 70-98

### New Directors' Orientation

To ensure that newly-appointed directors understand the company's business and their roles and responsibilities as required by laws and international CG standards, IRPC held an orientation session in 2016 for all newly-appointed directors before they first attended Board meetings. The President briefed them by himself every time and documents related to corporate information, regulations, and operation manual were submitted to them before the meetings.

The newly-appointed directors in 2016 were:

1. Mr. Jessada Promjart Independent Director
2. Miss Ruenvadee Suwanmongkol Independent Director
3. Mr. Nuttachat Charuchinda Director
4. Mr. Anusorn Sangnimnuan Independent Director
5. Gen.Theppong Tipayachan Independent Director



#### Each orientation session consisted of:

1. The President presented corporate information, consisting of IRPC's vision, policies, organization structure, business overview, business performance outcomes, and other relevant information to enhance their mastery of IRPC's businesses. The session took at least one hour, and directors were allowed to ask questions for as long as they wished.

2. The Company Secretary presented to the new directors relevant documents, consisting of Director's Handbook (books 1-3), Corporate Governance Handbook, Code of Conduct, Company's Affidavit, Objectives and Articles of Association, list of directors, duties of the sub-committees, minutes of shareholders' meetings (2013- 2016), minutes of the Board's meetings (2013- 2016), Disclosure Report Concerning Additional Information (Form 56-1), Annual Report 2015, Sustainability Report 2015, Institute of Directors (IOD) training courses, and the schedule of Board meetings for 2015-2016.

#### Knowledge Development

IRPC encourages the directors and the management to participate in the training and seminars that will be useful in performing their work in business/industry administration, roles, duties and responsibilities of directors. Each director has attended the basic training with IOD (the number and their details are shown under Directors' Profiles on page 12-21). However, for the directors who have not, the Company Secretary has coordinated scheduling them for the next IOD training courses as seen fit. In 2016:

- Three directors attended the training courses organized by IOD, namely Mr. Somnuk Bomrungsalee attended the Director Certification Program (DCP) class 229, Mr. Jessada Promjart attended the Ethical Leadership Program (ELP) class 5, and Mr. Ekniti Nitithanprapas attended the Role of the Nomination and Governance Committee (RNG) class 8.
- Nine directors (Mr. Tevin Vongvanich, Mr. Songpope Polachan, Mr. Somnuk Bomrungsalee, Mr. Jessada Promjart, Mr. Nuttachat Charuchinda, Mr. Anusorn Sangnimnuan, Mr. Chavalit Punthong, Mr. Charnsin Treenuchagron, and Mr. Sukrit Surabotsopon) attended the "Anti-Corruption: Leadership Role of the Board" lecture by Mr. Ronald E. Berenbeim, co-hosted by IOD and PTT Plc.

- Three directors (Mr. Tevin Vongvanich, Mr. Charnsin Treenuchagron, and Mr. Sukrit Surabotsopon) and the Company Secretary attended a lecture on national anti-corruption strategies by the Advisor to the Chairman, Office of the National Anti-Corruption Commission (NACC), at the boardroom PTT Plc.

- The Company Secretary attended the Anti-Corruption in Practice (ACPC) and Corporate Governance for Executives (CGE) training courses under IOD and Sustainable Brands 2016.

- IRPC invited Dr. Jeff Brown, President of FGE (Fact Global Energy) in Singapore, to inform the executives about the oil situation and current industrial circumstances related to the company, including the potential and opportunities that Thailand and IRPC might benefit from.

- The President, directors, and executives attended a lecture on compliance with CAC guidelines from Mr. Kulvech Janvatanavit a CAC Advisor to the IOD.

- Office of Corporate Affairs' executives and employees attended the Company Reporting Program (CRP), Fundamentals for Corporate Secretaries, Sustainable Brand 2016, English Business Writing for Com., Minutes of Meeting, Advance Grammar Writing Styles and Editing, Sasin: Business English Courses: Business English for communication to advance their skills and exchange knowledge for further development.

- IRPC invited Mr. Kanitanant Apihansakorn, a highly-qualified speaker from the Office of the Ombudsman, to deliver a talk on "Discretion at Work under Ethics" for executives and staff on IRPC CG DAY 2016.

- Executives attended seminars/meetings/lectures on anti-corruption and on CG hosted by IOD, SET, or other education institutes through the year.

#### Nomination of the President

The Nomination and Remuneration Committee is responsible for the nomination for the Board's consideration of competent candidates with suitable knowledge, experience and ability for the position of President. Such candidates must command extensive experience, knowledge and understanding of the petroleum and petrochemical businesses, as well as a good image and leadership, and comply with CG. The Nomination of President is 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 are to become top executives, as well as plans on training courses to enhance their skills and knowledge, and career path development under the HR Excellence program. IRPC has a plan for succession for the President, top management and middle management to efficiently nurture successors and to promptly handle all situations, either 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.

## Governance of IRPC, its Subsidiaries and Associates

### • Management Structure

The Board approves IRPC’s management structure to ensure efficiency of business management led by the President. This year, the Board approved a new, streamlined organization structure with fewer authority levels to avoid redundancy and better suit mandate and nature of IRPC’s businesses, as shown under Organization Chart, page 22

### • Governance mechanism

Besides the nomination of the President and the management, the Board set governance guidelines for IRPC, its six subsidiaries and five associates (detailed under Shareholding Structure, page 105) as follows:

To serve as a director or other positions in IRPC or other organizations, the President needs the approval of the Board. On the other hand, members of top management need the approval of the President to serve as a director or other positions in other organizations. IRPC’s representatives need the approval of the Board to serve as a director or management members of its subsidiaries or associates.

### • Role as Shareholders of Subsidiaries and Associates

IRPC’s representatives exercise the voting right at shareholders’ meetings under the rules and regulations of subsidiaries and associates, and within the Board-approved authority.

### • Management Mechanism for Subsidiaries and Associates

Business management must align with IRPC’s main policy and conform fairly to market prices for connected and related transactions. Reporting of conflicts of interest must be properly, thoroughly, transparently, and auditably undertaken under CG.

IRPC executives, serving as the company’s representatives, manage all subsidiaries and associates, while key decisions must be endorsed by IRPC Board first.

## Dividend Policy

IRPC has a policy for dividend payment of no less than 25% of the annual net profit after deduction of taxes and all provisional reserves required by law and IRPC’s Articles of Association. The dividend payment also depends on investment plans, necessity, and

suitability as the Board deemed appropriate. The 2016 AGM approved dividend payment of Baht 0.22 per share for the 2015 performance.

### Use of Inside Information

The Board has defined a policy of information disclosure and good practices on maintaining confidentiality of information in its CG Manual requiring the directors, the management, and employees to be prudent in maintaining confidential information, as well as the use of inside information and disclosure of IRPC's information to outsiders. A system to maintain confidential information was established, levels of confidentiality classified, and data access restricted. IRPC's policy forbids disclosure and use of material 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 2016, the shareholders approved the appointment of Pricewaterhouse Coopers ABAS to serve as the external auditor of IRPC. The company has been found to be independent and reliable and does not have any relations or vested interests, or both, with IRPC, its subsidiaries, directors, executives, major shareholders or related parties.

The total amount of the audit fee in 2016 was Baht 3,100,000, excluding the non-audit fee such as the cost to verify BOI's exercise benefits, tax and legal consultant fee for subsidiaries merging and transfer price project in the amount of Baht 2,305,300.

### Corporate Citizenship

IRPC is committed to its role of a good global citizen. It encourages the organization and stakeholders to jointly conduct business under the UN Global Compact, involving four major areas: 1. Human rights, 2. Labor, 3. Environment, and 4. Anti-corruption and relevant practices on its way to achieving the SDG17 goal.

### Human Rights

- Being one of the 15 leading Thai organizations Jointly founded "UN Global Compact Network Thailand" to forge a knowledge-sharing network. This network, with the President serving on the Board of Founders, supports the operation under the United Nations' 17 Global Goals. It continually holds seminars and meetings or discussion for a better understanding of sustainability aspects, corporate responsibilities, and national responsibilities. It also collaborates with the public sector, such as the Office of the National Economic and Social Development Board and the Ministry of Foreign Affairs, as well as the civil society sector and the Public-Private-Partner (PPP) sector.
- IRPC implemented projects in response to 17 SDGs under, 3. Good Health and Well-Being, 4. Quality Education, 5. Gender Equality, 6. Clean Water and Sanitation, 10. Reduced Inequalities 11. Sustainable Cities and Communities 12. Responsible Consumption and Production, 13. Climate Action, 15. Life on Land, 16. Peace and Justice Strong Institutions, and 17. Partnerships for the goals. Details appear under Social Responsibility, page 178-197
- IRPC, joining Thaipat Institute, promotes children's rights based on the UNICEF guidelines. From 2015 to 2016, it trained executives and employees on Children's Rights and Business Principles, which stated that any organization can take care of children if conducting business with social responsibility. IRPC therefore incorporated this topic into its CG strategies. It collaborated with the Prostheses Foundation in donating prostheses to Karen children in Umphang





district, Tak province, which is beyond the scope of public medical care.

- IRPC has run the “From Bench to Community Project” since 2011 to offer the disabled a better chance in life. In 2016, the mobile unit donated prostheses to amputees in Rayong as a tribute to HM the late King Bhumibol. This developed a new standard for each field visit, benefiting both the disabled and prosthetists who are also amputees.
- IRPC allocated the budget to help support disability occupation through Social Innovation Foundation for 20 persons and through the Redemptorist Foundation for People with Disabilities for 26 persons.

## Labor Rights

It is IRPC’s policy to fairly treat and protect employees, suppliers, labor, contractors’ workers, and customers through the supply chain in compliance with the law. Moreover, it respects the privacy of all personnel without segregation for differences on gender, age, education, religion, or race.

- IRPC developed rules, procedures, and practices that are fair in selecting, evaluating, and promoting employees. It provides career opportunities and career development, and training for a better quality of life of employees and their families, as well as their neighboring communities.





- IRPC supports constructive activities and always listens to their opinions of eight labor unions.
- IRPC policy is to enter into agreements only with contractors complying with labor rights laws and always cares for safety of the workplace for their staff.

### Anti-Corruption Practices

- IRPC is a certified member of the Thailand's Private Sector Collective Action Coalition against Corruption (CAC), on April 4, 2014. It formulated risk management plans for short-term and long-term anti-corruption practices to upgrade and renew its membership by 2017.
- Under the CAC guidelines, IRPC conducts risk assessment on fraud and corruption in every 3-year period. Thanks to efficient and sufficient internal control and internal audit systems, the IRPC Risk Management Committee foresees no serious risk for fraud and corruption.
- To expand its anti-fraud and anti-corruption alliance, IRPC enforced such practices units affiliates and invited its stakeholders such as suppliers to join the CAC.
- IRPC has completed training on anti-corruption policies and practices as well as the Code of Conduct, and has included it in individual development plans, for 3,620 employees, equivalent to 69% of the workforce.
- IRPC joined forces in combating corruption. This year, 500 executives and employees of PTT Group attended the "Turn on the Light to Fight Corruption" activity, hosted by the Anti-Corruption Organization of Thailand together with network partners under the "Corruption: Bad Karma" concept. Held at Sanam Luang, the activity reflected close public-private collaboration, which is a crucial factor and foundation of national development in all aspects. This will help Thailand grow strongly and equally among international community as well as being globally accepted.
- With PTT Group, IRPC extended the anti-corruption joint efforts within the group to all its stakeholders by educating them, forging anti-corruption conscience, establishing strict preventive measures, and encouraging all business practices to be transparent.
- IRPC focuses on business transparency, promotes ethics and best practice, and regularly communicates the core value on iSPIRIT and integrity to employees to ensure that everyone is on the same page and instill conscience into an organizational culture:

- IRPC organized IRPC CG Day 2016 under “the Code to Victory” theme to promote work ethics. Presiding over the event, Mr. Sukrit Surabotsopon, IRPC President, gave the policy and guidelines on transparent and efficient implementation. At the event, have a talk on “Discretion and Ethics at Work”. Moreover, 12 teams of staff joined an idea contest entitled “Promoting Work Ethics toward Success”,

which aimed to promote ethical practices. This activity allowed representatives from each unit to share their perspective on CG and give others a clearer picture. It also encouraged employees to recognize the importance and benefit of working under the CG Code of Conduct Manual, set by the Board. (The event welcomed 1,398 employees, representing 26% of the workforce and exceeding the target of 20%.)







- IRPC held an anti-corruption seminar entitled “IRPC Anti-Corruption Network” on July 27 for employees, customers, and suppliers. The seminar welcomed 153 participants, which exceeded the target of 100.

- IRPC set a No-Gift Policy as well as an anti-corruption and anti-bribery policy, which directors, executives, and employees must strictly adhere to as part of anti-corruption efforts. No Gift Policy is strictly prohibited all employees from accepting or giving direct or indirect gifts or anything of monetary value from a person, groups, associations, especially public official, at any time. If there is a proof of such manner, the employee will be found guilty in violating the company’s policy and regulations. The company disclosed the policy on its website at [www.irpc.co.th](http://www.irpc.co.th).

In addition, the board endorsed the Anti-bribery policy to help prevent acts of bribery and corruption. The policy in the organization. The policy enforces directors, management and employee to comply with the policy as per the following details:

1. Management and employees must comply with company’s policies, regulations and practices, including the Organic Act on Counter Corruption, B.E. 2558 (2015) to ensure all activities are meet its goals without bribe or corruption.
2. The promise, offering, giving, including direct or indirect facilitated payment, to a public official or private official, directly or indirectly, of an undue

advantage, in order that the official act or refrain from acting in the exercise of his or her official duties, in breach of his or her duties, are strictly prohibited.

3. Management and employees address on internal control systems to assurance its transparency operational.

4. Management and employees or any other persons who act on behalf of the company are prohibited from violate this policy, any acts in breach of the policy will be considered to receive penalties.

5. The company must establish the internal control system in the area of bribery and corruption.

6. The company must establish the efficient Risk Management in the area of bribery and corruption.

- The Office of Corporate Internal Audit formulates five-year internal audit plans and operates annual operating plan to make sure that everything is done effectively, based on priority and impact. It also piloted the Self-Audit Project to foster staff’s conscience to follow indicated processes. Moreover, the office organized the 6th annual Diamond Award in 2016, which has been held since 2011, to give corporate recognition to the business unit with best cooperation on internal auditing and internal control together with transparency. This will enable the efficiency of internal audit and internal control, which is the key foundation of CG. The 2016 Diamond Award went to DCC Division, Refinery Department.

- A whistleblowing policy was endorsed and approved by the Board to provide a communication channel for internal and external whistleblowers to provide clues and evidence on illegal and unethical conduct, frauds and malpractices by employees, ranging from directors, executives, employees, subsidiaries, to other stakeholders related to IRPC's businesses. The policy also spelled out stages of verification and remedy. The processes are unbiased and transparent, with protection measures for whistleblowers and involved witnesses alike.

Whistleblowing and complaint channels:

- By email to auditor@irpc.co.th
- By surface mail to Audit Committee Chairman IRPC Public Company Limited 555/2 Energy Complex Building B 6th Floor, Vibhavadi-Rangsit Road, Chatuchak, Bangkok 10900
- By mailbox to P.O. Box 35, Sun Tower NDPO Bangkok 10900.
- The policy includes stages of data and complaint verification. Corporate Internal Audit is assigned to manage all work processes and monitor progress, gather all the misconduct and unethical activities, and report directly to the Audit Committee and the Board monthly and quarterly. The unit considers if the complaints are well-grounded and establishes a committee to further investigate the case in question. Disciplinary action must be taken on the guilty parties under IRPC's regulations.
- In 2016, IRPC received 39 complaints from P.O. Box 35, surface mails and emails. The Audit Committee deems P.O. Box 35 to be the most efficient and safest channel for confidentiality. Of these complaints, 37 were not related to corporate governance and unethical conducts and two were recommendations. There was neither a complaint against directors nor one about a breach of the anti-corruption policy. The cases were assigned to Corporate Internal Audit together with relevant business units to verify all related data. The reports were made to the President, Executive Committee, Audit Committee and the Board under a specified procedure and timing. Of the 32 cases concluded by IRPC, 21 cases were not well-grounded

enough for verification, 13 cases about non-compliance with IRPC's regulations, and five cases about inappropriate conduct. IRPC used the regulations to fairly and transparently assign the penalty of each case. It did not find any material loss. The remaining seven cases are under review.

## The Environment

It is IRPC's policy to efficiently use the resources, avoid waste discharge that pollutes the environment, and strictly comply with EIA conditions. Below are its actions this year. Planted trees along the buffer zone between the IRPC Industrial Zone and communities to prevent environmental impacts and promote the industrial zone and its plants as Eco-Industrial Zone that can co-exist with the local communities by minimizing environmental impacts.

- Conserved economic trees which operated in Don Jone Forest, Tambon Lam Sai Yong, Amphoe Nang Rong, Buri Ram.
- Implemented a herb project and returning wild flora to its habitat with Phu Langka National Park and the Department of National Park, Wildlife, and Plant Conservation.

(Details are under Sustainability Management, page 211 and policy on the responsibility for the environment and natural resources page 55)

## The Company's Directions of Good Corporate Governance Practices in 2017

### 1. Responsibilities of the directors

1.1. The Board of Directors emphasizes the roles and responsibilities of the directors in guiding the company's performances, sustainability and stability governance, supporting the management in solving problems, and monitoring the performances of the management. The directors firmly hold accountability to the company and the shareholders. They must employ their knowledge and abilities for the utmost benefits on the basis of transparency, integrity and reliability of information to support their decisions.

For example, the Board of Directors are striving to complete the annulment of public ways and gutters

located within the company's lands in 3 sub-districts of Rayong Provinces, which are Cherngnern, Tapong and Banlaeng Sub-districts as determined by the company and allowed by the Land Code Section 8. At present the company is renting the lands which consists of such public ways and gutters in accordance with the Land Code Section 9 which is completed on March 7, 2016.

1.2. To foster the directors' missions and boost the company's benefits, in 2016 the Risk Management Committee amended the charter by adding "screening and providing suggestions for risk management of the investment projects which are technically complicated and have long-term commitment and significant risks". In addition, the Audit Committee amended the charter regarding "consideration, selection and nomination of an independent person to be the company's auditor and the remunerations offered to such person; dismissal of the auditor in case of failure to perform function, negligence of function or abuse of function; and attendance to the meetings with the auditor without the management presence at least once a year".

1.3. The Board of Directors has studied the new law on securities which was proclaimed on December 12, 2016 to be prepared for appropriate performances. Furthermore, the company has disseminated and provided guidance on practices following the new Securities Act to the management of all levels for understandings, prevention of malpractice and, most importantly, for confidentiality and information disclosure.

1.4. Practices during the meetings: If the meeting contains an agenda in which the President is an interested person, the President shall leave the meeting room, and an independent director shall be asked to preside over the meeting. In considering each meeting agenda, the company's secretary will identify the names of interested directors in each agenda as well as giving the information of how the consideration of such agenda reflects the directors' good corporate governance. For instance, consideration of the company's strategic planning promotes creation of long term value.

## 2. The company's practices

2.1. The Board of Directors has approved the operational plan of good corporate governance for the year 2017 in the meeting no. 1/2017 held on January 24, 2016 following the proposal of the Good Corporate Governance Committee. The plan consists of 4 operations including 1. Operations which are in conformity to the laws, regulations and policies of the company's directors, 2. Strategic operations to foster the good corporate governance, anti-corruption and bribery, 3. Environmental governance and 4. Social responsibility projects.

The 2017 operational plan which is significantly added to that of 2016 is risk assessment of compliance, systematization of compliance towards Zero Non Compliance at all levels and risk assessment of IT to reliably prevent the company's system from any kind of attacks whereby the IT Security: Zero Cyber Attacked (IT System Failure) has been set as the indicator. The goal of 2017 is that the failure must be zero.

Moreover, the participation of more various interested persons in addition to the shareholders is emphasized. Also, ideas, needs and suggestions from the interested persons are welcomed extensively and inclusively for accurate planning which will effectively increase the value to the interested persons.

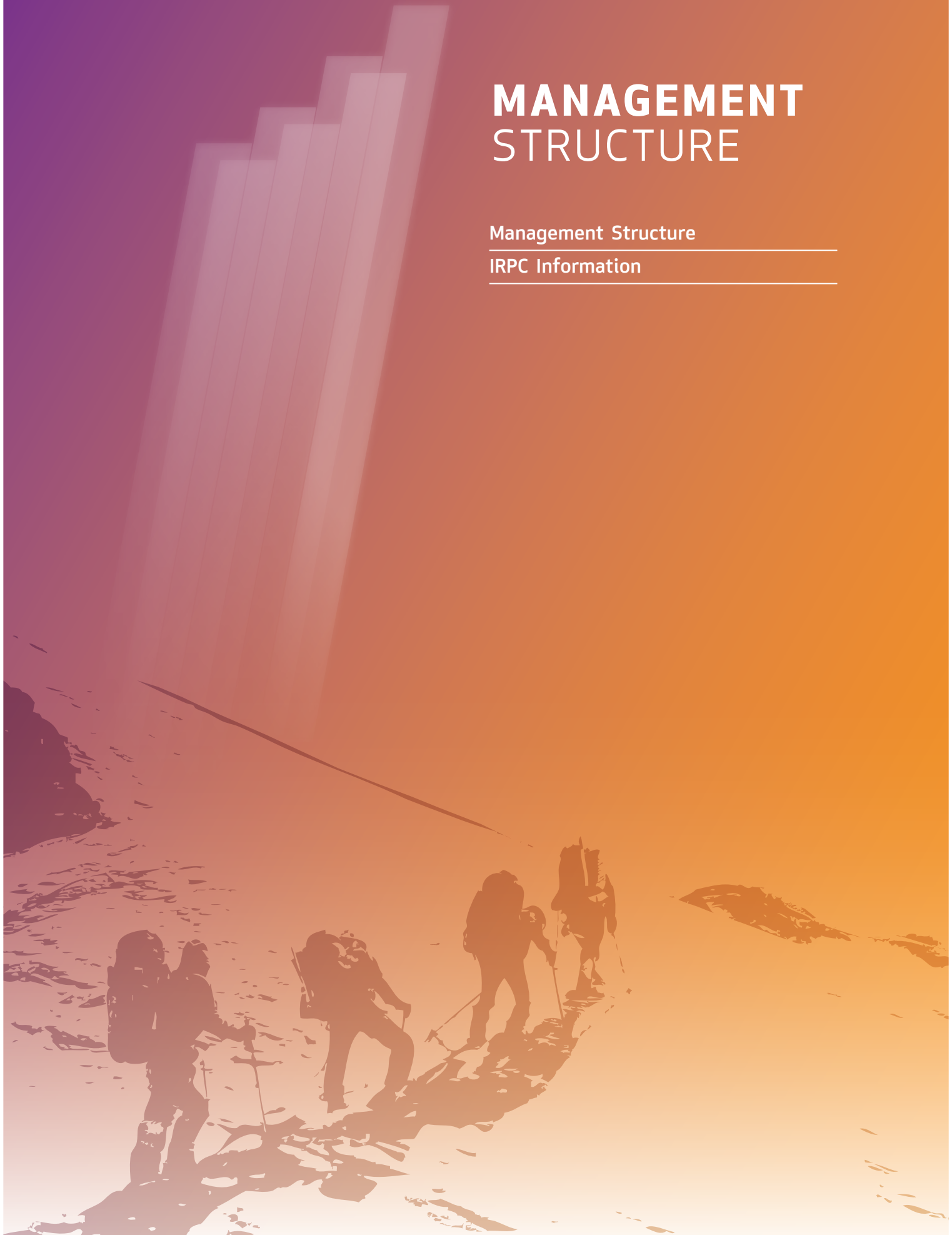
Investment in social enterprise projects is promoted. There will be one more projected carried out in 2017, and the returns of the project will be assessed by SROI. It is found that the projects carried out by the company in 2016 are in concordance with the direction of the 6 types of social responsibilities in 2017 proposed by Thaipat Institute, which include integrity, inclusive, equality, local, tourism, and renewable. The details of the projects are shown on pages 186-199, and the company will continue developing such projects in 2017 with Sustainable Development Goals.

IRPC vows to drive its businesses toward steady and sustainable growth by leveraging the power of knowledge, capacity, experience, and, above all, ethics and code of conduct instilled in the DNA of all directors, executives, and employees to drive the organization toward its goals.

# MANAGEMENT STRUCTURE

Management Structure

IRPC Information



## MANAGEMENT STRUCTURE

The Board of Directors has envisioned **IRPC to become a leading 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

consists of 15 members. The duty is to oversee all corporate operations to ensure the compliance to policies, directions and targets what will return maximum benefit to shareholders, taking into account the interest of all stakeholders with fairness, social responsibility adherence, under the moral and code of conduct to become the good corporate citizen of the world.

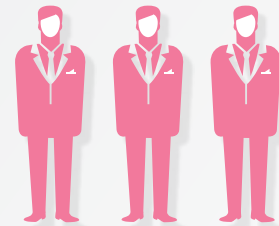
Report

### Sub-Committee



#### Audit Committee

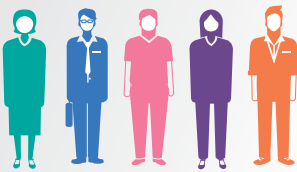
is appointed by the Board. Sub-committee shall comprise of at least 3 members, having duty to audit financial statement and to give advice on internal audit procedures. The board shall have at least one member who have adequate knowledge and experience in auditing the accountability of Company's financial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



#### Nomination and Remuneration Committee

is appointed by the Board. 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.

### 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 statement and remuneration of the Board.

### 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 2016, the Independent Directors consists of 8 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 such as special meeting of the Independent Directors.

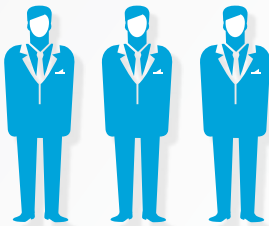
Appointment





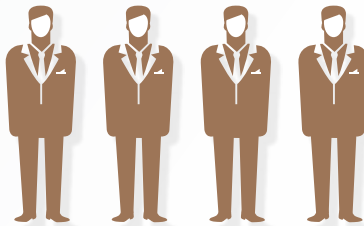
### Chairman

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. 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 to ensure the efficiency.



### Risk Management Committee

is appointed by the Board. 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 by the Board of Directors, having duty to manage Company's operation to ensure the compliance to objectives and policies set forth by the Board.



### 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.

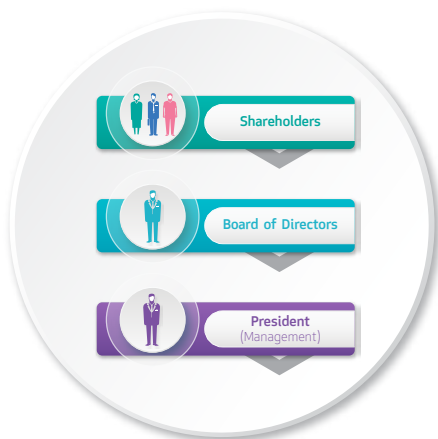
- President
- Vice President
- Executive Vice President of all departments

### 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



## Management Structure

The Management Structure of IRPC comprises of the Shareholders, the Board of Directors and the management, with the President serving as the chief executive. The Board represents the shareholders and the management represents the Board. IRPC's management structure focuses on all stages of Corporate Governance and spans all channels of business execution with monitoring of key operation required by law and regulations to produce transparent management.

The Board of Directors and the management perform in the best interests of IRPC and its shareholders, and stakeholder under a clear, balanced, and accountable management structure. The Board representing the shareholders in monitoring and ensuring that the management implements its vision, strategies, policies, plans and policies for the utmost benefits of the shareholders.

## Board of Directors

As of December 31, 2016, the Board consisted of 15 members, which suit the sizes and types of its businesses as follows:

- 14 non-management directors (93.34% of the entire Board)
- One management director
- Eight independent directors (53.33% of the entire Board)
- One female director

### Details of the Board of Directors are as follows:

No.	Name	Position held as of December 31, 2016		Appointed Date
1	Mr. Tevin Vongvanich	Chairman		October 20, 2015
2	Mr. Woothisarn Tanchai	Independent Director	Chairman of the Nomination and Remuneration Committee	June 19, 2015
3	Mr. Nuttachat Charuchinda	Director	Chairman of the Risk Management Committee	April 29, 2016
4	Mr. Songpope Polachan	Independent Director	Chairman of the Audit Committee	April 5, 2013
5	Mr. Anusorn Sangnimnuan	Independent Director	Chairman of the Corporate Governance Committee	August 27, 2016
6	Mr. Chansin Treenuchagron	Director	Member of the Risk Management Committee	October 20, 2015
7	Mr. Chavalit Punthong	Director	Member of the Nomination and Remuneration Committee	November 17, 2015
8	Mr. Pramual Chanpong	Independent Director	Member of the Corporate Governance Committee	April 1, 2014
9	Mr. Somnuk Bomrungsalee	Director	Member of the Nomination and Remuneration Committee	April 9, 2014
10	Gen.Sasin Thongpakdee	Independent Director	Member of the Corporate Governance Committee	September 1, 2014
11	Gen. Theppong Tippayachan	Independent Director	-	September 1, 2016
12	Mr. Ekniti Nitithanprapas	Director	Member of the Risk Management Committee	November 17, 2015
13	Mr. Jessada Promjart	Independent Director	Member of the Audit Committee	March 15, 2016
14	Ms. Ruenvadee Suwanmongkol	Independent Director	Member of the Audit Committee	April 1, 2016
15	Mr. Sukrit Surabotsopon	Director (Management Director)	Member of the Risk Management Committee/ President/ Secretary to the Board of Directors	October 1, 2013

### Directors authorized to sign for IRPC

The directors authorized to sign for IRPC under IRPC's Affidavit dated December 30, 2016, 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 (9 years).

5. Directorship in listed companies on the Stock Exchange of Thailand (SET) must not exceed five companies in total.
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. At present, IRPC has eight independent directors out of 15, which is over half of the entire Board.

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 20 million baht 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 2 million baht 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 under the following criteria:

- (1) One shareholder carries one vote per share.
- (2) To elect directors, votes can be cast for individual candidates or a collective vote can be cast for the entire number of directors to be elected, as seen appropriate by the shareholders' meeting. Each candidate, by individual or collective voting, is allowed to receive the number of votes in accordance with the total number of shares held by each shareholder under (1). Shareholders cannot split their votes in favor of other candidates.
- (3) Successful candidates are ranked by the number of votes received, the number of whom matches the number of directors to be elected. If candidates get equal votes, which makes the number of successful candidates exceed that of directors to be elected, the Chairman of that meeting will cast a decisive vote.

2. The Board selects one member as the Chairman and can also select one or more members to be his/her Vice Chairman to perform duty as stipulated in IRPC's Articles of Association and as assigned by the Chairman (no Vice Chairman was 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 qualities 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 reports, 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 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 correctness, clarity, transparency, reliability, and high standards.

10. Assume leadership and act as a good example, in compliance with IRPC's corporate governance and CSR guidelines.

11. Encourage IRPC to undertake anti-fraud and anti-corruption activities in every form for the maximum benefit to its business and stakeholders.

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, information disclosure policy, as well as financial targets, action plans, and annual budget.

2. IRPC's financial criteria, investment, and investment direction.

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 securities laws, such as connected transactions, property acquisition and disposal.

6. Payment of interim dividends to shareholders and staff's annual compensation.

7. Performance results and determination of President's remuneration.

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.

Moreover, in performing their responsibilities on the following 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.

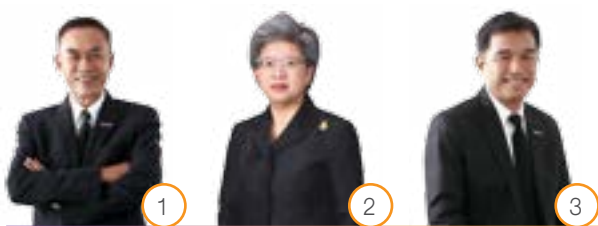
2. Approve matters for Board meetings (in collaboration with the President)

3. Attend Board meetings and shareholders' meetings, ensure efficient meetings in compliance with IRPC's rules and regulations, while encouraging directors to express their independent views with adequate information provided.

4. Encourage the Board to work with 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 other sub-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 (or committees), each of which is assigned to consider and oversee specific critical matters in their respective areas. Each sub-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 Capital Market Supervisory Board's notification on the qualifications and scope of work of audit committees. The Audit Committee must have at least one director who possesses sufficient knowledge and experience to review the reliability of the budget:

- |                                |          |
|--------------------------------|----------|
| (1) Mr. Songpope Polachan      |          |
| (Independent Director)         | Chairman |
| (2) Ms. Ruenvadee Suwanmongkol |          |
| (Independent Director)         | Member   |
| (3) Mr. Jessada Promjart       |          |
| (Independent Director)         | Member   |

### Vice President, Office of Corporate Internal Audit and Secretary to the Audit Committee

To ensure the efficiency of internal control, risk management systems, and reviewing internal processes regarding whistleblowers and receipt of complaints, the Audit Committee appoints the Internal Audit Manager whom independently report to the committee

Also, the Audit Committee appoints an Internal Audit Manager to work as a Secretary to the committee 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, as well as independence to assist the Audit Committee.

**Mr. Thammasak Panyowatkool, Executive Vice President**, was appointed Vice President, Office of Corporate Internal Audit (with effect from January 1, 2016, to present). (Mr. Thammasak Panyowatkool's profile is shown under "Management Profile" on page 32)

### Term of Office

1. Members shall have a term of office as their directorship of the Board.
2. Members who complete their terms of office may be re-appointed, as deemed appropriate by the Board.
3. Members no longer hold directorship under the following circumstances:
  - Dismissal from IRPC's directorship
  - Lack of qualifications as member of the Audit Committee
  - Resignation
  - Death
  - Dismissal via legal procedure following a shareholders' resolution. The reason of dismissal must be notified 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 businesses.

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 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. The report must be signed by the Chairman of the Audit Committee.

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

the Office of the Securities and Exchange Commission or SET on receiving the information without delay.

13) Perform other tasks as assigned by the Board, with the Audit Committee's concurrence.



## 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. The committee's names are listed below:

- |                             |          |
|-----------------------------|----------|
| (1) Mr. Woothisarn Tanchai  | Chairman |
| (Independent Director)      |          |
| (2) Mr. Somnuk Bomrungsalee | Member   |
| (3) Mr. Chavalit Punthong   | Member   |

Ms. Monwipa Choopiban, Executive Vice President, Office of Corporate Affairs and Company Secretary, serves as Secretary.

### Term of Office

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

### Duties and Responsibilities

- 1) Consider the structure and qualifications of directors and the President.
- 2) Consider criteria, guidelines, and methods to nominate directors for the Board, the sub-committees, as well as the President, based on relevant rules and regulations with transparency and efficiency.
- 3) Screen appropriate candidates for consideration of directorship, in the cases of vacancies and completion of terms, and table the list to the Board and the shareholders' meeting for approval.

- 4) Consider the list of directors for membership of the sub-committees and table it to the Board for approval.
- 5) 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.
- 6) Base compensation consideration for directors and the President on transparency, fairness, and sensibility. The compensation for directors is submitted to the Board and the shareholders' meeting for approval, whereas the compensation for the President is submitted to the Board for approval.
- 7) Determine criteria, assessment process, bonus, and operation goals of the President and submit them to the Board for approval.
- 8) Assess the yearly performance and the compensation of the President such as salary, bonus, and other monetary and non-monetary benefits which are suitable to the business and submit them to the Board for approval.
- 9) Perform other tasks as assigned by the Board.

### **Nomination of Directors**

The Board appoints the Nomination and Remuneration Committee to select, screen qualified candidates for directors, and submit the names to the Board or the shareholders for consideration, as seen fit, in a clear and transparent manner. In consideration of the corporate governance on equitable treatment of shareholders, the Board provides the opportunity for one or many minor shareholders with combined shares of no less than 4 percent of the total voting rights to put forward the name of a candidate to be nominated as director in advance of the AGM.

In nominating the top executive, the Nomination and Remuneration Committee nominates a director to the Board for approval and appointment as President, while appointments of qualified persons with appropriate knowledge, ability, and experience, without any legally prohibited characteristics, to be senior executive vice presidents are authorized by the Board to the President.

### **Procedures of Nomination of Directors**

The Nomination and Remuneration Committee screens appropriate candidates either nominated by shareholders under the set criteria or selected by the committee to be directors 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, as well as in compliance 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 sustainable factors 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 (as of December 31, 2016, there were 13 directors in the Directors' Pool)
- 3) Review legal qualifications, regulations of the regulators, IRPC's Articles of Association, and corporate governance handbook, based on four survey forms: 1. Qualifications of directors and/ or independent directors 2. Qualifications of candidates nominated for directors 3. Board Skill Matrix/Board Diversity 4. List of office term of each director.
- 4) Consider directors' dedication (in case of former directors), number of listed companies that each director holds tenure in, and 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 the Office of the Securities and Exchange Commission, IRPC's criteria, as well as the necessity to nominate additional independent directors.
- 6) Determine the terms of office of directors/independent directors as three years. Directors/independent directors can serve up to three consecutive terms (nine years).
- 7) Approach the persons that comply with the set 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 or the shareholders for approval or authorization, as seen fit.

For sub-committees, the Nomination and Remuneration Committee will consider appropriate knowledge and ability, the composition of sub-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<br>(Independent Director) | Chairman |
| (2) Gen. Sasin Thongpakdee<br>(Independent Director)  | Member   |
| (3) Mr. Pramual Chanpong<br>(Independent Director)    | Member   |
- Ms. Monwipa Choopiban, Executive Vice President, Office of Corporate Affairs, and Company Secretary, serves as Secretary.

#### Term of Office

- Members shall have a term in office as their directorship of the Board.
- Members who complete their terms of office may be re-appointed, as deemed appropriate by the Board

#### Duties and Responsibilities

- Propose corporate governance guidelines to the Board.
- Review IRPC's corporate governance against practices at the international level and make a proposal to the Board to ensure continuous and up-to-date improvement.

3) Monitor the work of the management in compliance with corporate governance principles.

4) Monitor implementation under corporate governance policies and plans and as approved by the Board.

5) Monitor the efficiency and implementation of Anti-Corruption Policy, Sustainability Management Policy, CSR Policy and other policies in relevant to Good Governance, Risk Management, and Compliance Management (GRC).

6) Perform Board Evaluation and Sub-Committee Evaluation.

7) Report its monitoring results to the Board on a quarterly basis.

8) 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 | Chairman |
| (2) Mr. Chansin Treenuchagron | Member   |
| (3) Mr. Ekniti Nitithanprapas | Member   |
| (4) Mr. Sukrit Surabotsopon   | Member   |

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

#### Term of Office

- Members shall have a term in office as their directorship of the Board.
- Members who complete their terms of office may be re-appointed, as deemed appropriate by the Board.

## Duties and Responsibilities

- 1) Formulate suitable, efficient policy and recommendations on risk management involving IRPC's business operations.
- 2) Define risk management plans and risk management procedures for the entire company.
- 3) Consider financial instruments such as futures contracts and contracts setting price gaps to reduce IRPC's risks.
- 4) Develop a risk management system to ensure efficiency.
- 5) Monitor and assess performance of corporate wide risk management implementation.
- 6) Submit regular reports on the monitoring of risk management performance and operation to reduce risks to the Board for acknowledgment. Important 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 substantial risks.
- 9) Perform other tasks as assigned by the Board.

## Risk Management in managerial level

Apart from the sub-committees, IRPC has set up the following steering committees and working groups to monitor its 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. Compliance Working Team compiles all regulations, and risks relevant to IRPC's operations and reports to the Risk Management Committee, set up an alarm system and an operation support system to maximize operational efficiency and prevent human errors.

## Meetings of the Board and the Sub-Committees

IRPC schedules Board meetings in advance throughout the year. In 2016, 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 Chairman 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, authorized by the Chairman, sends meeting notices with detailed, sufficient agenda 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. In every meeting, the Chairman gave opportunities for directors to express their opinions freely, and all enquiries will be clarified before voting decided by majority votes (or by the Company's Articles of Association), cast by at least two-thirds of directors with no vested interests or conflicts of interest present. The minutes of the meeting on this matter must be clearly recorded, as well as recommendations and observations, to be adopted at the next Board meeting. Directors can express their opinions or request to add details to or amend the minutes for accuracy. The adopted minutes together with supporting documents will be systematically filed for easy reference in the electronic format as confidential document.

In 2016 the Board held 12 meetings, the independent directors held 2 meetings, and the Board one meeting without the management. A meeting to define and review IRPC's vision, direction, strategies and business plans was held once. The meeting attendance of the entire committee was 97% and individual attendance of each directors was 75-100% as summarized below.

## Meeting Attendance of the Board and Sub-committees in 2016

Name	Board (15 members) Number of meetings throughout the year: 12	Risk Management Committee (4 members) Number of meetings throughout the year: 5	Audit Committee (3 members) Number of meetings throughout the year: 12	Corporate Governance Committee (3 members) Number of meetings throughout the year: 7	Nomination and Remuneration Committee (3 members) Number of meetings throughout the year: 5	Independent Directors Number of meetings: 2	Board without Management Number of meeting: 1
1. Mr. Tevin Vongvanich	12/12	-	-	-	-	-	1/1
2. Mr. Woothisarn Tanchai	12/12	-	-	-	5/5	2/2	1/1
3. Mr. Nuttachat Charuchinda <sup>(1)</sup>	8/8	4/4	-	-	-	-	1/1
4. Mr. Chansin Treenuchagron	12/12	4/4	-	-	-	-	1/1
5. Mr. Chavalit Punthong	12/12	-	-	-	2/2	-	1/1
6. Mr. Songpope Polachan	12/12	-	12/12	-	3/3	2/2	1/1
7. Mr. Pramual Chanpong	12/12	-	-	7/7	-	1/1	1/1
8. Mr. Somnuk Bomrungsalee	12/12	-	-	-	2/2	-	1/1
9. Mr. Anusorn Sangnimnuan <sup>(2)</sup>	4/4	-	-	3/3	-	1/1	-
10. Lt. Gen. Sasin Thongpakdee	9/12	-	-	6/7	-	2/2	-
11. Gen. Theppong Tippayachan <sup>(3)</sup>	3/4	-	-	-	-	1/1	-
12. Mr. Ekniti Nitithanprapas	12/12	4/4	-	-	-	-	-
13. Mr. Jessada Promjart <sup>(4)</sup>	9/9	-	4/4	-	-	1/1	1/1
14. Ms. Ruenvadee Suwanmongkol <sup>(5)</sup>	8/9	-	5/8	-	-	1/2	1/1
15. Mr. Sukrit Surabotsopon	12/12	5/5	-	-	-	-	-
16. Mr. Cherdpong Siriwit <sup>(6)</sup>	8/8	-	8/8	-	-	1/1	1/1
17. Mr. Watcharakiti Watcharoathai <sup>(7)</sup>	7/7	-	-	4/4	-	1/1	1/1
18. Mr. Sarun Rungkasiri <sup>(8)</sup>	3/3	1/1	-	-	3/3	-	-
19. Mr. Triumph Jalichandra <sup>(9)</sup>	3/3	-	3/3	-	-	-	-
20. Mr. Prasit Suebchana <sup>(10)</sup>	-	-	-	-	-	-	-

### Note:

1. Mr. Nuttachat Charuchinda was appointed director following the resolution of Board Meeting No. 4/2016 effective from April 29, 2016.
2. Mr. Anusorn Sangnimnuan was appointed independent director following the resolution of Board Meeting No. 8/2016 effective from August 27, 2016.
3. Gen. Theppong Tippayachan was appointed independent director following the resolution of Board Meeting No. 8/2016 effective from September 1, 2016.
4. Mr. Jessada Promjart was appointed independent director following the resolution of Board Meeting No. 3/2016 effective from March 16, 2016.
5. Miss Ruenvadee Suwanmongkol was appointed independent director following the resolution of the 2016 AGM on April 1, 2016.
6. Mr. Cherdpong Siriwit reached 70 years of age, (IRPC's corporate governance principles stipulating the age of directors of up to 70), with effect from September 1, 2016.
7. Mr. Watcharakiti Watcharoathai tendered his resignation with effect from July 25, 2016.
8. Mr. Sarun Rungkasiri tendered his resignation with effect from April 4, 2016.
9. Mr. Triumph Jalichandra completed his term at the 2016 AGM on April 1, 2016.
10. Mr. Prasit Suebchana tendered his resignation with effect from January 4, 2016.

## The Management

IRPC organization structure consists of the President and the management. The President was appointed to manage all executives and employee to ensure the most efficient of organizational management and operations that follow policies and directions established by the Board of Directors.

If there are significant changes in the organization structure, the Present will propose the Board for approval. In 2016, there was no significant changes.

The Company's organization structure mainly comprises 3 Senior Executive Vice President, 11 Executive Vice President. (Details shown in the Organization Structure page 22 and Management Profile page 23-24)

## The President

The Board assigns the President 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 since October 1, 2013.

## Duties and Responsibilities of the President

Below is the scope of the President's authorities, mandated by the Board:

1. Manage IRPC's business under the laws, 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 or welfare ranges, 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 and visions 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 conduct.
9. Act as a leader and role model in abiding corporate culture, communicating the important policies such as CSR, safety, QSHE to all level of employee.
10. Execute the Ant-Corruption policy in the Company.
11. Encourage the Company to implement the Sustainable Development Goals (SDGs17) to comply with the Good Corporate Citizenship.
12. Perform other acts to support IRPC's operation under the responsibilities delegated by the Board.



## Management

As of December 31, 2016, IRPC Management consists of 17 members as follows:

Name	Position
1. Mr. Sukrit Surabotsopon	President
2. Mr. Pongraphan Titathavewatana	Senior Executive Vice President, Petrochemical & Refinery Business Unit, Acting Executive Vice President, Refinery Operation
3. Mr. Somkiat Lertritpuwadol	Senior Executive Vice President, Corporate Commercial and Marketing, Acting Executive Vice President, Corporate Marketing
4. Ms. Rachadaporn Rajchataewindra	Senior Executive Vice President, Corporate Accounting & Finance
5. Mr. Thammasak Panyowatkool	Executive Vice President, Officiate as Vice President, Office of Corporate Internal Audit
6. Mr. Pravet Assavadakorn	Executive Vice President, Office of Corporate Research and Development
7. Ms. Monwipa Choopiban	Executive Vice President, Office of Corporate Affairs and Company Secretary
8. Ms. Awrapin Ketratanakul	Executive Vice President, Office of Sustainability Management
9. Mr. Sirimet Leepagorn	Executive Vice President, EVEREST Project Director
10. Mr. Kraisit Anukoolutaiwong	Executive Vice President, Corporate Human Resources
11. Ms. Wanida Utaisomnapa	Executive Vice President, Corporate Business Planning
12. Mr. Chalor Panutrakul	Executive Vice President, Corporate Business Development
13. Mr. Veerawat Srinoradithlert	Executive Vice President, Engineering and Maintenance
14. Mr. Trisdee Watanangkur <sup>(1)</sup>	Executive Vice President, Operation Support
15. Mr. Woravuth Sivapetranart <sup>(2)</sup>	Executive Vice President, Technology and Operational Excellence
16. Mr. Vichit Nittayanonte <sup>(3)</sup>	Executive Vice President, Petrochemical Operation
17. Mr. Phothiwat Paopongchuang	Executive Vice President, assigned to the President

Note:

1. Mr. Trisdee Watanangkur retired since December 31, 2016.

2. Mr. Woravuth Sivapetranart was appointed Executive Vice President, Operation Support since January 1, 2017

3. Mr. Vichit Nittayanonte was appointed Executive Vice President, Operation Support since January 1, 2017



## Duties and Responsibilities of the Management

1. Perform in compliance with the Company's policies and strategies.
2. Set the strategies and targets in comply with the Company's vision and mission.
3. Manage all works successfully as assigned including the Company's objectives, business strategies in short and long-term.
4. Provide advice, recommendations, and create teamwork within the organization as well as promote good environment workplace for employee.
5. Support the development of employees as in human resource (HR) management policy and mechanisms.
6. Consider implementation related to Company's sustainability under the Corporate Governance policy.

## Management Committee

To ensure the flow, efficiency, connection support and good business cooperation of IRPC's operation, IRPC 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 and Company Secretary serving as Secretary to the Management Committee.

The Management Committee schedules a meeting in advance once a week on Monday. In 2016, the Management Committee held 48 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 allocation to IRPC and its affiliates, as well as manage all business operations under the same direction as follows:

- Consider and screen the investment management, budget allocation for investment, and support the operation of IRPC and its affiliates.
- Consider important operation directions, based on complete information on IRPC's, the country's and the world's situations.

- 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 environmental, social and governance (ESG) aspects.
- Consider safety performance and propose recommendations to forge awareness and joint improvement, such as complaints or incidents.
- Follow up on progress and operational results of IRPC and its affiliates.
- Provide useful information for the President and management.

In order to efficiently manage the Company to drive the strategies and operations of the companies to achieve

The goals, the President appointed other sub-committees and working groups such as Rayong Management Committee (RMM) to manage the operations in Rayong in accordance with corporate's vision and mission to achieve the target goals, and the Quality, Security, Safety, Occupational Health, Environment Committee (QSSHE) to oversee the compliance of environment and energy management.

The company also appointed the Vice President (VP) meeting which schedules a meeting in advance once a month on the 4th Friday to screen and provide opinions and recommendations on the business administrations.

Moreover, "CEO Townhall" was held quarterly and whenever there is a need for communication to employees for better understanding, questioning and information exchange.

## 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 of listed companies, the Board appointed Ms. Monwipa Choopiban, Executive Vice President, Office of Corporate Affairs, as Company Secretary 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 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, reports on conflicts of interest 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 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 Company Secretary's responsibilities and corporate governance, at national and international levels, to be applied to IRPC as appropriate.
- 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** was appointed the Company Secretary since January 24, 2012.

(Ms. Monwipa Choopiban's profile is shown under "The Management Profile" on page 34)

**Governance, Risk Management and Compliance (GRC)**

Moreover, IRPC has developed the corporate governance system in pursuit of sustainable growth, by adopting modern management in compliance with GRC standards in three dimensions, namely good governance, risk management, and compliance management. The three dimensions are complimentary and related to one another. They foster teamwork and knowledge "sharing", welcome the ideas from employees and the management alike for IRPC's improvement, hold training and seminars to lay down knowledge and understanding on compliance, with the major KPI goal of IRPC's effectiveness and sustainability. The details are as follows:

- Governance: responsible for sustainable management and driving good corporate governance and anti-corruption policy in the organization for the purpose of being a good corporate citizenship for the benefits of all stakeholders. Mrs. Benja Sangsungnoen was appointed as the Corporate Governance Division Manager
- Risk Management: responsible for managing and monitoring risks to implement effective operations and strategies. Mr. Chanyut Phulumlerd was appointed as the Corporate Risk Management Division Manager
- Compliance: responsible for setting up a system, defining the scope of works and policy on compliance and turning it into Corporate Compliance Policy, ensuring that IRPC's operations are in compliance with the laws and corporate governance. Mr. Thawatchai Chaipramote was appointed as the Corporate Compliance and Secretary Division Manager.

**The Corporate Compliance Policy of IRPC and Group Companies**

The Board of Directors of IRPC, highly valuing business in compliance with applicable laws, rules and regulations and moving forward to the goals set with great success, as well as focusing on the creation of utmost benefits for the shareholders and

stakeholders toward mutual trust, stipulated “The Corporate Compliance Policy of IRPC and Group Companies”, 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 businesses so as to enable businesses to proceed smoothly under relevant laws and regulations, while maintaining their responsibility for society, communities, environment, and health of stakeholders-the foundation of sustainable development.

### **2. Fair competition and anti-monopoly**

The directors, executives, and employees of the IRPC Group companies are to comply with laws on antimonopoly 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.

“The Corporate Compliance Policy of IRPC and Group Companies” was announced on November 17, 2015 for executives and employees at all levels of IRPC and its subsidiaries to perform their duties in compliance with relevant laws and regulations.

In 2016, compliance work included work to review and analyze, monitor current compliance and benchmark it with international governance best practices, and make improvements to fit IRPC's operation and structure. The progress made included the following:

(1) Appointed License and Compliance Working Group consisting of legal, risk management, and compliance members, to integrate and push forward compliance mission in the GRC direction.

(2) Appointed working groups from various internal units to coordinate with energy-related government agencies and disclose IRPC's information on energy consumption and sale to the regulators as a way to manage the risk on false information and violation of laws.

(3) Set up legal control systems for efficient management, such as contract control, license renewal alert, and document control systems for letters of authorization and property deeds.

(4) Held a quarterly PTT Group's Compliance Networking Meeting to exchange views and define joint operating guidelines.

(5) Hired PricewaterhouseCoopers ABAS Ltd. to be a consultant in compliance work to set the right direction for the Company's compliance framework.

(6) Proceeded under the plan on the preparation of a Corporate Compliance Handbook to cover 2 parts:

Part 1: Compliance Policy Guideline which aimed to build and formalize compliance awareness within the organization.

Part 2: Compliance Handbook which is expected to deliver in 2017 after gathering all relevant document and analyzing the company's gap. The handbook will cover the structure, role and responsibility, and reporting lines of the related divisions in compliance with the risk management system in 3 lines of defense as follows:

Direct users are the 1<sup>st</sup> line.

Compliance unit, Corporate Legal, Corporate Governance unit, Internal Unit, and Risk Management unit which support the direct users are the 2<sup>nd</sup> line.

Internal Audit unit which inspects and evaluates the sufficiency of Internal control system including whistle blowing and complaints system serves as the 3<sup>rd</sup> line.

## Directors' Remuneration

The Board has appointed the Nomination and Remuneration Committee to consider the guidelines for the compensation of IRPC's directors and members

of the sub-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. The compensation criteria surveyed by Thai Institute of Directors (IOD) and SET are also used in the consideration.

The compensation proposed for 2016 was comparable to the median of peer companies of the resources group according to the report on directors' compensation 2014, prepared by IOD.

3. The scopes of work and assigned responsibilities of directors and sub-committees are also considered.

4. The Chairman of the Board and the Chairmen of the sub-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 directors and sub-committee members must be approved by the shareholders' meeting.

The 2016 Annual General Meeting held on April 1, 2016, approved the compensation of the Board and sub-committees at the same rate of those of 2015 as detailed below:

1. Board and sub-committees' compensation in 2016 (The compensation rate has been used since 2006)

Directors	Monthly compensation/person	Meeting allowance/person
1. Board		
Chairman	60,000 baht	60,000 baht
Director	45,000 baht	45,000 baht
2. Director Sub-Committees, i.e. Audit Committee, Nomination and Remuneration Committee, Corporate Governance Committee, Risk Management Committee and other sub committees as may be established in the future.		
Chairman	-	60,000 baht
Director	-	45,000 baht

## 2. Bonuses for Directors:

Bonuses for directors correspond with IRPC's performance. For 2015, the Nomination and Remuneration Committee proposed a directors' bonus of 28 million baht or 0.30% of IRPC's net profit. The amount will be allocated to each director by their meeting attendance. In addition, the Board Chairman will be paid 30 percent higher than other directors.

The compensation received by each director in 2016 is summarized below:

(Unit : Baht)

Name	Monthly compensation	Meeting allowance for Board	Meeting allowance for sub-committee	Bonus (2014 performance)	Total
1. Mr. Tevin Vongvanich <sup>(1)</sup>	720,000	720,000	-	449,383	1,889,383
2. Mr. Woothisarn Tanchai	540,000	540,000	300,000	1,555,556	2,935,556
3. Mr. Nuttachat Charuchinda <sup>(2)</sup>	363,000	360,000	240,000	-	963,000
4. Mr. Charnsin Treenuchagron	540,000	540,000	180,000	345,679	1,605,679
5. Mr. Chavalit Punthong	540,000	540,000	90,000	172,840	1,342,840
6. Mr. Songpope Polachan	540,000	540,000	735,000	2,074,074	3,889,074
7. Mr. Pramual Chanpong	540,000	540,000	315,000	2,074,074	3,469,074
8. Mr. Somnuk Bomrungsalee	540,000	540,000	90,000	2,074,074	3,244,074
9. Mr. Anusorn Sangnimnuan <sup>(3)</sup>	187,258	180,000	180,000	-	547,258
10. Lt. Gen. Sasin Thongpakdee	540,000	405,000	270,000	1,382,716	2,597,716
11. Gen. Theppong Tippayachan <sup>(4)</sup>	180,000	135,000	-	-	315,000
12. Mr. Ekniti Nitithanprapas	540,000	540,000	180,000	172,840	1,432,840
13. Mr. Jessada Promjart <sup>(5)</sup>	428,226	405,000	180,000	-	1,013,226
14. Ms. Ruenvadee Suwanmongkol <sup>(6)</sup>	405,000	360,000	225,000	-	990,000
15. Mr. Sukrit Surabotsopon	540,000	540,000	225,000	2,074,074	3,379,074
16. Mr. Cherdpong Siriwit <sup>(7)</sup>	360,000	360,000	480,000	2,074,074	3,274,074
17. Mr. Watcharakiti Watcharothai <sup>(8)</sup>	304,839	315,000	240,000	2,074,074	2,933,913
18. Mr. Sarun Rungkasiri <sup>(9)</sup>	139,500	135,000	195,000	2,074,074	2,543,574
19. Mr. Triumph Jalichandra <sup>(10)</sup>	136,500	135,000	135,000	2,074,074	2,480,574
20. Mr. Prasit Suebchana <sup>(11)</sup>	4,355	-	-	1,901,235	1,905,590
Total	8,088,678	7,830,000	4,260,000	22,572,839	42,751,517

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 returned to PTT Plc his director's remuneration in compliance with the conditions stipulated in PTT's President Employment Agreement.
2. Mr. Nuttachat Charnuchinda was appointed director following the resolution of the Board at Meeting No. 4/2016, effective from April 28, 2016.
3. Mr. Anusorn Sangnimnuan was appointed independent director following the resolution of Board Meeting No. 8/2016 effective from August 26, 2016.
4. Gen. Theppong Tippayachan was appointed independent director following the resolution of Board Meeting No. 8/2016 effective from August 26, 2016.
5. Mr. Jessada Promjart was appointed independent director following the resolution of Board Meeting No. 3/2016 effective from March 15, 2016
6. Ms. Ruenvadee Suwanmongkol was appointed independent director following the resolution of the 2016 AGM on April 1, 2016
7. Mr. Cherdpong Siriwit reached 70 years of age, (IRPC's good governance principles stipulating the age of directors of not over 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. Triumph Jalichandra completed his term at the 2016 AGM on April 1, 2016
11. Mr. Prasit Suebchana tendered his resignation with effect from January 4, 2016



## Management Compensation

Compensation of the President 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 remuneration component and criteria to the Board for consideration in January or February.
2. After the approval of the Board, the President is informed and acknowledge them.
3. In December, the Nomination and Remuneration Committee evaluates the President's performance during the year, based on the defined criteria and supporting justification.
4. The Nomination and Remuneration Committee propose the President's performance evaluation to the Board for approval.

In 2016 the Board approved the performance assessment criteria for the President, which consisted of challenging targets and covered both monetary

and non-monetary aspects. 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

IRPC annually measures the performance of the management at every level by defining a performance assessment policy under the Performance Management System (PMS), consisting of 2 important issues as follows:

- (1) Key Performance Indicators (KPIs), representing key missions cascaded down from the corporate level each year and matching IRPC's goals.
- (2) Job competency, a behavioral assessment tool for a person's ability. These two elements help IRPC achieve its goals with quality and sustainability.

In 2016, compensation for 17 management members in the forms of salary, bonuses, and contribution to provident fund totaled 112.39 million baht.

(Unit : Million Baht)

Compensation	2015	2016
Remuneration		
Salary	86.27	76.57
Bonus	35.41	28.87
Other remuneration		
Provident Fund	5.88	6.95
<b>Total</b>	<b>127.56</b>	<b>112.39</b>



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Position Table of Directors and Executives (as of 31 December 2016)

No.	Name	IRPC Plc.	Subsidiaries						Associated Companies/ Related Companies					
			IRPC Polyol Co., Ltd.	Thai ABS Co., Ltd.	IRPC Oil Co., Ltd.	IRPC Technology Co., Ltd.	IRPC A&L Co., Ltd.	Rakpasak Co., Ltd.	PTT Energy Solutions Co., Ltd.	UBE Chemical (Asia) Plc.	IRPC Clean Power Co., Ltd.	IRPC - PCC Co., Ltd.	PTT Plc.	PTT Global Chemical Plc.
1	Mr. Tevin Vongvanich	X											/, //	
2	Mr. Woothisarn Tanchai	/												
3	Mr. Nattachat Charuchinda	/												
4	Mr. Chansin Treenuchagron	/											//	
5	Mr. Chavalit Punthong	/											//	
6	Mr. Songpope Polachan	/												
7	Mr. Pramual Chanpong	/												
8	Mr. Somnuk Bomrungsalee	/												
9	Mr. Anusorn Sangnimnuan	/												
10	Gen. Sasin Thongpakdee	/												
11	Gen. Theppong Tippayachan	/												
12	Mr. Ekniti Nitithanprapas	/												
13	Mr. Jessada Promjart	/												
14	Miss Ruenvadee Suwanmongkol	/												
15	Mr. Sukrit Surabotsopon	/, //	X	X	X	X	X		/	/		X	//	
16	Mr. Pongpraphan Titathavewatana	//					/				/			
17	Mr. Somkiat Lertritpuwadol	//		/	/		/			/		/		
18	Mr. Somkiat Lertritpuwadol	//	/	/	/		/			/	/	/	//	
19	Mr. Thammasak Panyowatkool	//				/								
20	Ms. Monwipa Chooipiban	//				/								
21	Mr. Pravet Assavadakorn	//	/											
22	Mr. Phothiwat Paopongchuang	//				/								
23	Ms. Awrapin Ketratanakul	//												
24	Ms. Wanida Utaisomnapa	//												
25	Mr. Vichit Nittayanonte	//	/	/			/					/		
26	Mr. Veerawat Srinoradithlert	//												
27	Mr. Trisdee Watanangkur	//												
28	Mr. Woravuth Sivapetranart	//		/										
29	Mr. Kraisit Anukoolutaiwong	//				/								
30	Mr. Sirimet Leepagorn	//			/						/			
31	Mr. Chalor Panutrakul	//												

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

## Director of Subsidiaries (as of 31 December 2016)

### 1. IRPC Oil Co., Ltd.

Name	Position
1 Mr. Sukrit Surabotsopon	Chairman
2 Mr. Sommai Khowkachaporn	Member
3 Mrs. Rachadaporn Rajchataewindra	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 Mr. Sommai Khowkachaporn	Member
3 Mrs. Rachadaporn Rajchataewindra	Member
4 Mr. Pravet Assavadakorn	Member
5 Mr. Vichit Nittayanonte	Acting Managing Director

### 3. Thai ABS Co., Ltd.

(Transferring the business to IRPC Public Company Limited on August 1, 2559.)

Name	Position
1 Mr. Sukrit Surabotsopon	Chairman
2 Mr. Sommai Khowkachaporn	Member
3 Mrs. Rachadaporn Rajchataewindra	Member
4 Mr. Somkiat Lertritpuwadol	Member
5 Mr. Woravuth Sivapetranart	Member
6 Mr. Vichit Nittayanonte	Acting Managing Director

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

Name	Position
1 Mr. Sukrit Surabotsopon	Chairman
2 Mrs. Rachadaporn Rajchataewindra	Member
3 Mr. Pongpraphan Titathavewatana	Member
4 Mr. Tochiro Kojima	Member
5 Mr. Hideyuki Tokimasa	Member
6 Mr. Takayuki Amano	Member
7 Mr. Hiroshi Osubo	Member
8 Mr. Chalermchai Somboonpakorn	Member
9 Mr. Vichit Nittayanonte	Member
10 Mr. Somkiat Lertritpuwadol	Acting Managing Director

### 5. IRPC Technology Co., Ltd.

Name	Position
1 Mr. Sukrit Surabotsopon	Chairman
2 Mr. Thammasak Panyowatkool	Member
3 Miss Monwipa Choopiban	Member
4 Mr. Kraisit Anukoolutaiwong	Member
5 Mr. Preecha Phokawat	Member
6 Mr. Phothiwat Paopongchuang	Managing Director

### 6. Rakpasak Co., Ltd. (TPI Oil (2001) Co., Ltd.)

Name	Position
1 Mr. Weerachai Ariyapornpiroon	Member
2 Mr. Chalermchai Somboonpakorn	Member
3 Mr. Songklod Charoenphorn	Member
4 Mr. Somboon Satsin	Managing Director

## Number of shares held by the directors as of December 31, 2016

No	Name	(As of December 31, 2015) Shareholding/ Number of shares	(As of December 31, 2016) Shareholding / Number of shares	Share increase (decrease) during the year	Remark
1	Mr. Tevin Vongvanich Spouse Children under legal age	0.00000% 900 none none	0.00000% 900 none none	not change not change not change	
2	Mr. Woothisarn Tanchai Spouse Children under legal age	none none none	none none none	not change not change not change	
3	Mr. Nuttachat Charuchinda Spouse Children under legal age	N / A N / A N / A	none none none	not change not change not change	Appointed on April 29, 2016
4	Mr. Charnsin Treenuchagron Spouse Children under legal age	none none none	none none none	not change not change not change	
5	Mr. Chavalit Punthong Spouse Children under legal age	none none none	none none none	not change not change	
6	Mr. Songpope Polachan Spouse Children under legal age	none none none	none none none	not change not change not change	
7	Mr. Pramual Chanpong Spouse Children under legal age	none none none	none none none	not change not change not change	
8	Mr. Somnuk Bomrungsalee Spouse Children under legal age	none none none	none none none	not change not change not change	
9	Mr. Anusorn Sangnimnuan Spouse Children under legal age	N / A N / A N / A	none none none	not change not change not change	Appointed on August 27, 2016
10	Gen. Sasin Thongpakdee Spouse Children under legal age	none none none	none none none	not change not change not change	
11	Gen. Theppong Tippayachan Spouse Children under legal age	N / A N / A N / A	none none none	not change not change not change	Appointed on September 1, 2016



No	Name	(As of December 31, 2015) Shareholding/ Number of shares	(As of December 31, 2016) Shareholding / Number of shares	Share increase (decrease) during the year	Remark
12	Mr. Ekniti Nitithanprapas Spouse Children under legal age	none none none	none none none	not change not change not change	
13	Mr. Jessada Promjart Spouse Children under legal age	N / A N / A N / A	0.00002% 5,000 0.00010% 20,000 none	not change not change not change	
14	Ms. Ruenvadee Suwanmongkol Spouse Children under legal age	N / A N / A N / A	none none none	not change not change not change	Appointed on April 1, 2016
15	Mr. Sukrit Surabotsopon Spouse Children under legal age	0.03426% 7,000,000 none none	0.03915% 8,000,000 none none	0.00489% 1,000,000 not change not change	
<b>Directors who completed the terms/resigned/retired during the year</b>					
16	Mr. Cherdpong Siriwit Spouse Children under legal age	none none none	N / A N / A N / A	not change not change not change	reached 70 years of age
17	Mr. Watcharakiti Watcharothai <sup>(7)</sup> Spouse Children under legal age	0.00127% 260,250 none none	N / A N / A N / A	not change not change not change	Resigned on July 25, 2016
18	Mr. Sarun Rungkasiri Spouse Children under legal age	none none none	N / A N / A N / A	not change not change not change	Resigned on April 4, 2016
19	Mr. Triumph Jalichandra Spouse Children under legal age	none none none	N / A N / A N / A	not change not change not change	completed his term on April 1, 2016
20	Mr. Prasit Suebchana Spouse Children under legal age	none none none	N / A N / A N / A	not change not change not change	Resigned on January 4, 2016

## Number of shares held by the management as of December 31, 2016

No	Name	(as of December 31, 2015) Shareholding/ Number of shares	(as of December 31, 2016) Shareholding/ Number of shares	Share increase (decrease) during the year
1	Mr. Sukrit Surabotsopon	0.03426% 7,000,000	0.03915% 8,000,000	0.00489% 1,000,000
	Spouse	none	none	not change
	Children under legal age	none	none	not change
2	Mr. Pongpraphan Titathavewatana	0.00129% 264,478	0.00178% 364,478	0.00049% 100,000
	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	0.00060% 123,600	0.00124% 253,600	0.00064% 130,000
	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 Ketratanakul	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	0.00031% 63,292	0.00055% 113,292	0.00024% 50,000
	Spouse	0.00015% 29,862	0.00015% 29,862	not change
	Children under legal age	none	none	not change
10	Mr. Kraisit Anukoolutaiwong	0.00000% 1	0.00000% 1	not change
	Spouse	none	none	not change
	Children under legal age	none	none	not change

No	Name	(as of December 31, 2015) Shareholding/ Number of shares	(as of December 31, 2016) Shareholding/ Number of shares	Share increase (decrease) during the year
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. Trisdee Watanangkur	0.00174% 355,866	0.00174% 355,866	not change
	Spouse	none	none	not change
	Children under legal age	none	none	not change
15	Mr. Woravuth Sivapetranart	0.00063% 129,351	0.00088% 179,351	0.00024% 50,000
	Spouse	none	none	not change
	Children under legal age	none	none	not change
16	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
17	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 2016 and for the past five years, no directors and management team members have records of wrongful acts under the

- (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.

## 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>	<p><b>Headquarters and Plant:</b> 299 Moo 5, Sukhumvit Road, Choen Noen, Rayong, Thailand Tel. + 66 (0) 3861-1333 Fax. + 66 (0) 3861-2813</p> <p><b>Bangkok Office:</b> 555/2, Energy Complex, Building B, 6<sup>th</sup> Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Tel. + 66 (0) 2649-7000 Fax. + 66 (0) 2649-7001</p>
<b>Website</b>	<a href="http://www.irpc.co.th">www.irpc.co.th</a>
<b>References</b>	
<b>Share Registrar</b>	Thailand Securities Depository Company Limited 93 Stock Exchange of Thailand Building, Ratchadaphisek Road, Din Daeng, Bangkok 10400 Tel. + 66 (0) 2009-9000 Fax. + 66 (0) 2009-9991
<b>Auditor</b>	Mr. Wichian Kingmontree CPA No. 3977, Pricewaterhouse Coopers ABAS Limited 179/74-80 Bangkok City Tower, 15 <sup>th</sup> Floor, South Sathorn Road, Thung Mahamek, Sathorn, Bangkok 10120, Thailand Tel. + 66 (0) 2344-1000 Fax + 66 (0) 2286- 5050
<b>Baht Bond Registrar</b>	TMB Bank Public Company Limited 3000 Phaholyothin Road, Chompon, Chatuchak, Bangkok 10900, Thailand Tel. +66 (0) 2299-1111

## Shareholding structure

As of February 24, 2016, the closing date of the share register book, IRPC's top ten shareholders were as follows.

Name	Shares	% shares
1. PTT Plc	7,869,694,600	38.51
2. Government Savings Bank	1,950,000,000	9.54
3. Thai NVDR Co., Ltd	1,260,737,305	6.17
4. Chase Nominees Ltd.	447,554,222	2.19
5. Social Security Officer	244,289,400	1.20
6. State Street Bank Europe Ltd.	240,709,119	1.18
7. State Street Bank and Trust Co.	195,853,496	0.96
8. HSBC (Singapore) Nominees Pte. Ltd.	157,639,760	0.77
9. East Fourteen Ltd.- Dimensional EmerMktsValue FD	125,897,100	0.62
10. People's Bank of China	123,047,900	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, 2016. 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, 2016. 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.



## 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 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	99.99	300
4	<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
5	<b>IRPC A&amp;L Co., Ltd.</b> <b>Address :</b> 5555/2 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 <i>Remarks: Subsidiary of Thai ABS Co., Ltd.</i>	59.98	10

## REVENUE STRUCTURE

Business	Operator/IRPC equity	2014		2015		2016	
		Baht Mil.	Ratio	Baht Mil.	Ratio	Baht Mil.	Ratio
1. Petroleum	IRPC, IRPC Oil (99.99%)	205,657	75%	143,295	72%	113,152	67%
2. Petrochemical	IRPC, Thai ABS (99.99%) <sup>(1)</sup> IRPC Polyol (99.99%)	63,853	24%	53,111	27%	52,115	31%
3. Others <sup>(2)</sup>	IRPC	3,458	1%	3,189	1%	3,082	2%
<b>Total net sales revenue</b>		<b>272,968</b>	<b>100%</b>	<b>199,595</b>	<b>100%</b>	<b>168,349</b>	<b>100%</b>
Share of profit (loss) from investment in associates and joint ventures		(139)		(184)		125	
Domestic : export sales revenue		61% : 39%		63% : 37%		58% : 42%	

**Note :**

<sup>(1)</sup> IRPC took transfer of the entire business from Thai ABS Co., Ltd., on August 1, 2016, coinciding with the formal dissolution of Thai ABS

<sup>(2)</sup> "Others" consists of power and utility sales revenue

## CONNECTED TRANSACTIONS

### Connected Transactions between IRPC and Connected Parties

For Fiscal Year 2016, 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 contractual agreements at reasonable prices and fair conditions. The relationship and connected transactions are described below:

Connected Party/Relationship	Transaction	2016	2015	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. Chavalit Punthong Mr. Sukrit Surabotsopon	- Sale of goods - Purchase of goods - Other revenue - Sales & administrative expenses - Account receivables - Account payable - Other receivable - Other payable	18,100 108,594 8 43 1,175 16,653 1 2	19,806 128,922 20 50 866 22,758 13 4	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.
<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 receivables - Account payable	9,591 13,317 - 1 1,397 1,481	14,531 20,055 1 1 1,024 1,668	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 - Purchase of goods - Revenue from dividends - Account receivables - Account payable	95 - 56 8 2	994 910 25 8 -	IRPC sold crude oil and provided tank storage service to TOP. IRPC bought crude oil from 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 receivables	280 4 37	226 10 19	IRPC sold aromatic extracts to TLB. IRPC bought lube base oil from TLB.
<b>Thai Paraxylene Co., Ltd. (TPX)</b> Relationship : 99.99% of shares held by TOP	- Sale of goods - Purchase of goods - Account payable	- 824 21	23 1,218 51	IRPC sold aromatics to TPX. IRPC bought aromatics from TPX.
<b>Thaioil Marine Co., Ltd. (TOM)</b> Relationship : 99.99% of shares held by TOP	- Service revenue - Account receivables	14 2	21 1	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 receivables - Account payable	1,217 82 100 8	1,332 75 66 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 receivables	735 40	674 53	IRPC sold aromatics to TOP Solvent (Vietnam).

Connected Party/Relationship	Transaction	2016	2015	Nature and Condition
<b>Sak Chaisidhi Co., Ltd. (SAKC)</b> Relationship : 80.52% of shares held by TS	- Sale of goods - Account receivables	251 8	364 20	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 - Account payable	139 1	82 -	IRPC paid for technical services to PTTES.
<b>PTT Polymer Logistics Co., Ltd. (PTTPL)</b> Relationship : 50.00% of shares held by PTT - Common director: Mr. Chansin Treenuchagorn	- Other revenue - Sales & administrative expenses	- 2	1 2	IRPC earned personnel wages from PTTPL. IRPC paid transport expenses to PTTPL
<b>PTT Polymer Marketing Co., Ltd. (PTTPM)</b> Relationship : 50.00% of shares held by PTT - Common director: Mr. Chansin Treenuchagorn	- Sale of goods - Purchase of goods - Account receivables - Account payable	161 623 8 53	119 800 5 51	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 receivables	20 10	4 2	IRPC sold polymers to PMDMCC.
<b>Energy Complex Co., Ltd. (EnCo)</b> Relationship : 50.00% of shares held by PTT	- Sales & administrative expenses - Account payable	94 1	90 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 - Expenses from oil futures contracts - Account receivables - Other payable	8,734 669 115 438 192	11,024 928 282 572 63	IRPC sold petroleum products to PTTT IRPC bought petroleum products from PTTT Expenses from oil futures contracts entered with PTTT.
<b>PTT Asahi Chemicals Co., Ltd. (PTTAC)</b> Relationship : 48.50% of shares held by PTT	- Sale of goods - Other revenue - Account payable	1,158 - 122	1,206 1 85	Thai ABS bought acrylonitrile (AN) from PTTAC. IRPC provided IT services to PTTAC.
<b>HMC Polymers (HMC)</b> Relationship : 41.44% of shares held by PTT	- Other revenue	1	1	IRPC provided training services to HMC.
<b>Dhipaya Insurance Plc. (TIP)</b> Relationship : 13.33% of shares held by PTT	- Other revenue - Sales & administrative expenses	- 513	1,313 844	IRPC received compensation from TIP. IRPC paid premiums for building, health and accident insurance to TIP.

Connected Party/Relationship	Transaction	2016	2015	Nature and Condition
<b>PTT Tank Terminal Co., Ltd. (PTTTANK)</b> Relationship : 99.99% of shares held by PTT	- Other revenue - Other receivable	3 1	2 1	IRPC received personnel wages from PTTTANK.
<b>Business Service Alliance Co., Ltd. (BSA)</b> Relationship : 99.99% of shares held by PTT	- Other revenue - Sales & administrative expenses - Other payable	3 229 1	4 248 6	IRPC Oil received 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. Phothiswat Paopongchuang	- Sales & administrative expenses	5	5	IRPC funded publicity for the PTT Rayong soccer team for SSA.
<b>PTT ICT Solutions Co., Ltd. (PTTICT)</b> Relationship : 40.00% of shares held by PTTGC 20.00% of shares held by PTT	- Other revenue - Sales & administrative expenses - Other payable	1 35 2	- 36 1	IRPC received revenue for program development from PTTICT IRPC paid IT service fees to PTTICT.
<b>Thai Styrenics Co., Ltd. (TSCL)</b> Relationship : 99.99% of shares held by PTTGC	- Sale of goods - Account receivables	198 24	199 7	IRPC sold aromatics to TSCL.
<b>PTT Phenol Co., Ltd. (PPCL)</b> Relationship : 99.99% of shares held by PTTGC	- Sale of goods	-	1	IRPC sold aromatics to PPCL
<b>TOC Glycol Co., Ltd. (TOCGC)</b> Relationship : 99.99% of shares held by PTTGC	- Purchase of goods - Account payable	34 10	36 6	IRPC Polyol bought petrochemical products from TOCGC.
<b>NPC Safety and Environmental Service Co., Ltd. (NPC S&amp;E)</b> Relationship : 99.99% of shares held by PTTGC	- Purchase of goods - Sales & administrative expenses	- 2	1 2	IRPC bought safety suits and equipment from NPC S&E. IRPC paid for safety equipment rent to NPC S&E.
<b>PTT Maintenance and Engineering Co., Ltd. (PTTME)</b> Relationship : 60.00% of shares held by PTTGC	- Sales & administrative expenses - Other payable	8 10	- -	IRPC paid engineering design fees to PTTME.
<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. Pongpraphan Titathavewatana Mrs. Ratchadaporn Rajchataewindra Mr. Sirimet Leepagorn	- Sale of goods - Purchase of goods - Other revenue - Account receivables - Account payable - Other payable	76 2,055 4 28 250 184	64 257 10 20 286 106	IRPC sold power and steam and provided engineering services to IRPC-CP. IRPC bought power and steam from IRPC-CP. IRPC received central (common) services charges from IRPC-CP.



No.	Company	% of shares holding	Paid- up Capital (Million Baht)
6	<b>IRPC - PCC 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> Sale of polyurethanes <i>Remarks: Joint venture of IRPC Polyol Co., Ltd.</i>	49.99	10
7	<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	2,336
8	<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
9	<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, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Tel. +66 (0) 2140-2000  <b>Type of Business :</b> Engineering Consultancy	20.00	150
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 table includes only companies with active operations

# BUSINESS STRUCTURE

Business Structure and Shareholding

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Nature of Business

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Integrated Refinery and Petrochemical  
Complex Flow Chart

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Individual Product Lines' Business

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Market Overview and Industry Outlook

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Revenue Structure

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Connected Transactions

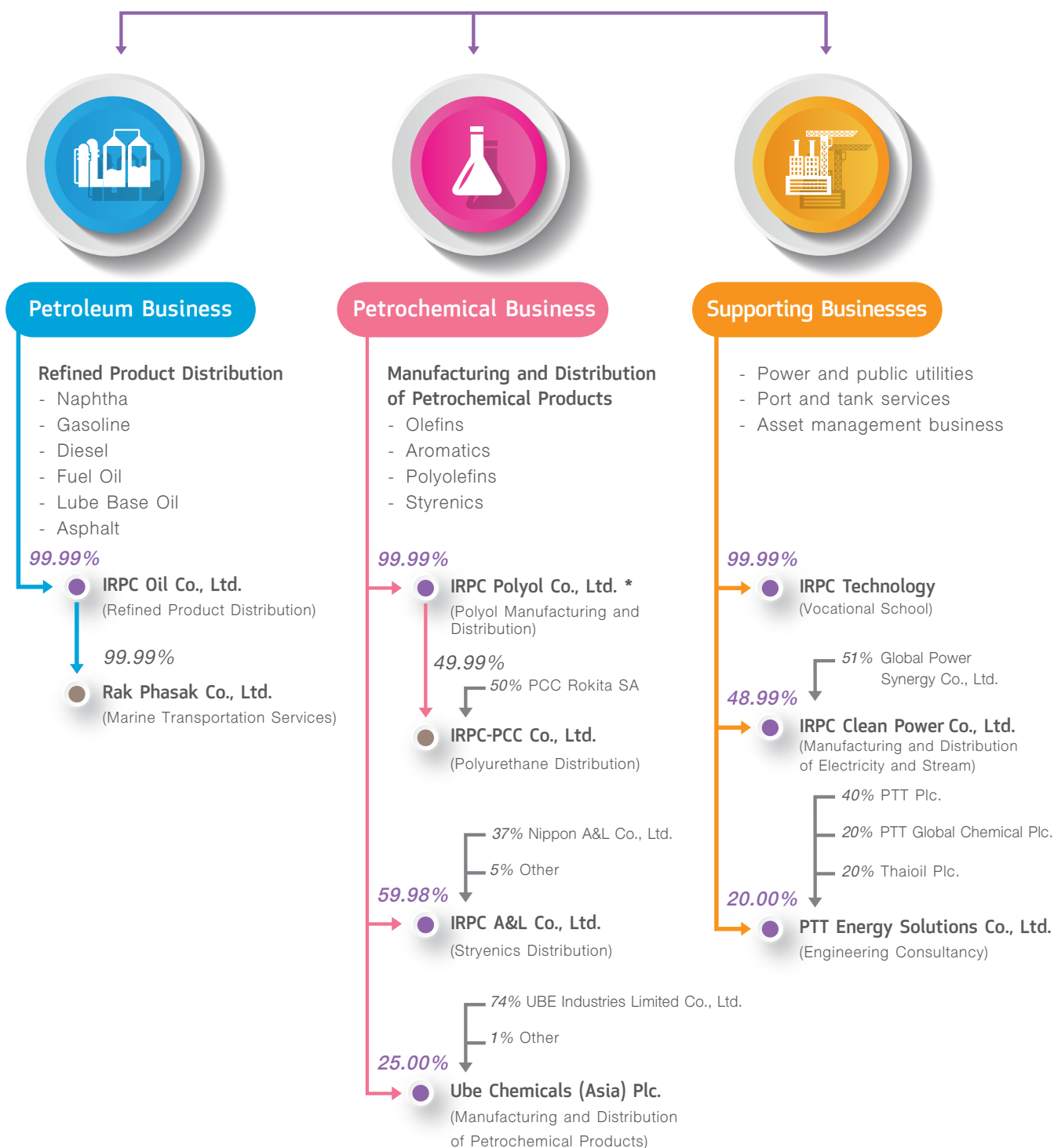
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# BUSINESS STRUCTURE AND SHAREHOLDING

## IRPC Public Company Limited



**Remark** : \*25% shares of IRPC Polyol Co., Ltd. was sold to PCC Rokita SA. of Poland on January 31, 2017

: The chart includes only companies with active operations

## NATURE OF BUSINESS

With a refinery and petrochemical complexes located in its own industrial zone in Rayong province, IRPC is an integrated pioneer in Southeast Asia's petrochemical industry. The zone is fully equipped with infrastructure and basic utilities supporting industries, including a deepsea terminal, oil tank service, and a power plant.

### Petroleum business

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

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

### Petrochemical business

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IRPC's upstream petrochemical products consist of olefins (1,221 KTA capacity) and aromatics (367 KTA capacity), both serving as downstream petrochemical feedstock. Sold under the POLIMAXX brand to domestic and international plastic manufacturers, polyolefins consist of HDPE and PP (615 KTA total capacity); styrenics, ABS, SAN, EPS, and PS (334 KTA total capacity).

IRPC's petrochemical business strives for growth and keeping pace with change, developing the quality of life, together with enhancement of international competitiveness by inventing and creating innovative styrenics products like Green ABS, ABS powder, impact modifier-MBS, anti-dripping additives, and anti-bacterial products, and innovative polyolefins such as UHMW-PE, polyolefins catalyst, baby-bottle polypropylene, and antimicrobial compounds.



## Supporting businesses

### Power and public utilities

IRPC provides basic public utility services along with public utility systems. It generates and distributes power, industrial water, and air systems; provides wastewater treatment for industrial customers and EGAT (Electricity Generating Authority of Thailand); and provides other business services in support of full business operations. Like other industrial estates, utilities are of sufficient volumes with high quality standards. Above all, our businesses must stay sustainably alongside communities, society, and the surroundings. Below are our public utility systems: **1. Electrical 2. Steam 3. Filtered, demineralized, cooling, raw, and firefighting water 4. Nitrogen, instrument air, plant air 5. Wastewater treatment.**

### Port and tank services

- **Located in the Eastern Region** at Amphoe Muang, Rayong, this deepsea port business features infrastructure, facilities, and international-standard dock services for domestic and international cargoes. The main terminal area consists of:
  - **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, and ores. The current annual cargo volumes exceed 2 million tons.
  - **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 2,000 vessels).
  - **Tank service:** Service is provided through more than 300 tanks for liquid petroleum and petrochemical products with a storage capacity of 2.9 million tons, designed to

accommodate IPRC's oil product distribution and the public alike. Equipped with efficient management systems, IPRC's team is experienced. Four IPRC oil depots are located in Rayong, Phra Padaeng (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 for customers.

### Asset management business

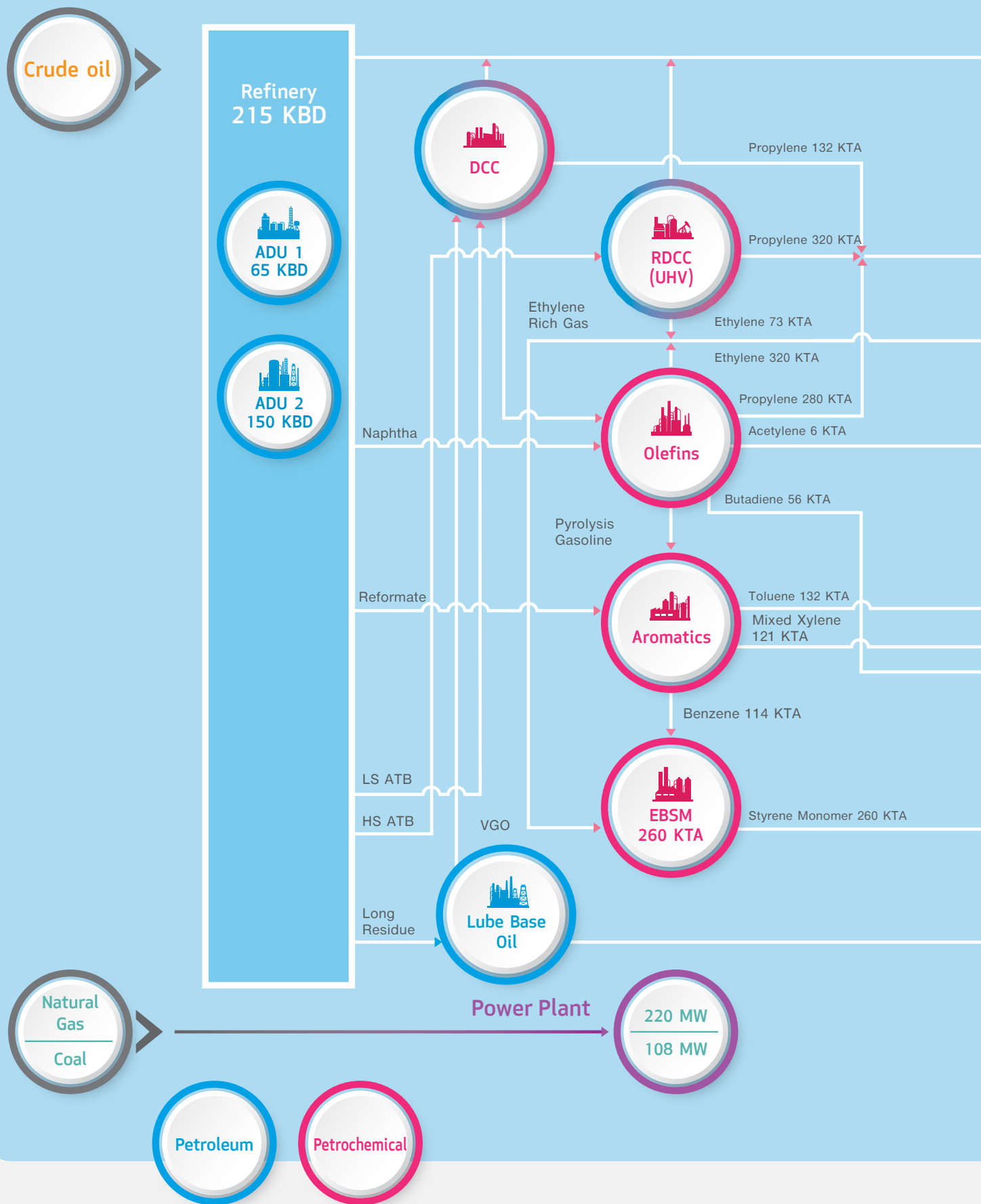
IRPC has set up a unit to manage high-potential land in Rayong and other provinces with a total acreage of some 12,000 rai to develop such land into EIZ (Eco-Industrial Zone) projects of industrial estates, industrial zones, and high-potential land. These projects are equipped with essential infrastructure and public utilities systems to accommodate target industries. Today, IPRC has secured approval to jointly operate businesses with the Industrial Estate Authority of Thailand in developing the Rayong Industrial Estate (Ban Khai) to serve worldwide prospective investors. In short, service is ready to accommodate projects of IPRC and the public alike at the following:

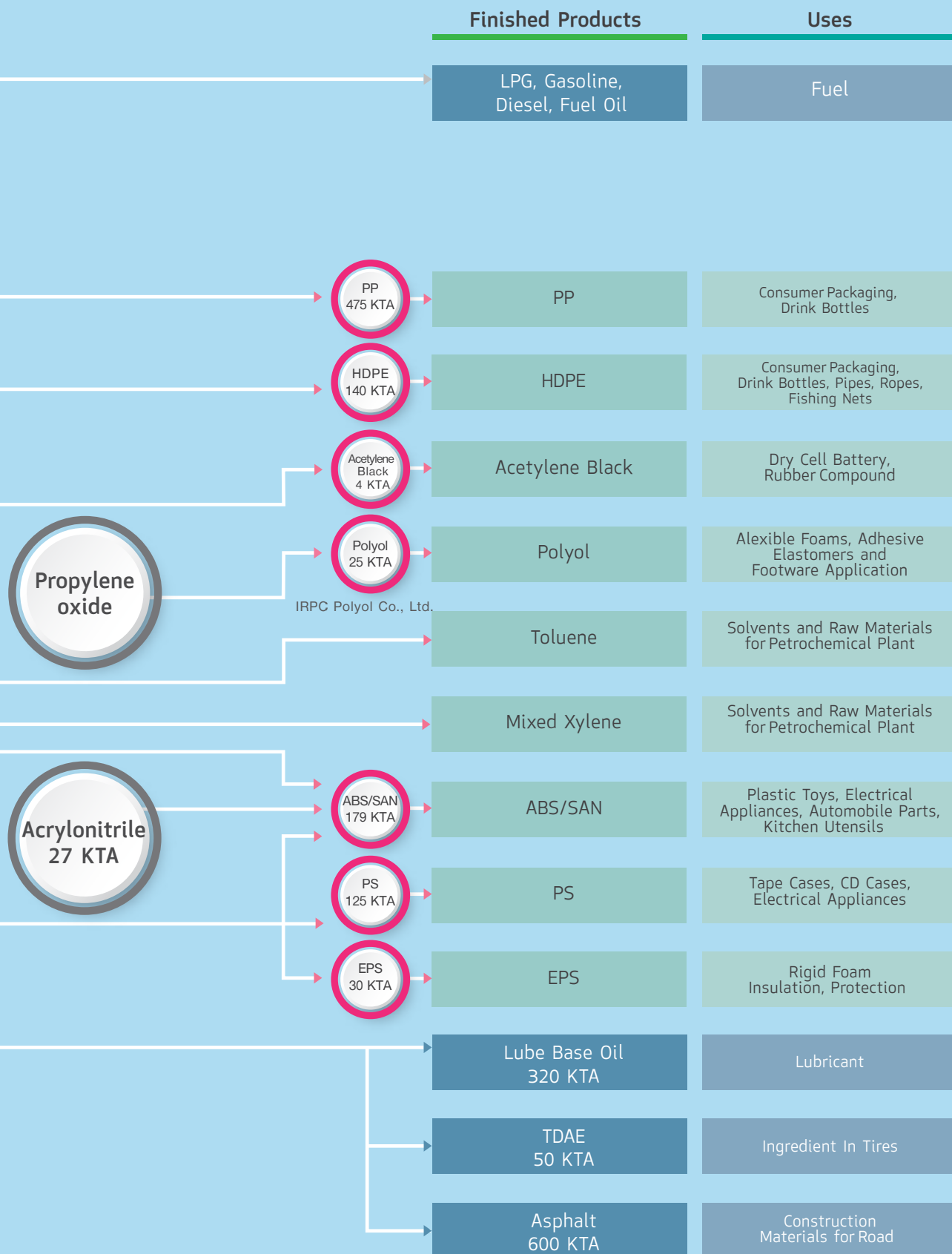
- 1. Industrial zone project:** IPRC Eco-Industrial Zone, Amphoe Muang, Rayong
- 2. Industrial estate project:** Rayong Industrial Estate (Ban Khai), Amphoe Ban Khai, Rayong
- 3. High-potential land:** Large plots of development-potential land, Amphoe Chana, Songkhla

The asset management business also houses IPRC Solution Provider, designed to provide full support to investors in IPRC Industrial Zone with skills and professionalism so that their businesses may grow in tandem with those of IPRC. Its services include plant and machinery maintenance, ICT, calibration and metrological services, metallurgical services, logistical and warehouse services, trailer-weighting services, and training on safety required by standards. Finally, the unit's unique advantages come from its location inside IPRC Industrial Zone, implying extra convenience and service speed.



# INTEGRATED REFINERY AND PETROCHEMICAL COMPLEX FLOW CHART





# INDIVIDUAL PRODUCT LINE BUSINESS

## 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, propane, and butane, and is common in household kitchens and various industries, and can also replace gasoline in gasoline engines.

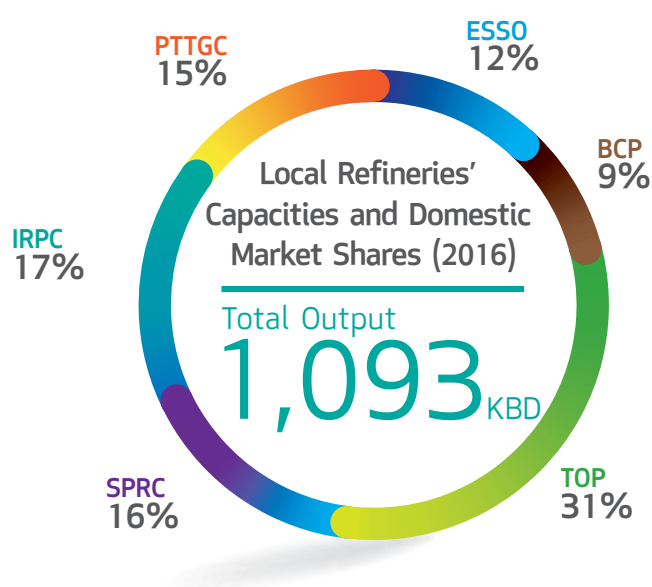
### 2. Lube Base Oil

- Lube Base Oil- consists of heavy distillates used for producing different grades of lubricants. At present, IRPC produces various grades for different purposes as follows:
  - 150 SN is used as a raw material for lubricants for the manufacturing industry, such as automotive and transport industries
  - 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.

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 used as 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.



*\*IRPC has the 2<sup>nd</sup> largest refining capacity in Thailand*

*Source: Department of Energy Business (January-November 2016)*



## Petrochemical Products

### 1. Olefins

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

Moreover, a by-product from the 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 and its subsidiaries produce polymer products (or plastic pellets) of the 'POLIMAXX' brand. Categorized as a downstream petrochemical, polymers yield various plastic products. IRPC's polymers are divided 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 a changing ambience.

#### 3.2 Polypropylene-PP

PP is very similar to HDPE and LDPE and can replace them to some degree. However, PP is tough and strong, with higher resistance to heat and tolerance to pressure and impact. It is 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, packing 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 sanitary ware 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 sanitary ware, 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:

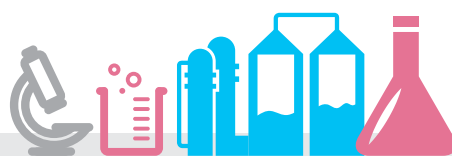
- **Packaging** such as shock-absorbing foam used in the packaging and electrical appliance industries
- **Block** such as heat insulation in the fishery industry's cold storage, construction, and decoration work.

## 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, 99.99%-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.

Petroleum and Petrochemical Products			
Petroleum Products	Petrochemical Products		
<b>Fuels</b> <ul style="list-style-type: none"> <li>Gasoline</li> <li>High-Speed Diesel</li> <li>Fuel Oil</li> <li>LPG</li> </ul>	<b>Olefins</b> <ul style="list-style-type: none"> <li>Ethylene</li> <li>Propylene</li> <li>Butadiene</li> <li>Acetylene Black</li> </ul>	<b>Aromatics</b> <ul style="list-style-type: none"> <li>Benzene</li> <li>Toluene</li> <li>Xylenes</li> </ul>	<b>Polymers</b> <ul style="list-style-type: none"> <li>HDPE</li> <li>PP</li> <li>Acrylonitrile-Butadiene-Styrene (ABS)</li> <li>Acrylonitrile Styrene (SAN)</li> <li>Polystyrene (PS)</li> <li>Expandable Polystyrene (EPS)</li> </ul>
<b>Lube Base Oil</b> <ul style="list-style-type: none"> <li>Lube Base Oil</li> <li>Long Residue</li> </ul>	<b>Polyol</b> <ul style="list-style-type: none"> <li>polyester</li> <li>polyether polyol</li> </ul>	<b>Specialties and innovative products</b>	
<b>Other Petroleum Products</b> <ul style="list-style-type: none"> <li>Naphtha</li> <li>Asphalt</li> </ul>	<b>Styrenics</b> <ul style="list-style-type: none"> <li>Green ABS</li> <li>Anti-dripping Additive</li> <li>Anti-bacteria Agent</li> <li>ABS Powder</li> </ul>	<b>Polyolefins</b> <ul style="list-style-type: none"> <li>Ultra High Molecular Weight Polyethylene</li> <li>Baby Bottle Polyethylene</li> <li>Antimicrobial Compound</li> <li>Marine Pipe</li> <li>Natural Coloring and Additive Carrier System</li> <li>Wood Plastic Composite</li> </ul>	



## 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: consist of

- **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.
- **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.

## Specialties and innovative products

Creative mediums for end-users' better life quality, consumer's safety, and environmental friendliness



### Environmental Friendliness:



**Green ABS** is the process which employs natural rubber particles instead of the artificial ones. It is one of the clean innovative agricultural project for Thai agriculturists.



**Wood Plastic Composite** is a form of plastic mixed with wooden particles, which provides similar quality as normal woods, but effectively reduces wood consumption.



### Life Quality:

**Anti-bacteria Agent** is used in the plastic particles to reduce bacteria but does not harm the plastic quality.

**Baby Bottle Polypropylene** A cancer-free plastic material which ensures safety for babies.

**Antimicrobial compound** A product that can cease microbial cultures, suitable for consumer packaging and medical uses.

**Natural Coloring** Is a process in which plastic particles are colored with pigments, which reduce the risk of left-over toxics found in synthetic pigments

## 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. UHMW-PE 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 (more than 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 properties of polymers. 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 Pipe** This compound is made with a special formula to prevent pipe surfaces from shellfish piercing along coast lines 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 comes in the form of 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**-Treasuring natural conservation, IRPC blends natural wood powder into the production 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 (2016)

Unit: KTA

Product	Company	Capacity	%
HDPE	IRPC Plc	140	7
	Thai Polyethylene Co., Ltd.	960	51
	Bangkok Polyethylene Plc	500	26
	PTT Global Chemical Plc	300	16
	<b>Total</b>	<b>1,900</b>	<b>100</b>
PP	IRPC Plc	475	24
	HMC Polymers Co., Ltd.	810	40
	Thai Polypropylene Co., Ltd.	720	36
	<b>Total</b>	<b>2,005</b>	<b>100</b>
ABS	Thai ABS Co., Ltd.	179	65
	Ineos ABS (Thailand) Co., Ltd.	95	35
	<b>Total</b>	<b>274</b>	<b>100</b>
EPS	Thai ABS Co., Ltd.	30	50
	Mingdi Chemical Co., Ltd.	30	50
	<b>Total</b>	<b>60</b>	<b>100</b>
PS	Thai ABS Co., Ltd.	125	34
	Siam Polystyrene Co., Ltd.	150	41
	Thai Styrenics Co., Ltd.	90	25
	<b>Total</b>	<b>365</b>	<b>100</b>

## MARKET OVERVIEW AND INDUSTRY OUTLOOK



IRPC focuses on product quality control while producing variety through market demand R&D work jointly undertaken with customers.

A low-cost integrated petrochemical producer, IRPC is fully equipped with production support systems, enhancing its cost competitive edge even during volatile-price periods.

### 1. Petroleum Product Market Overview and Competition

#### Crude Oil and Product Market Overview

Thailand's 2016 overall energy consumption increased by 1.8% from the previous year, in line with annual GDP that expanded by 3.2% with the improved economy driven by higher government investments, booming government and household spending, larger exports of products and services and higher private investments, especially for businesses in tourism and service sectors.

In 2016, Thailand's import of energy exceeded Baht 700 billion, most of which was crude oil. The 2016 average Dubai price was USD 41.3 per barrel, down from USD 50.9 per barrel in 2015. The lower price was due to constant market oversupply, especially at the beginning of the year, as both OPEC and non-OPEC producers then refused to cut down production and further proceeded with high outputs to compete for market shares and put pressure on US shale oil producers. The glut was exacerbated with the extra production in Iraq at 400,000 barrels per day after the war situation eased, and with the additional production in Iran at 700,000 barrels per day after the sanction was lifted on January 16, 2016.

The domestic refined products in 2016 totaled 61,696 million liters, equivalent to 169 million liters or 1.06 million barrels per day, down by 3% from the previous

year. The overall import stood at 3.452 billion liters, averaged to 9.5 million liters of 0.06 million barrels per day, a rise of 5% from 2015. The daily combined imports of propane and butane for LPG production and that of basic gasoline for gasohol production totaled 1.5 billion liters, or an average of 4.0 million liters per day. The decrease in crude imports resulted from the higher number of refinery shutdowns in 2016 than in the previous year, leading to higher import volumes of refined products and lower export.

Refined product consumption rose by 2% this year, with the increase in gasoline consumption of 10% or an average of 28.8 million liters per day. This included the consumption increase of all types of gasoline, except gasoline 95 as the prices of refined products dropped by Baht 3-4 per liter from the same period of 2015, following a drop in the world oil price, leading to more trips by personal vehicles.

Diesel consumption in 2016 rose by 4% to 60.4 million liters per day, following the price drop of Baht 1.80 per liter year-on-year. The number of diesel vehicles also rose by 4.1% this year.

This year, LPG consumption dropped by 9% to 16.3 million kilograms per day, largely in the transportation and petrochemical sectors. LPG consumption shrank 15.6% in the petrochemical sector to an average of 4.92 million kilograms per day and shrank 15.4% in the transportation sector to an average of 4.0 million kilograms per day. Household consumption, meanwhile,



increased by 0.4% to 5.74 million kilograms per day. The increase was higher in the industrial sector at 1.0% to 1.65 million kilograms per day.

Major domestic refining operators were PTT, Esso, Bangchak, Shell, Chevron and others, with their respective market shares shown below.

Refining operator	% Domestic Share
PTT	39
Esso	11
Bangchak	11
Shell	9
Chevron	7
IRPC	4
Other minor operators	19

Source: Department of Energy Business, January-December 2016

## 2016 Market Outlook

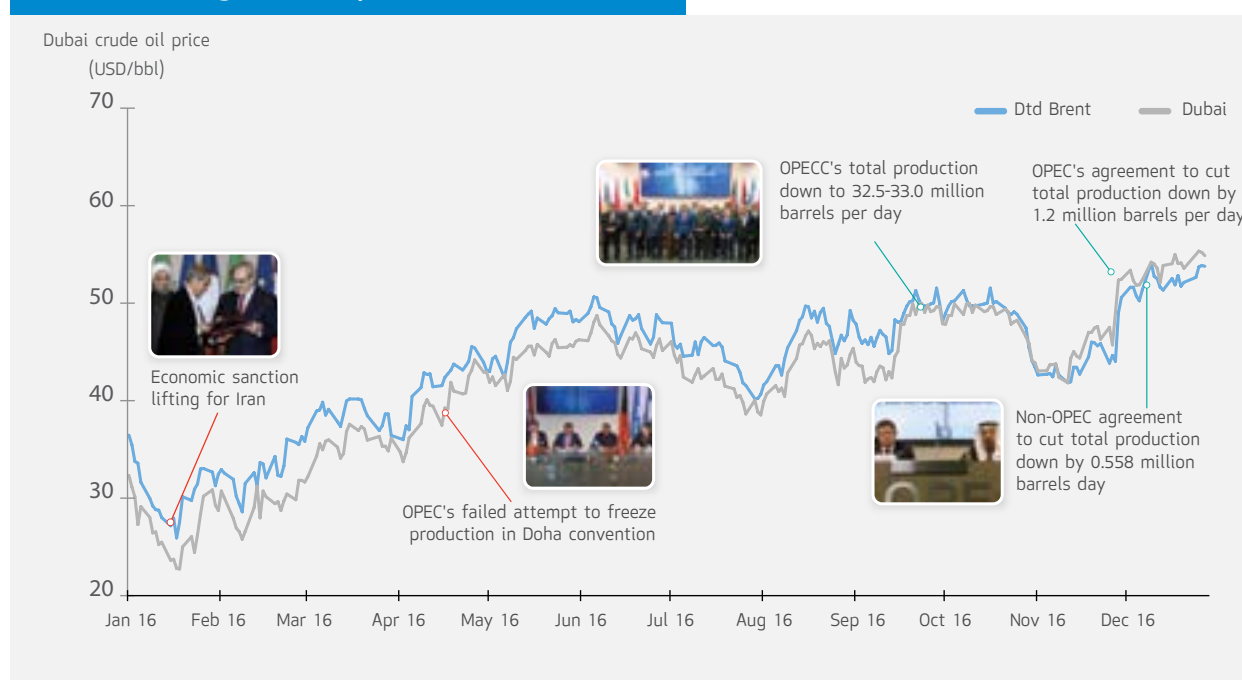
The 2016 crude oil price moved between USD 22-55 per barrel, with an average price of USD 41.27 per barrel, lower than the 2015 price due to market oversupply. The excess supply of 2 million barrels per day as the result of production ramp-up by OPEC producers was way over the increase in crude

oil demand by 1.3 million barrels per day, leading to market non-equilibrium. However, on November 30, OPEC members finalized an agreement to cut production by 1.2 million barrels per day from the October production level. Similarly, non-OPEC producers followed suits with a cut of 558,000 barrels per day from the October production level. Both agreements were set to take effect from January 2017 and would last six months. The total projected cut would be 1.8 million barrels per day and was expected to shore up the world crude price.

## 2017 Market Forecast

The overall crude oil price this coming year is forecasted to move between USD 50-55 per barrel, as demand continues to grow at 1.3 million barrels per day following the stronger global economy and amid the undersupply situation expected from OPEC agreement to cut production by 1.2 million barrels per day. However, the market is still faced with risks from production ramp-ups in Nigeria and Libya, and the supply uncertainty after the six-month agreement period which could result in the resumption of high outputs by OPEC in the second half of 2017. These factors, combined with the high crude inventory and the tendency to increase production in the US, continues to pressure the oil price.

## Factors affecting crude oil price in the world market



Source: Patts & Reuters

Moreover, the global economy is also faced with volatility and uncertainties resulting from the UK's decision to leave the EU (Brexit) and the US Federal Reserve (Fed) decision to increase the interest rate, leaving the USD volatile and putting pressure on the world oil price.

### IRPC Customers or Distribution Channels

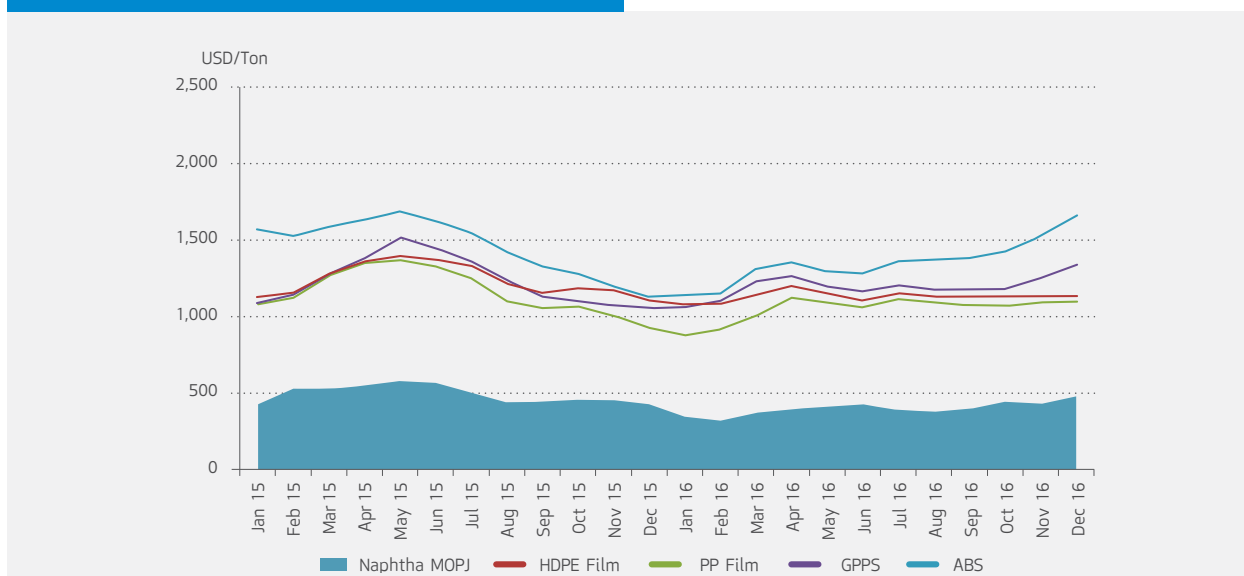
With emphases on quality control of all refined products to meet the standards defined by the Ministry of Commerce and on maximizing profits by distributing these products through selected distribution channels, IRPC delicately sets its product prices to fit well with the market and deploys cooperation synergy among group members on sales strategies to maximize profits.

Customers or distribution channels of IRPC can be categorized as follows.

- **Industrial Sale** This includes automotive companies, cargo vessels, buses, construction companies, and sales to affiliates.
- **Wholesales/Jobber** These are large and small wholesalers and jobbers who resell products either in wholesale or retail.
- **Sale to traders under Article 7** This includes large and medium-sized oil traders with oil depots who further distribute the products to end-users through their own networks.
- **Export** These are sales to overseas markets. Key markets for sea cargoes in Asia include Singapore, Cambodia, and Vietnam. Key markets for trucks in Indochina include southern China, Cambodia, Laos, and Myanmar. Total 2016 exports accounted for 34% of the overall sales.
- **Bunker** This is the sale of diesel, also known as automotive diesel oil (ADO) to ships and vessels harbored at the IRPC yard.
- **Fishery** This is the sale of diesel to fishery associations in territorial waters, known as green diesel. IRPC's green diesel market share this year was 50%.



## Prices of Feedstock and Petrochemical Products



Source : ICIS

## Strategies for Competition

In addition to its pricing strategy, IRPC focuses on competitive price-scaling strategy to maintain its market share, expand its customer base and increase sales volumes while maintaining appropriate profit margins. Other services that IRPC provides to its customers are as follows.

- **Oil depots** IRPC runs five oil depots to serve customers nationwide, with the Rayong Oil Depot operating round-the-clock. The distribution point at Mae Klong Depot in Samut Songkhram province was launched to facilitate distribution and provide more services to customers in western and upper southern provinces.



- **Transport** RPC operates a fleet of trucks for product distribution to customers across the country while managing a jetty and vessels to serve customers who prefer marine loading.
- **Personnel** IRPC has sales agents, sales coordinator, and a sales service department to serve customers. Its dispatch office takes purchase orders through SAP, the standard online and real-time system managing processing of interconnected data. This ensures accuracy and consistent standard service to enhance its service efficiency while reducing duplicate work and providing database to support executives and all operating level analyses, decision-making and administration. IRPC implemented the IRON system (IRPC Oil On Net: an electronic sales management system for petroleum products, integrating IRPC's supply chain management system with the in-house Total Business Solutions) to better respond to customer business transaction needs and increase its business efficiency while maintaining its operability capacity to further support other applications in various phases to enhance sales in other distribution channels.
- **Quality control** IRPC technicians are readily available to provide information and solutions to problems for customers, including making QC visits to customers' service stations and depots to instill confidence among all customers.

## 2. Petrochemical Market and Competition

### Petrochemical Products and Market Competition

The 2016 net export and import value of petrochemicals fell from the previous year by 10.17% and 8.81% respectively. The fall was largely contributed by the volatile and the declining crude oil price (the main petrochemical monomer) and by the vulnerability in global economic recovery, especially in Thailand's key export market countries such as China, the US, the EU and Japan.

The domestic economy in 2016 was estimated to expand by 3.2%, a rise from the 2.8% in 2015, with an inflation rate of 0.2% (NESDB, December 2016). Key factors influencing the 2016 economy included slow recovery of the global economy, politics and policy uncertainties in the US, the impact of Brexit on EU economic recovery, financial problems in Europe and China that could affect Thailand exports, and domestic problems especially from the crackdown of zero-dollar tourism which could shrink the number of Chinese tourists to Thailand.

Most of the key global economies continue to expand in 2016, especially the US. IMF estimated GDP to grow by 1.6%, lower than that of 2015, while employment is expected to continuously improve. The EU economy grew by 1.6%, same pace as last quarter, still with high unemployment rates concerning Brexit.

The Asian economy in 2016 was estimated to grow at 5.4%, on a par with 2015. Growth was sluggish in the first half of 2016 but gradually improved with the global economic recovery as well as local governments' economic stimuluses and easing monetary policies. Many countries, however, still faced foreign-exchange volatility.

China's economy in Q3/2016 expanded by 6.7%, on a par with last quarter, with a steady momentum from increasing government spending as part of the economic stimulus measures, and from healthy private consumption growth. Inflation leveled at 1.7% while the RMB continued to depreciate with the decrease in national reserves.

Meanwhile, Japan's economy grew at 0.9%, higher than the 0.6% of last quarter, driven mainly by domestic expansion from government spending and investments as part of the economic stimulation policy package of JPY 28 trillion. Private spending and investment slowly picked up with continually appreciating JPY, leading to deflation remaining high at 0.6%.

Most other Asian economies expanded with higher levels of exports, as key trade partners' economies improved. The economies of the Newly Industrialized Economies (NIEs) continually recovered, especially for Taiwan and Hong Kong, which grew from 0.7% and 1.7% in the second quarter to 2.1% and 1.9% in the third quarter respectively. Meanwhile, the economies of South Korea and Singapore grew by 2.7% and 0.6%, slower than 3.3% and 2.0% last quarter due to contraction in their respective industrial sectors.

The Baht weakened to BHT 36 per US Dollar in 2016, boosting liquidity for exporters. However, compared with other trade partners, competitors, and neighbors, the Baht still strengthened and could result in challenges to economic growth.

Prices of monomers and polymers this year fluctuated with the directions and volatility of their raw materials, namely crude oil and naphtha. When comparing prices of polymers in 2016 to the same period in 2015, the price of PP dropped by 11% to an average of USD 1,047 per ton, HDPE dropped by 9% to USD 1,132 per ton, PS dropped by 5% to USD 1,182 per ton, and finally, ABS dropped by 11% to USD 1,326 per ton. As for monomers, ethylene price went down by 6% to an average of USD 1,041 per ton, propylene price down by 11% to USD 700 per ton, and styrene monomer down by 6% to USD 1,050 per ton.

### Outlook for Thai Petrochemical Industry in 2017

The Thai petrochemical industry in 2017 is anticipated to grow at a more rapid pace than in 2016, following the expected higher GDP and industrial growth. NESDB reported an economic growth projection for 2017 at 3.0-4.0% based on several factors, including the slowly improving exports that led to the recovery of both the industrial production and private sector investment, the recovery and acceleration of agricultural

produce, and the soaring government investments. The overall export growth level is projected to reach 2.4% while the headline inflation is expected to be within 1.0-2.0%. Furthermore, government investments will lead to higher demand for petrochemical monomers, driving more expansion of the petrochemical industry.

Meanwhile, IMF projected the 2017 global economy to grow at 3.4%, compared to 3.1% in 2016 (Source: IMF, World Economic Outlook, October 2016), largely due to the recovery of emerging economies such as India, China, and ASEAN-5 (Thailand, Indonesia, the Philippines, Malaysia, and Vietnam), that will total the growth at 6.3%. However, volatility remains high in 2017, starting with political uncertainties in Europe, where more than half of the countries will undergo major elections. Key events include presidential elections in France and general elections in Germany in the third quarter. Meanwhile in Italy, the recent referendum rejecting the constitutional amendment could trigger a national vote to leave the EU, or Italexit, as occurred in the UK.

For the US, the new economic policies under President Trump's administration must be closely monitored, since they are significantly different from the previous government (the Democrats), such as lower personal income taxes, deprioritizing trades between China and Mexico, and discriminating immigrant labor. These could result in financial market volatility, including the appreciation of the US Dollar, leaving other currencies relatively weakened. That could lead to investors replacing low-risk assets with high-risk ones, such as the US government bonds, driving higher yield. Meanwhile, the economies of trade partners such as China and Japan can be affected, as President Trump focuses on domestic economic measures. However, the impact from trade protectionism on many Asian economies are considered limited as the share of export to the US is relatively low compared to their GDP. Thailand will encounter indirect impacts from the tariffs between the US and China as part of the supply chain from Thailand goes to China and further to the US. The impacted goods are raw materials and intermediate goods, including chemicals, electronics and parts, and textile. The export value of these goods is estimated to fall by 0.6% or Baht 49 billion.

As for the 2017 domestic agenda, the government is focusing on driving investments in basic infrastructure, especially mega-projects and the continuation development of industrial clustering in special economic zones along the border with neighboring countries under the "Eco-friendly Petrochemicals and Chemicals" super cluster jointly supervised by the Ministry of Industry and the Board of Investment (BOI). The Chon Buri and Rayong super cluster is charged with manufacturing and production of green chemical products and polymers, specialty chemicals and specialty polymers, as well as bioplastic-coated packaging. This super cluster is set to support the recovery and expansion of private investments and to enhance innovations of the petrochemical industry, leading to a greater focus on products with Thai brands and technological R&D by local and foreign operators.

Meanwhile, the petrochemical industry is expected to grow in line with GDP growth and value-added industries. The Fiscal Policy Office estimated exports and imports to grow by 1.8% and 4.0% respectively (Source: Ministry of Finance News, Issue 147/2016,







October 28, 2016). Industrial growth depends on several factors, including crude oil price movement, regional economies and trade, global economies, and the expansion of value-added and downstream industries.

Nevertheless, there are constraints to the expansion of the Thai petrochemical industry. The weakening currencies of trade partners, including the EURO, the Japanese yen, and the Chinese renminbi, which is particularly weakened by economic and monetary measures imposed by the Chinese government. These will limit export potential from Thailand and pressure global commodity price recovery.

## Strategies for Competition

### Pricing Strategy

Prices of polymers and plastic products are very sensitive to various factors, ranging from raw materials including crude oil, naphtha and monomers to demand and supply of domestic and global markets. IRPC's pricing policy is therefore formulated in line with these factors and pricing reference quoted by ICIS CFR South East Asia, as well as other internal factors like feedstock and production costs. With a fully integrated petrochemical operation, IRPC can fully leverage its low-cost business position in synergy with the pricing policy to define its product prices competitively in local and foreign markets. Other support operations, such as feedstock facilities and the deepsea port, also provide cost advantages to IRPC to compete even during a market downturn.

### Product Quality

As a pioneer of Thailand's petrochemical industry, IRPC possesses years of close cooperation with customers on product R&D. With ISO 9001 certification of all products, IRPC can indeed provide reliability to customers on product quality with international standards, procurement and development of new plastic products to efficiently satisfy local and foreign customer needs. With the ability to produce polymers of different grades (natural, color compounds, and composites, which are colored plastic products mixed with additives to enhance their properties), IRPC can tailor products to fit specific needs of each customer, including parts of electrical appliances or automobiles. These specialty compounding and composites facilities are located within and next to other plastic polymers facilities. IRPC can therefore easily manage the entire chain of production and tailor-made work orders from customers efficiently. In addition, IRPC provides technical services, including the pre-sales selection of plastic materials and after-sales service on problem-solving and general advice.

All these processes are operated in parallel with the conservation of safety, occupational health and the environment under the company's policies on environmental protection and safety of employees and the communities. All IRPC products are ISO 14001-certified and TIS 18001-certified. Moreover, IRPC facilities producing ethylene, PE, PP, and PS are CSR-DIW certified (Standard for Corporate Social responsibility) by the Department of Industrial Works

## Product Diversity

With a total plastic capacity of over 900 KTA, IRPC products vary from HDPE, PP, EPS, PS, ABS, to SAN, providing convenience and flexibility to meet customers' needs. Since some of these products are substitutable, for instance, HDPE can replace PP in molding work for household appliances, woven bags and plastic canvas, customers can pick and choose the use of plastic polymers based on their specifications, prices and market supply, and IRPC can provide flexibility to customers on the selection. Product diversity also provides more business opportunities to IRPC to meet any local and foreign customers' demand and maintain its sales cost per unit to the lowest in the market.

## Marketing Strategy

IRPC continued with sales promotions, new product development and product exposition through 2016. Together with Blue Light Industrial Co., Ltd., and New Arriva Co., Ltd., our trade partners, it brought to market the innovative bio-polymer composite luggage "CAGGIONI" and household appliance "QUALY" in an energy research fair jointly organized by the Ministry of Energy and the National Research Council of Thailand during March 6-27 at Phadung Krung Kasem Canal beside the Government House. The selling booth was visited by Prime Minister General Prayuth Chan-ocha, along with his Cabinet and PTT President and Chief Executive Officer, Mr. Tevin Vongvanich, on March 15. The booth also attracted numerous consumers.

IRPC also took part in a product exhibition at the Thailand Industry Expo 2016, a large exhibition aimed for domestic consumption of quality goods organized by the Ministry of Industry during July 26-31 at Challenger Exhibition Hall 1-3, Impact Arena, Muang Thong Thani. As a highly successful local refinery and petrochemical producer, IRPC presented an array of products exhibiting Thailand's technical capabilities along with creative plastic innovation for better environment and wellbeing under the TI EXPO 2016's "Building Thailand's industrial capabilities – challenge the future" concept. Exhibited products included Green ABS, the world's first biopolymer made from natural rubber replacing synthetic rubber, Natural Color Plastic, polymers dyed with natural colors, and Wood Plastic, plastics made from mixing polymers with ground residual wood chips from the production of furniture, wooden toys, and other industries. The product was aimed to maximize the use of natural wood resources.

Green ABS is an ABS mixed with a new combination of synthetic rubber and natural rubber (up to 10-40%), making the final product stronger, more durable, more resistant to shear and stress, and more elastic. IRPC is the world's pioneer Green ABS producer. The product is an example of innovation generated by IRPC under its chief policy focusing on R&D of green product specialty to meet customer needs and create more value for the product.



POLIMAXX wood plastic composite is one of the green innovative polymers researched and developed by IRPC, based on the awareness of natural resources' value. POLIMAXX is a mixture of quality wood materials and 20% of PP, PE and SAN to generate stronger, more durable and elastic product while retaining the beauty of natural wood features. The molding process is simple, since the materials are extremely light and elastic and can be reused or recycled.

years of business relationship with IRPC. These distributors can enjoy the benefit of IRPC's fully integrated petrochemical production and product diversity and therefore can minimize marketing and administration costs, leading to continuously solid relationship. In addition, IRPC manages some direct sales to reliable customers with strong credit lines and financial competency.



### IRPC Customers

Most of IRPC's customers are sales agents. It sells no more than 30% of total sales volume to a given agent and has no obligation to do so in the future, thereby averting risks of being dependent on any of these agents.

### Distribution and Distribution Channels

#### Domestic Sale

Recognizing that polymers are the primary feedstock to domestic consumer products, IRPC defined the 2016 domestic sales with priority, varying with demand set by domestic customers but no less than 55% of the total sales. This domestic sale strategy is set to support the national economic development strategy and the private sector. IRPC sells its products through 21 authorized sales agents who are highly skillful and able to provide an entire range of services. All these agents are non-exclusive authorized distributors, some with more than 30

#### International Sale

International sales of IRPC's polymers this year were made through overseas sales agents with years of close business relationship with IRPC. The export strategy focuses on its strengths in quality and product diversity, technical services and consultation on specific product development. These agents have established a firm business network with end-customers in key markets with high polymer demand, including China, Indonesia, Turkey, Vietnam, and Australia. IRPC has also expanded to other markets, including Africa, Europe, the US, the Middle East, and Australia. Currently, IRPC products are sold in over 100 countries worldwide.

### 3. Power Plant and Infrastructure Business Market and Competition

The Power Plant Business tends to grow up continually in 2017. because of the government policy of "Eastern Economic Corridor Development" which will support the main industry in the country especially petrochemical,





energy and automobile industry. As a result the power production rate will be increased. The company also has the sale agreement with Electronic Generating Authority of Thailand (EGAT) for 45 megawatt electricity per year which will support the development of the Eastern Economic Corridor.

#### 4. Port Business and Tank Farm Market and Competition

The 2016 revenue from the port and tank farm business totaled over Baht 770 million, rising by 5% from 2015. The port business accounted for 50% of the revenue and the remaining from the tank farm business. Port service bulk cargo throughput this year exceeded 2 million tons, up by 1% from 2015, mainly due to provision of total service solutions. The pipe cargo throughput of the tank services was recorded at 527,000 tons, 19% growth from 2015 contributed by the expansion of services in more variety of products, such as ethanol.

##### Port Business Forecast

NESDB projected the 2017 economic growth at 3.0-4.0%, with one of the key factors being the mega-infrastructure project investment by the government. This results in production expansion of the steel industry, which accounts for a large portion in the bulk cargo port business, leading to higher incoming and outgoing cargo traffic.

IRPC's value-creation strategy includes provision of total service solutions to draw new customers and generate higher revenue from key accounts in the port business. Services are available for bulk cargoes of commodities, such as ores, iron, granite, and sand.

##### Tank Farm Business Forecast

Considering higher domestic economic growth in 2017 and expansion of the petrochemical industry, the tank farm business for petrochemical products, especially for new customers or for new products, or both, is expected to rise. IRPC is part of the PTT's GLM (group logistics master plan) initiative to create logistics synergies within PTT Group to maximize usage and efficiency of existing assets. Currently, Rayong Depot, Phra Pradaeng Depot, Ayutthaya Depot, and Chumphon Depot can contribute to benefit the group in this business expansion.

#### 5. Asset Management Business Market and Competition

The 2016 revenue from the utility service and asset management business totaled Baht 3.58236 billion, with 97.75% of the revenue from the utility service business, 1% from the asset management business and 1.25 % from the IRPC Solutions Provider business.

IRPC has mapped out a plan to develop its properties in industrial zones and other potential areas into eco-industry to support investors and joint-venture investments in line with the Eastern Economic Corridor (EEC) development. These are strategic areas equipped with basic infrastructure. The plan will act as a prototype for national special economic zone and enhance Thailand's industrial development with leapfrogging advancement, connecting all infrastructural investments within ASEAN nations. A prospectus was issued through related government agencies to attract foreign investors who would like to invest with IRPC.

Connected Party/Relationship	Transaction	2016	2015	Nature and Condition
<b>Vinythai Public Company Limited (VNT)</b> Relationship : 24.98% of shares held by PTTGC	- Purchase of goods	-	23	IRPC bought sodium hydroxide from VNT.
<b>Thai Oleochemicals Co., Ltd. (TOL)*</b> Relationship : 99.99% of shares held by PTTGC	- Purchase of goods	42	266	IRPC bought petroleum products from TOL.
<b>Global Green Chemicals Plc (GGC)*</b> Relationship : 99.99% of shares held by PTTGC	- Purchase of goods - Account payable	275 13	- -	IRPC bought petroleum products from GGC.

**Note:**

\* Thai Oleochemicals Co., Ltd. was registered as a public company limited on February 18, 2016, and subsequently changed its name to Global Green Chemicals Plc.

### 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,

As you know, the Board of Directors of IRPC has defined its vision to become the “Leading Integrated Petrochemical Complex in Asia by 2020,” to be achieved with transparent management as well as social, community, and environmental responsibility.

Having thoroughly conformed to the Board-defined vision, policies, directions, and strategies, this year IRPC not only achieved its goals, but also posted Baht 9.721 billion in net profit, eclipsing last year’s net profit by 3.4%. Of this, profit from our key Everest Project accounted for Baht 2.311 billion. In managing this project, it is essential to cultivate understanding



of corporate goals and the i-SPIRIT values among the workforce. We hope that within three years of the project, Everest will yield about Baht 10 billion a year in incremental profit-a grave challenge that needs the collaboration of all across the company. IRPC has today refined its HR management system to perfection in all aspects so as to pursue international "HR Excellence" while cultivating essential success factors deep beneath each employee. Therefore, the "IRPC New DNA" concept was leveraged in late 2016 to grow capability, close gaps, and prime everyone in the drive toward operational excellence with a mindset and behavior focusing on value addition and effectiveness, which are vital for the achievement of our pledge to "Getting to the top and staying there."

The completed UHV Project-the last and biggest jigsaw piece of the Phoenix strategies with an investment of over Baht 34 billion-was ready for commercial production in late 2016. UHV is bound to enhance our propylene product line competitiveness, thanks to the 320-KTA hike in capacity. As for the Fully Integrated Polypropylene Project, this is on course for completion in mid-2017, raising IRPC's capacity by 300 KTA to 775 KTA. Despite the planned 1-2 months of major turnaround in the first quarter of the coming year, these debottlenecking and efficiency improvement projects will most likely generate more profits in 2017 than in 2016. More important, 2018 will be the most

special year with outstanding performance results, given the combined success of Phoenix, Delta, and Everest Projects.

Nonetheless, our stride toward IRPC's vision by 2020 would be unsustainable unless IRPC strived for non-monetary 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 third 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. These three accolades speak volumes for IRPC's sustainable growth-our collective pride.

I wish to take this opportunity to thank the shareholders, Board of Directors, customers, business partners, financial institutions, communities, mass media, and all others involved for their staunch contribution to IRPC's drive, confidence, and trust. My genuine appreciation goes to all employees for their collaboration and goal achievement. My team and I pledge to take IRPC and everyone higher, fulfilling IRPC's vision and mission to achieve security, prosperity, and sustainability.



Mr. Sukrit Surabotsopon

President

**UHV Project Project** increases competitiveness in the product line of polypropylene with an investment budget **34,000 million Baht**

To improve the quality of low-value heavy oil into high-value products which will get the products such as

**Main products:** polypropylene, heavy naphtha.

**Secondary products:** ethylene, butane, propane of diesel oil components, light naphtha, hydrogen, sulfur, fuel gas and condensed oil. The project has finished and started commercial run. In July, 2016,

If it runs at full capacity, it will be able to increase the production of propylene to be

**320,000 tons per year.**









## PERFORMANCE SUMMARY



### IRPC strives for business growth and attractive returns for its shareholders,

with due regard for economic, social, and environmental balance, corporate governance, and risk management—all of which produce sustainable growth for a leading corporation.

Here is a performance summary of all key aspects for this year.

#### 1. Economic

Focusing on strengthening its core business, IRPC adapts its strategies to run business and make profits amid increasingly fierce business competition due to external pressure, whether oil gluts sending Dubai crude prices tumbling down to US\$23/barrel in January 2016 and picking up a bit due to low inventories of goods in the US, or output cuts by OPEC in November, which sent Dubai prices upward. Yet, the surplus supply of roughly 1 million barrels per day still depressed prices. Because of this, Dubai averaged US\$44/barrel for the year.

In addition, the world GDP, which came to 3.1%, was lower than earlier estimated. Add to this the uncertainty in China's economic picture, the US Presidential Election with bearing on its own outlooks and policies toward other countries worldwide, concerns due to Brexit, and others. The bottom line is negative factors affecting the world economy. Still, Thailand's annual GDP grew by 3.2% (Bank of Thailand, January 2017), which topped the estimate of 3.0% thanks to expanding

consumption caused by the government's economic stimulus measures and rising farmers' income. This means despite the slow drive by private investment, one saw expanding public investment while exports and the service sector soared, particularly the tourism sector, the main driver.

Below is a summary of IRPC's economic performance this year.

#### 1.1 Production operations

For competitiveness, IRPC's goal is to raise production efficiency and maintain costs. To this end, it relies on continuous processes with stability and lower maintenance down time; high energy efficiency; production planning that meets market needs through flexibility; and cultivation of its safety culture, a continuing key operating factor for all its workforce. This year, IRPC imported a total of 67 million barrels of crude oil into refining processes, equivalent to an average of 183,000 barrels per day, some 0.5 million barrels higher this year.

Below is a summary of production operations

1.1.1 Process improvement and machinery efficiency improvement of the group of plants, totaling 138 projects, including Increase the Gasoil Draw, Furnaces Coil Replacement ETP – Apply High Emissivity Coating on Furnace Refractory, which gave process control precision and accuracy, yielding products of desirable qualities and lowering process energy. Long-term profits total about Baht 1.3 billion a year. Finally, a Fire Protection System was designed to monitor safe operation and enhance confidence in plant stability and safety.

1.1.2 Production stability improvement: IRPC executed the Zero Unplanned Shutdown Program and the Turnaround and Shutdown Management Project to ensure that its production is credible and prepared to produce, which resulted in production as planned and prevention of impacts from unplanned shutdowns. The subset projects included the Inspection Roadmap and the Plant Health Check Projects to inspect the strength of assorted machinery and measurement tools; the Asset Integrity Assessment (AIA) Project assessed piping systems and machinery strength against pressure in various conditions (subject to work conditions); the Total Asset Integrity Management System (TAIMS) Project developed database, vigilant, and management systems for all equipment, machinery, and mechanical engines at all plants; the Alarm Management Project improved alarm systems of the production control system; and the MA Expert Project developed operators in charge of mechanical and electrical maintenance and measurement tools to be more and more knowledgeable, to understand, and to be equipped and gain experience in maintenance work. Therefore, this year's plant reliability posted 99.62% performance, beating the goal of 99.50% and last year's reliability of 98.85%. What is more, the number of unplanned process shutdowns fell by about 70% from last year. A total of 10 plants experienced no unplanned shutdown, beating last year's performance by seven plants.

**A total of 138 projects have improved process efficiency for IRPC plants.**

**Coupled with process energy reduction, they yield long-term profits of roughly Baht 1.3 billion a year.**

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 controlling and monitoring outcomes efficiently, IRPC successfully controlled hydrocarbon compound losses from processes, thus cutting pollutant emissions. As evidence, the energy intensity index (EII) met the goal at 93.89%, equivalent to energy reduction of 1.7 million gigajoules, or Baht 700 million.

1.1.4 Safety and hygiene: IRPC focused on regular work performance by employees with due regard for safety, with Zero Accident as the ultimate corporate goal along with Zero Emergency Case and a promotion of constant awareness, recognition, and promotion of safety and work as a corporate culture. To this end, various projects, including the Goal Zero Accident Project, reminded workers to pay primary attention to work safety. The Safety Excellence Project nurtured safety awareness, promoted safety leadership, and trained workers to help and warn one another. The Safety Network and Sharing Project established a safety network among PTT Group. The Integrated Database Management System Project (IdMS- Phase II) analyzed all plant incidents for grouping into databases, looked

for their root causes, and developed preventive or remedial guidelines to prevent recurrence. In addition, IRPC applied PSM (process safety management) and conducted the annual plant safety risk assessment against TIS/OHSAS 18001 for safety throughout production processes, which enabled IRPC to maintain its decent safety statistics, with a TRIR (total reportable injury rate) of 0.58.

1.1.5 Management for excellence with a focus on productivity, operating quality, and collaboration with PTT Group and other leading companies:

- With PTT Group, applied the OEMS (Operational Excellence Management System) to productivity work to raise plant stability and confidence, manage energy, establish safety systems and processes, and performance assessment systems
- Signed an “Auctioneer Agreement” with Hilco Global Asia to manage unused machinery for optimal results, with about Baht 200 million in estimated revenue for IRPC
- Signed a “Spent Caustic Treatment Unit for RDCC Plant” agreement with Plus Exploration, which would design and install sophisticated machinery for spent-caustic treatment, a type of process waste, to achieve standard quality with harmless environmental impacts, reduce waste and transport expenses to external disposal sites. As a result, IRPC achieved maximum RDCC plant management efficiency.

1.1.6 Quality and achievement awards:

- The Prime Minister’s Industry Award: The ADU 1 condensate residue processing plant was named outstanding for productivity, and the BTX plant was named outstanding for energy management.
- TPM Excellence Award 2015, Category A, presented by Japan Institute of Plant Maintenance (JIPM) to all organizations worldwide for successful deployment of the Total Productive Maintenance system.
- QCC Thailand Quality Prizes 2016 (five awards-one diamond, two golden, and two silver).

## 1.2 Key strategic project operation for business growth

Faced with a challenging growth goal to pursue business leadership with 14% ROIC (return on invested capital) by 2020, IRPC proceeded to forge cooperation and investment in new projects that aligned with its strategies, laws and regulations, and a changing environment.

Below is a summary of key strategic projects.

### 1.2.1 EVEREST Project

To forge incremental profits from corporate-wide business operations, this project saw cooperation with a world-class consultant company in advocating and driving IRPC’s approaches to raise operating efficiency and strengthen organization health to ensure that IRPC can sustainably maintain profitability. The project embraces operations, commercial, procurement, corporate, and organization health areas. This year IRPC reaped Baht 2.311 billion in benefit, as detailed below.

- **Operations area, focusing on three key aspects:**
  - 1) Unit operation and energy through production efficiency improvement, energy consumption reduction or switch to lower-cost energy forms, and process loss reduction to enable reuse
  - 2) Maintenance and reliability by lowering risks of unplanned shutdowns and proceeding with process improvement to ensure planned execution
  - 3) Integrated supply chain through improvement of planning tools for higher efficiency and precision, together with application of new tools or systems accepted by leading companies, including PIMS-AO, PPIMS, and Orion & Polymer Schedule for crude oil purchase planning as needed by IRPC to craft opportunities for forging incremental profits from its processes.

In addition, a Model Plant Project was executed to improve processes and raise efficiency for more work achieved than in the past in parallel with modified attitudes and behavior of employees to focus on productivity, institute vigilant processes, and adopt work that promptly responds to production operation, not to mention teamwork management to efficiently work together. This year a total of Baht 1.091 billion of benefit was realized.

- **Commercial area**, focusing on raising commercial operating efficiency and forge incremental profit from routine operation by setting product prices, improving distribution channels, adjusting the proportions of customers for maximum returns, revising agreement terms for suitable prices, and pursuing new markets. Teams are developed for higher capability with a commitment to pursuing ways to make profit through brainstorming for new projects while forging ownership awareness and enhancing problem-solving skills. Teams were coordinated and worked together closely to achieve goals. Finally, advanced software under the name of Athena was invented to analyze returns of individual product sales to individual customers. This year a total of Baht 778 million in benefit was realized.

- **Procurement area**, focusing on raising efficiency for the management of parts, equipment, and inventory items, procurement of raw materials and feedstock, chemicals, and various equipment, and strategic service hiring, not to mention capacity-building for procurement officers so that they may adopt strategic attitudes and operating efficiency to add bargaining power with explicit regard for ethics, transparency, and fairness in business dealings. Finally, IRPC adopted new international-standard tools, including e-Auction, e-Catalog, and e-Buyer to upgrade its practices to digital procurement. This year IRPC realized Baht 277 million in expense reduction.

- **Corporate area**, with a focus on raising corporate management as a whole by developing excellence in all groups, including novel forms of financing with lower interest expenses, value addition from the sale of Thailoil shares, budget-saving through Budget Excellence, and value addition from provision of integrated port services. This year a total of Baht 165 million in benefit was realized.

- **Organization health area**, with a focus on organizational development and personnel caliber to enable IRPC to sustainably maintain competitiveness through personnel development with the Recovery Transformation Service (RTS) Academy, Lead Program, Young Leader project, specialized caliber development, knowledge management, change management, communication and morale support for those dedicated to work, and development of systems, including performance management, capacity-building, iSPIRIT value cultivation among employees, and career growth management systems. This year the organization health index (OHI) stood at 70, higher than last year.

Today, some 800 concrete initiatives are undergoing screening for project development feasibility to supplement value to IRPC, with a total value of some Baht 10 billion.

### 1.2.2 UHV (Upstream Project for Hygiene and Value-Added Products)

This project seeks to raise competitiveness and foster sustainable growth by investing US\$1.121 billion to improve the quality of heavy oil with low value 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. Project construction work began in October 2012, and commercial operation began in July this year to accommodate two start-ups in September-December this year. The project is under plant acceptance certification with exception or settlement of special agreement, due for completion in January 2017.





PP Expansion Project

This year IRPC posted gross production profit of about Baht 800 million. With full-steam production, 320 KTA of propylene output will be achieved for feedstock for PP (polypropylene) capacity expansion, substantial capability growth for the PP production line with some Baht 2 billion income per year.

### 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 in a bid 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:

Soon to enhance IRPC's core PPE and PPC capacities from 775 KTA, a project is on track to generate income by 2017

- PPE (PP Expansion Project): Novolen's process technology will be applied to current technology from a capacity of 475 KTA. With additional investment in machinery and tools, capacity will grow by 160 KTA to a total of 635 KTA.





*PP Compounding Project*

- PPC (PP Compounding Project): High-efficiency “In-line Compounding” technology from JPP (Japan Polypropylene Corporation) is used here for the 140-KTA operation. JPP’s propylene compound commands the top market share in Japan. JPP supplies products to leading automobile companies like Toyota, Mitsubishi, Honda, and Nissan. Thanks to this process, production was streamlined in response to strategies of auto-makers for cost reduction each year.

IRPC signed construction agreements for both projects with SEG (Sinopec Engineering Group) and SEI (Sinopec Engineering Incorporation). The ongoing construction since May 2015 is due to be completed for revenue generation by the third quarter of 2017.

#### **1.2.4 Joint-venture project between IRPC Polyol (IRPCP) and PCC Rokita SA**

This project aims to expand production cooperation and joint distribution of high value-added PU (polyurethane) products with a focus on the domestic market (construction, automotive, and furniture industries) and the burgeoning AEC market to carve quick business growth opportunities in line with IRPC’s strategies. Highly successful PCC Rokita SA of Poland is long experienced with PU technology, not to mention its production bases and customer groups in several European countries.

On December 21 this year, IRPC signed an agreement for stock acquisition and an agreement between the shareholders and PCC Rokita to sell 25% shares (worth about Baht 80 million) in IRPCP (99.99% owned by IRPC) to that company.

## BUSINESS STRATEGIES

### Performance Highlight 2016



#### 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 2,311 million in EBIT for IRPC



#### UHV Project

This year, UHV project posted gross production profit of about Baht 800 million. With full-steam production, 320 KTA of propylene output will be achieved for feedstock for PP (polypropylene) capacity expansion, substantial capability growth for the PP production line with some Baht 2,000 million income per year

### Leading Integrated Petrochemical Complex in Asia by 2020



Operational Efficiency  
Improvement Asset Utilization  
Enhancement Product and Service  
Improvement Capacity and  
Products Expansion

#### Project Completion

- **CHP I:** Electricity +220 MW, Steam +420 T/hr
- **PRP:** Propylene +100 KTA
- **EURO IV:** Gasoline 15 KBD, Diesel 10 KBD, Jet 15 KBD
- **TDAE** +28 KTA, 150BS +25 KTA
- **EBSM** +60 KTA, ABS/SAN +60 KTA
- **Lube Blending** +60 M.Ltrs./year



#### Margin Improvement

- Operational Excellence
  - Commercial Excellence
  - Procurement & HR Excellence
- Benefit + 134 MUSD**

2010

2014



### PPE/PPC Project

**PPE Project :** This project seeks to improve and expand PP capacity to a total of 635 KTA, expected to be completed for revenue generation by the third quarter of 2017.

**PPC Project :** This project seeks to improve and expand polypropylene compound to 140-KTA, expected to be completed for revenue generation by the third quarter of 2017.



### IRPC & PCCR

Joint-venture project between IRPC Polyol Co., Ltd. (IRPCP) and PCC Rokita SA. This project aims

to expand production cooperation and joint distribution of high value-added PU (polyurethane) products



### BIG

Revenue Growth of 5%  
EBITDA Growth of 10%



### STRONG

1<sup>st</sup> Quartile ROIC in  
Petroleum and Petrochemical  
Industry



### LONG

Member of DJSI Emerging  
Markets Universe



### Incremental Margin Organization Health

- Capability Building
- Owner mindset & Performance Orientation
- Cultural Changes

**UHV Propylene +320 KTA**



### Fully Integrated PP

- PP Expansion +160 KTA
- PP Compounding +140 KTA

**2016**

**2017**

**2020**

**ROIC  
14%**



IRPC has defined a vision and business strategies to become a "Leading Integrated Petrochemical Complex in Asia by 2020". To this end, key strategic projects have been undertaken to enhance the capability and strengthen businesses in tandem with IRPC's stewardship of society, communities, and the environment, with key future plans formulated to ensure vision achievement.

### 1.3 Business operation

An IRPC goal is to grow its profits. It requires EBITDA growth of 10% as a result of three core businesses: petroleum, petrochemical, and support businesses (power & utility, port & tank farm, and asset management). This year its EBITDA amounted to Baht 17.43 billion, against Baht 17.033 billion last year, some Baht 400 million up (2.3%). The net profit came to Baht 9.721 billion, against Baht 9.402 billion last year, a gain of Baht 319 million (3.4%) from its suite of efficiency improvement projects.

Below is a summary of key business moves.

#### 1.3.1 Petroleum business

IRPC strives to keep domestic customers while growing its petroleum product to Indochinese countries with high demand. This year the business grossed Baht 113.152 billion in sales revenue, of which 57% came from domestic sales and 43% from exports. Gross profit based on market prices came to Baht 11.616 billion, an 18.5% drop from last year's profit of Baht 14.246 billion, due to lower spreads between diesel products and asphalts. Below are strategic implementation details.

**Pricing strategy:** IRPC sells through channels where maximum profits are made, setting prices that fit market situations and coordinate cooperation with affiliates for optimal benefit in strategizing sales, focusing on competitive prices to maintain its market shares, growing the number of customers and sales volumes, while maintaining suitable marketing margins. Finally, it develops price analytical tools that lead to novel sales strategy development.

**Product quality strategy:** IRPC focuses on fuel product quality control on a par with the Ministry of Commerce's standards while improving the quality of its lubricating oil group for value addition.

**Service strategy:** IRPC enhances assorted service quality. Five oil depots serve customers in all regions, around the clock at the one in Rayong. Sales outlets were added at the Mae Klong Depot in Samut Songkhram to serve customers in the West and the upper South. In place is oil transport service by truck



and tanker, and at wharfs for customers nationwide. Sales services are in place with sales agents, sales coordinators, and sales service departments for customer service. Also, a ticket-issuing office takes order from customers wishing to buy fuels through the SAP system, a management system linking databases with online and real-time data displays that are accurate for use as databases for analysis, decision-making, and administration by all executives and operators. In place is the development of IRPC Oil On Net (IRON), an electronic system for petroleum product distribution management that incorporates the capability of supply chain management systems with the total business solution system to cater to transaction needs of customers, raise business efficiency, and keeps on developing to accommodate sales through other channels. Quality inspection service is also in place, featuring knowledgeable technicians who advise and solve problems, as well as providing quality inspection at service stations located at oil depots as quality assurance for customers.

Highlights of the petroleum business:

- Signed a long-term agreement with Darby Trading Inc. to grow the slack wax markets in the US and Europe, with extension of the agreement worth Baht 120 million
- Signed the "Krungsri e-Payment Service" agreement with Bank of Ayudhya Plc for petroleum product purchases through the IRON system, a payment service for customers through e-Payment that



can engage in transactions and find out results instantly, which adds channels and options for customers and supports after-sales services

- Joined The Annual Petroleum Outlook Forum 2016 to share strategic views on energy and jointly analyze oil situations during a lecture and sharing session on the outlooks and trends for oil prices in 2017, sponsored by PTT Group.

### 1.3.2 Petrochemical business

With a goal to profit through incremental spreads, IRPC focuses on relentlessly promoting and supporting R&D to develop special-grade products, deciding the sales proportion of these products at 60% by 2020. This year the petrochemical business generated Baht 52.115 billion in sales revenue, of which domestic sales accounted for 56%; exports, 44%. IRPC's gross profit at market prices totaled Baht 16.869 billion, a rise of Baht 1.449 billion from last year's Baht 15.420 billion. Specialty product sales this year accounted for 43% of the total, against 40% last year. Below are key strategic moves:

**Pricing strategy:** IRPC bases its pricing on fundamental factors affecting sales, including raw-material and feedstock costs, market supply/demand in Thailand and world markets, and inventories. It focuses on being a low-cost producer in an integrated petrochemical business, equipped with complete production support system. That way, IRPC holds the edge in costs, which enabled it to compete amid depressed market prices.

**Product quality strategy:** Leveraging its long experience in merchandise development with customers, IRPC efficiently meets customers' needs in Thailand and abroad. In addition, all IRPC polymers have achieved ISO 9001, ISO 14001, and TIS 18001, concretely echoing the policy of environmental care, health, and safety of employees and communities.

**Product diversity strategy:** With a combined capacity of about 900,000 tons per year of assorted polymers, IRPC can truly satisfy customers' needs by expanding business opportunities and cut down on the average sales cost per unit in marketing.

**Sales administration strategy:** IRPC constantly stages sales promotional activities, develops products, and joins various exhibitions. It eases customers' problems

IRPC's petrochemical gross profit this year amounted to Baht 16.869 billion, or some Baht 1.449 billion increment from last year. Sales revenue of specialty products soared by 43%.

by responding to tailor-made orders and having a technical service department to provide advice on suitable polymers before sale and jointly solve after-sales problems.

Below is a summary of the petrochemical business

- Signed an MOU on raw material/feedstock purchase and sale together with a trade agreement with Lao-China Dongyan Petrochemical Co., Ltd., on a visit to Lao PDR for the signing ceremony and business plan consultation.
- With business partner companies, displayed POLIMAXX polymers at the "Fun with Energy, Research Sells" event, organized by the Ministry of Energy
- With the Economic News Reporters' Club, organized an "Exclusive Seminar on Petrochemical Shares," where the President gave a talk on "Deciphering the Business of Petrochemicals".



### 1.3.3 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 communities, society, and the environment so that all parties can co-exist harmoniously. Its businesses consist of power generation and distribution, steam production for industries, air systems, and wastewater treatment for industrial customers and EGAT, among others. This year saw Baht 3.082 billion made in revenue.

Below are the highlights of this business this year.

- Generated additional revenue from core customer groups and expanded to new customers investing in IRPC Industrial Zone. Efficiently managed power and utility services in support of investors in the zone.
- Served and supported projects and businesses of investors in the zone in assorted ways through IRPC Solution Provider, including plant and machinery maintenance, IT system configuration, laboratory testing and analytical services, metrological center, warehouse merchandise storage, trailer truck weighing, and legally required safety training. A total of Baht 49 million was made this year.

#### (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 excellent, international-standard, safe, and green management. This year the business generated Baht 766 million.

Below is a summary of the port and tank farm business this year.

- Enlarged the customer database and generated additional revenue from key customers (bulk and container terminal) by integrating services to add value to the port business by adding manpower service to offload and load goods, customs coordination work, and providing goods transport from the port to customers' sites. The year saw some 2 million tons in the bulk and container group processed at the port, generating 20% more revenue than last year.

- Expanded services for oil tanks with Thai Oil Plc under a two-year agreement from October 2016 to September 2018, worth Baht 189 million. Expanded service for new product tanks, including ethanol tanks. The year saw some 530,000 tons transported through IRPC's pipelines, a 19% rise from last year.
- Provided IRPC Intelligent Tank Service (iTank), an online service to call up contracts for services for order transmission concerning product transfer, monitor status of inventory, examine service fees and payment history, and call up reports in different formats around the clock.

#### (c) Asset management

IRPC's goal is to manage, study, and develop commercial land to supplement value to assets, while surveying land to verify ownership, and allocate public utilities to customers in the industrial zone. This year it generated Baht 36 million in land lease and central utility fees from about 122 rai in the zone and seven rai of other land.

Below are the highlights of the business this year.

- IRPC Industrial Zone: Developed land under the Eco-Industrial Concept for sustainable growth and development. IRPC was named by the Department of Industrial Works (DIW) as one of the five pilot industrial zones in Thailand to serve as prototypes of eco-industrial zone development.
- Ban Khai area: With the Industrial Estate Authority of Thailand, conducted in-depth investigation of investment to develop the Rayong Industrial Estate (Ban Khai) to serve industrial investors under target groups of industries (Thai and foreigners) to accommodate projects of IRPC and external customers
- Ban Yai Da - Noen Samli area: Investigated two projects for land and residential homes in Rayong and analyzed survey outcomes for project needs so as to prepare investment plans
- Chana area: Investigated 2,000 rai of land in Amphoe Chana, Songkhla, to prime the land for expansion of the industrial and commercial sectors under a public policy on developing the Songkhla 2 Port.

## 1.4 Innovation and R&D

IRPC's goal is to grow businesses in parallel with the sustainable application of the Creating Shared Value in the research and development of special-grade or value-added products. To this end, it sets aside 2-3% of the petrochemical business revenue for investment in R&D and adds research personnel at the master's and doctoral levels so that researchers may account for 8% of the workforce. IRPC's three-prong innovation and development strategy consists of product value addition (by entering the special-grade product market where quality is high in parallel with production cost management), technological and product development, including expansion to new businesses that align with global trends, and establishing suitable processes and tools while upgrading R&D personnel. In addition, in place is a standard innovation process to select, manage, and leverage research work with development potential, supporting the idea of developing products with unconventional shapes and forms and promoting research cooperation with research universities and private companies worldwide by focusing on developing green products, supporting research on using natural materials and development of specialty products to add commercial value. This year IRPC posted Baht 800 million in gross profit from new specialty products.

Below is a highlight summary for innovation and R&D this year.

### 1.4.1 Styrene Vulcanized Natural Rubber (S-VNR):

Polymers containing 35% natural rubber were developed in March this year. With super high impact strength, S-VNR can form engineering plastics needing impact-resistant properties, including traffic cones, flexible traffic poles, and road barriers. This year it was used to produce traffic cones that are popular among users, with 14.7 tons of commercial production.

### 1.4.2 High-Density Polyethylene (HDPE):

Orange pipe-grade POLIMASS P901OR was developed especially for gas pipes with higher pressure tolerance and higher gas transport safety than conventional black pipes. Demanded by all markets worldwide, it has achieved international pressure pipe standards.



### 1.4.3 Green Thermoplastic Vulcanizes (Green TPVs):

Value addition to PP (a major product of IRPC) through blending with natural rubber yields new green polyolefins products with special properties that make them more economically advantageous. Further extension of development finds applications in the automotive, construction, electric and electronics industries.

### 1.4.4 Green ABS:

Resulting from the replacement of synthetic rubber by natural rubber blended with saw dust, Green ABS is more durable and more flexible than conventional polymers-and is also green. This year, IRPC joined hands with New Ariwa Co., Ltd., a producer of home decorative materials and gift items under the "Qualy" brand, in developing instruments and home decorations for export to France and Germany.

### 1.4.5 Highlights of innovation and R&D activities this year:

- Participated in the Thailand Industry Expo 2016 event, featuring Thailand's own merchandise, sponsored by the Ministry of Industry, with products highlighting the capability of the only one of Thailand's refining and petrochemical operators that has scored great success with creative plastic innovations for the environment and a good quality of life, namely Green ABS, natural color plastics, and wood plastics
- Co-sponsored the National Innovation Day 2016 fair with the National Innovation Office, Ministry of Science and Technology. In doing so, IRPC

honored those whose innovations have benefited the national economy and society, which stimulated Thai society and established innovations for the country.

- Joined The 10th Edition of the International Petroleum Technology Conference (PTC) to promote progress in scientific and technological expertise in petroleum exploration, development, and production together with oil and gas processing. IRPC's petroleum innovations on display by IRPC consisted of TDAE/RAE and slack wax.

## 1.5 IT operation

IRPC's goal is to improve IT operations by raising the efficiency of infrastructure and networks to accommodate IT expansion, command international management practices, ultra-high security, promotion of technological application in all sectors of work. IRPC expands and improves ERP (Enterprise Resource Planning), a core system, for application in IRPC affiliates and aids internal administration while cutting operating costs. Development of CCMS (Continuous Control Monitoring and Auditing System) leads to an effective internal control system, which in turn induces widespread corporate governance practices. Finally, development of IT security standards on a par with ISO/IEC 27001:2013 Infrastructure (Data Center, Core Network and Virtualization System) of international information security standard.

In addition, IRPC participated in a Pracharath (people-government) project on competitive workforce to develop databases for demand and supply for both sides. Again, it accepted a Thailand ICT Excellence Award 2016 for a core process improvement project (Athena-Achieving Pricing Excellence), software that aids price analysis and promotes commercial tasks in support of organizational excellence in ICT management. In short, IRPC has successfully applied the IT system to efficient corporate development.

## 1.6 Financial

IRPC's goal consists in efficient management of financial liquidity by securing capital at suitable costs of funds to sustain its operation and investment projects, together with adequate, regular disclosure of information to investors.

Below are the highlights of financial moves this year.

1.6.1 Secured Baht 20 billion over eight years in long-term loans for use in investment projects and repayment of loans and maturing debentures

1.6.2 Secured short-term loans:

- Preparation of a loan agreement between IRPC and PTT to efficiently manage financial liquidity among PTT Group companies. The loan facilities were expanded to Baht 10 billion, and the credit line was Baht 1.5 billion baht.
- Extension of a short-term Baht loan agreement worth Baht 3.62 billion and a change from uncommitted-line credit to committed-line worth Baht 380 million, for a total of Baht 4 billion over five years
- Reduction of committed-line loans for domestic letters of credit (DLCs) worth Baht 12 billion due to a reduction in payment period for crude oil with PTT to 60 days in line with falling oil prices.

1.6.3 Activities for shareholders and investors, and awards of success

- Regular meetings with domestic and international investors, stock analysts, fund managers to provide data, directions, and policies. This year, IRPC held quarterly analyst meetings, 11 investor roadshows, and 41 meetings with investors and analysts with the management at their requests.
- Two plant visits for fund managers of different countries along with UOB KayHian Securities (Thailand) Plc to explain investment policies and project updates for UHV, Fully Integrated Polypropylene, Everest, and other future projects.
- CO-organization of activities with SET to publicize IRPC data at the annual "SET in the City" and the quarterly "Opportunity Day"

## 1.7 Legal actions

IRPC's goal is to operate for due benefits in the administration of legal work, contracts, litigation, and public affairs.

This year's legal highlights appear below.

IRPC testified to the Rayong Administrative Court in the case where Mr. Noi Jaitang and his 92-strong





group of plaintiffs sued the Office of Natural Resources and Environment Policy and Planning and an EIA expert panel on industry and public utilities along with IRPC, operator of the Rayong Industrial Estate (Ban Khai). After the court had sent the testimony to all plaintiffs, they did not file their objection to it by the time required by the court, nor did they say they wanted to proceed with the case. The court therefore ordered that this case should be removed from the litigation system, which meant the case was now closed.

IRPC sued Copping Lantau Bride Co., Ltd., and its party of three for infringement and damages. All parties later agreed on a settlement, which gave IRPC Baht 9 million. The case was therefore closed.

## 1.8 Human resource administration

IRPC's goal is to recruit and select capable, conscientious people and develop them into more capable ones while retaining its personnel to spend long years working happily. Also, it hopes to be able to use the right people on the right jobs while promoting efficient work, which will lead IRPC to a series of successes to the peer industry's acceptance and generate business returns.

Below are highlights of HR administration this year.

1.8.1 Restructured the corporation for efficiency and alignment with its vision and strategies by amending its job descriptions, duties, and responsibilities for clarity and reducing operating redundancies

1.8.2 Allocated manpower and defined a policy and approach for manpower management, aligning them with the missions of IRPC units. Prepared for recruitment

and selection of those qualified, experienced people in pursuit of optimal efficiency and benefit to the corporation.

1.8.3 Developed personnel capability and forged learning processes with a three-prong focus (basic development, professional/technical expertise development, and leadership development) by developing a manual for learning and development to frame practices and promote development toward goal achievement. Executed a project to develop executives' personnel administration, embracing problem-solving, team administration, and efficient communication. In addition, IRPC required supervisors and employees to jointly prepare individual development plans (IDPs) to fit individual needs to develop staff members.

1.8.4 Developed leadership with a focus on enhancing caliber and develop the leadership of executives and staff in the Talent & Successor Group to retain these people in the long term by continuing to execute the Leadership Development Program (LDP). Organized a "Leadership Greatness: Leading Organization Change" seminar for top executives. Organized a "7 Habits of Highly Effective People" training course for middle and top management. Finally, conducted "180-degree assessment" for executives to steer leadership and management development for higher efficiency.

1.8.5 Managed career growth by reviewing capability clusters, sub-clusters, and appointed a Capability Cluster Committee (CCC) in line with the organization structure. Prepared for each position career experience and institute Current Estimated Potential (CEP) for employees' use in self-development for future growth.

1.8.6 In performance assessment and the compensation system, set suitable KPIs for units through joint consideration. Set an efficient system for monitoring and assessment by requiring self-assessment and consultation with superiors at mid-year and the year-end. Instituted performance comparison among groups (the Round Table) for suitable, fair annual salary adjustment. For compensation and welfare, IRPC reviewed these for legitimacy, parity among business groups, and with regular regard for employees' quality of life.

1.8.7 Cultivated i-SPIRIT corporate values and set practical patterns for employees in keeping with these values by linking them to job behavioral assessment.

1.8.8 In labor relations, organized for four classes training on "Promotion of Good Labor Relations within the Organization" and the "Labor Organization Management without Conflicts" for one group. Staged IRPC-labor union meetings every month and Employee Committee meetings every two months.

1.8.9 Other highlights of activities this year:

- Accepted the Value Realization Award for the second year in a row together with The Best Learner and The Best Expert at the PTT Group Excellence Award 2016 event in support of corporate cultures and knowledge management in PTT Group
- With IRPC Technological College and PTT Group companies, signed an agreement on cooperation on higher vocational education manpower development project for iPEC (petrochemical and energy technical group) to upgrade the college into a platform for human caliber development on the vocational education side. To this end, launched PETRO-ACE: Advanced Competency in Petrochemical Engineering, ENERGY-ACE: Advanced Competency in Energy Engineering, and CHEM-ACE: Advanced Competency in Chemical Engineering. Set a plan to enroll 75 scholarship students under the projects, with a plan to launch classes in 2017.
- Staged the 2016 intramural sports under the name "The Power T Game 2016" to forge good relations among all and take a stride toward the goal and lead IRPC toward unity with i-SPIRIT.

## 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 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.

IRPC is committed to running its businesses while highly valuing the responsibility to society, communities, and the environment. It cultivates a sense of volunteering among employees, who should be aware of doing business with responsibility, transparency, and fair benefit-sharing with all stakeholders. The ultimate target is to continuously raise the quality of life and improve society by creating mutual value and growing along with Thai society. The company targets to be a good corporate citizenship in accordance with SDGs 17, as well as, playing the important role in promoting investment in Social Enterprise and other CSR projects. As a consequence, IRPC has received many social responsibility awards in both national and international levels.

Details of CSR highlight projects and activities were shown under the report of Corporate Social Responsibility in page 180-196 and Corporate Governance in page 42

## 3. Environment

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 are in tandem with the establishment of good surroundings that are safe for communities, while cultivating safety and occupational health awareness and culture for its workforce.

Below are the highlights of environmental tasks this year.

3.1 Reduction of carbon dioxide emission: IRPC used natural gas in place of fuel oil in its processes in intermediate petrochemical plants and the lube base oil plant.



3.2 Steady reduction in sulfur dioxide and particulates while lowering nitrogen dioxide emission by about 860 tons per year, thanks to the use of clean-burning fuels and combustion equipment in parallel with steam and gas-fired power generation.

3.3 Management of VOCs in industrial zone: In the industrial zone, IRPC measures leaks at various process equipment by relying on advanced technologies, including automatic measurement tools, detection cameras, and handheld detectors. Other than these, proactive improvements in plant areas were made along with installation of a closed sampling system from the processes. Incorporating future improvement, this enabled reduction of VOCs by over 60 tons per year. The project began this year and was scheduled for completion by about the second quarter of 2017.

3.4 Pollutant Release and Transfer Registers (PRTR): This concerned reporting of site data and released pollutants or effluents to air, soil, or water in Rayong via DIW's electronic system.

3.5 Protection Strip: IRPC planted 84 rai more (about 101,120 trees) for a total of 732 rai to sequester carbon dioxide by about 910 tons more, equivalent to 3,700 sequestered tons of carbon dioxide equivalent (TOCE) per year, adding 32% to last year's ability.

3.6 Institution of an environmental management system with participation in project development in the industrial zone, consisting of representatives from the people sector, public sector, experts, and the company itself

3.7 IRPC won the Ministry of Industry's Eco-factory certification under a standard for plants with socio-environmental responsibility under the eco-industrial

town development scope for a total of 11 plants. Later it joined a signing ceremony certifying recognition as a Level 4 Green Industry.

3.8 IRPC received a Carbon Reduction Label certificate for its PP and PS from the Thailand Business Council for Sustainable Development as a business conducted in parallel with preservation of natural resources and the environment while maintaining social responsibility.

#### 4. Corporate governance

IRPC continuously focuses on improving its corporate governance (CG) practices under international standards and the Stock Exchange of Thailand (SET) guidelines.

IRPC has taken steps to improve its key corporate governance (CG) practices in policies, good practices, and integrated governance activities under international standards, ASEAN Corporate Governance Scorecard (ASEAN CG Scorecard), and SET regulations to focusing on transparent business in order to ensure confidence among stakeholders.

In 2016, IRPC has continuously promoted Good Corporate Governance principles. The Board of Directors focus on defining and strengthening the company policies and strategies to enhance its Corporate Governance as a long term target to be a good corporate citizenship. As a consequence, IRPC, again, earned extensive recognition from domestic and international entities. Awards and recognition included being chosen as the member of Dow Jones Sustainability Index 2016 in the category of Oil & Gas Refining and Marketing for the 3 consecutive year, SET Sustainability Awards 2016 and SET's Thailand Sustainability Investment 2016, Certificate of ESG 100 Company from Thaipat Institute, The Winner of the "Golden Peacock Global Award for Excellence in Corporate Governance 2016 from Institute of Directors (IOD) India.

Moreover, IRPC focuses on many corporate governance initiatives such as educating and training good corporate governance to Directors, management and employees, anti-corruption training; ethical judgement for work, IRPC CG DAY, and creating connection by joining UNGC Thailand, UNGC Network Thailand (GCNT). (Details of Corporate Governance were shown under report of corporate Governance in page 42-68)



## 5. Risk Management

IRPC's focus is on risk management throughout the company. A policy was announced for the Board, executives, and employees to strictly implement. To this end, a Risk Management Steering Committee was appointed, chaired by the President. A Risk Management Committee consists of at least three Board directors to devise policies, steer, and guide IRPC's risk management to keep corporate risks manageable and forge confidence among investors in goal achievements, while promoting and forging a risk management culture so that executives and employees may recognize and be knowledgeable about efficient application of the scope and standards.

Below are this year's highlights on risk management.

### 5.1 Price volatility risks:

This concerns raw materials and products amid highly volatile crude oil prices, global slowdown in economies, and unrest and terrorism in many locations

**Mitigation:** Constantly, IRPC joined hands with PTT Group companies to cut costs by relying more on indigenous sources; suitable inventory management; improvement of production management tools; and efficiency improvement in planning raw-material purchases, together with product processing and sale. In addition, IRPC's policy scope governs 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.

### 5.2 Foreign currency exchange risks:

These risks affect revenue, raw-material costs, and loans invested in projects with the US dollar denomination.

**Mitigation:** IRPC's risk management consists in making the ratio of US dollar-denominated loans match its revenue structure together with the management of crude oil proportions and purchasing conditions. For instance, switching from the dollar to the baht in paying for the crude to ease the volatility or selling some dollars to accommodate baht-denominated payment.

### 5.3 Operation risks:

Process or process support risks may affect IRPC's assets, personnel, or income opportunities. Below are mitigation measures.

**5.3.1 Reliability risks:** This could arise when processing units age with continuous operation, wearing out machinery and equipment without proper maintenance.

**Mitigation:** Continually, IRPC takes risk management measures through its projects to improve the efficiency of machinery and equipment, with mini-projects such as the Zero Unplanned Shutdown Project, thorough inspection of plant machinery and equipment for risky points, optimization of turnaround management efficiency through close coordination with contractors, and execution of the Operational Excellence Management System.

**5.3.2 Safety risks:** Facing employees, contractors, and third-party workers, these risks tend to result from negligence, lack of recognition for safety, or inadequate knowledge.

**Mitigation:** IRPC promotes its safety culture by devising policies and implementing various activities like the Process Safety Management Project and Safety Excellence Project. Training and awareness cultivation are given to all employees, contractors and workers, including the Outsource Safety Man development project and a project to ensure contractor control for compliance with safety rules. In addition, an inspector team was appointed to strictly audit safety compliance. Should accidents happen, IRPC's investigation committee is commissioned to identify causes and develop them into knowledge, which is then passed on to employees to prevent recurrence.

**5.3.3 Capital project risks:** This concerns the Fully Integrated PP Project to add value to IRPC and make it the No. 1 domestic supplier

**Mitigation:** IRPC treats critical projects as a corporate risk to closely monitor progress so as to overcome problems instantaneously and ensure that the project can achieve all its goals, including the project period, budget administration, project quality, safety, and continual cooperation with government agencies and communities.

**5.3.4 Environmental and community risks:** With IRPC's processing units lying close to communities, communities may be affected without sound control systems.

**Environmental risk mitigation:** Strictly, IRPC focuses on conformance to safety and environmental laws and regulations, as well as TIS/OHSAS 18001 and ISO 14001 health and environmental management systems. It strives for VOC reduction and high-risk elements. Proactivity is the rule, even where certain parameters still lie within standard values. To this end, teams are in place for instant analyses and problem-solving once abnormally high measurements are found. Finally, IRPC cooperates with DIW in developing its industrial zone into an Eco-Industrial Zone.

**Community and social risk mitigation:** Strictly and continuously, IRPC forges understanding and good relations, including construction and renovation of public utilities, scholarship presentation, Open House, operation of site coordination centers in community activities, and joint emergency drills with communities and government agencies.

#### **5.4 Organizational capability risks:**

These risks arising from employees' administration and performance must be modified to align with prevailing business Strategies and business circumstances.

**Mitigation:** IRPC strengthens its workforce and excellence in HR administration while improving its competencies, including capacity-building, improvement of performance outcome management system, career path management system, capability development system, and organizational restructuring for competitiveness.

#### **5.5 Business continuity risks:**

These result from assorted threats to business operations and could bring losses, negative image, and harm to critical activities.

**Mitigation:** IRPC introduced BCM (business continuity management), with formulation of BCPs (business continuity plans) in full, complemented by plan drills. Applied was ISO 22301 as a guideline for preparedness for various crises.



#### **5.6 Emerging risks:**

Over the next 3-5 years, these risks could arise from political, economic, social, environmental, legal, technological changes, and so on, including:

**5.6.1 Risks arising from free-trade agreements and new trade regulations,** like Trans-Pacific Partnership (TPP), which could adversely affect IRPC's current business opportunities and markets.

**Mitigation:** IRPC closely tracks data and investigates the likelihood of new free-trade agreements and imminent regulations. It investigates the impacts of each of its products sold, product development to conform to changing legislation, and support research on new, green products.

**5.6.2 Risk arising from natural gas supply depletion in the Gulf of Thailand (natural gas risks):** IRPC may bear the brunt of utility shortage for its processes, forcing it to cut capacities or cease processing altogether.

**Mitigation:** With PTT Group companies, IRPC plans gas supply allocation for possible shortage and has formulated plans to import gas. A relevant unit has studied ways to ease potentially rising costs.



## EVEREST



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 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 2015, 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.

Some 800 initiatives have taken shape under the Everest Project, this year forging roughly Baht 2.311 million in EBIT for IRPC, or 68% of the expected target at 3,416 million. Nevertheless, at the end of the year, the project achieved its target to increase the EBIT in the amount of Baht 5,827 million which effect the EBIT in 2017.

The estimated EBIT goal for the Everest Project was set at Baht 6.765 billion for 2017, and peak EBIT creation is expected to reach Baht 10.5 billion in 2018. As planned, the OHI goal is set to rise to the top quartile at 74 marks or more. IRPC should therefore achieve the goal of return on investment (ROIC) exceeding 14% (that is, in the top quartile) by 2020, implying high caliber for sustainably maintaining incremental profits.







Year's performance	Outcome (Baht million)	Year's goal (Baht million)
<b>Performance</b>		
<b>Operations area:</b> Efficiency improvement from crude oil and returns improvement by modifying production process units, higher energy efficiency, improved efficiency of maintenance, and operation loss reduction  More efficiency in timing and expenses of refining units' shutdowns for inspection and maintenance,	1,091	2,083
<b>Commercial area:</b> More trade value added from refining and petrochemical products.	778	549
<b>Procurement area:</b> Improved efficiency for equipment procurement and that of high-expense goods	277	399
<b>Corporate area:</b> Develop the ability to manage the company's expenses.	165	385
<b>Total</b>	2,311	3,416
<b>Organization Health</b>		
<b>Organization Health Index:</b> Improve all personnel's caliber with a 1 <sup>st</sup> Quartile (OHI score) goal of over 74	70	≥74



# HUMAN RESOURCE MANAGEMENT AND DEVELOPMENT



IRPC operates human resource (HR) management in accordance with the corporate strategic plans. It stresses the importance of continuous development of all employees' potentials in all business lines by equipping them with the ability to deal with challenges that accompany business growth opportunities. The company devises its HR vision by focusing on excellence in HR management, forging a healthy organization with capable, motivated staff to enhance their ability in driving the company's businesses and laying a foundation for sustainable business operation. In 2016, IRPC devised HR resource management strategies and an employee development policy with four missions as follows:

## 1. Effective Organization Structure

The review of organization structure of each unit started in 2015 has continued, including the restructuring of the unit responsible for product and innovation research to align with the business operation strategies. Definitions, work natures, job descriptions, and functional descriptions are revised for clarity, reduced duplication of work, and increased efficiency in nominating qualified and experienced employees consistent with work. The goal is to increase the capability of employees in each line of work so that they can constantly upgrade themselves. On workforce management, IRPC currently has

over 5,000 employees. It formulates the policy and guideline of workforce management in accordance with its mission to ensure maximum efficiency and benefit for the corporation. It also makes preparation to efficiently recruit new employees for the units that need additional manpower such as Operation.

## 2. Employee Enablement consisting of:

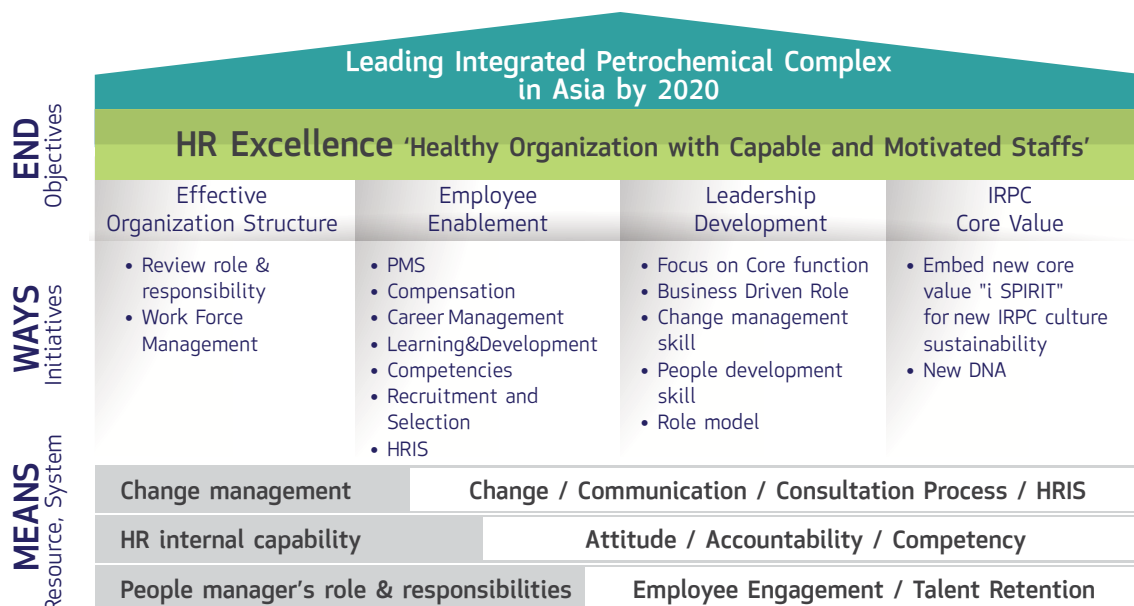
### 2.1 Performance Management System

This system determines the annual KPIs of each unit based on logics and joint consideration of many parties. It consists of self-assessment, follow-up on mid-year and year-end performance outcomes, regular (at least twice a year) discussions between supervisors and employees for common understanding with a focus on system and tool development reflecting fair reality and provision of processes to compare performance outcomes of each line of work (the "Round Table"). The assessment results will be used for the consideration of annual compensation such as annual salary increase under IRPC's compensation policy.

### 2.2 Compensation

The company devises a policy to review employees' compensation, welfare, and incentives in accordance with the law, comparable to leading peer companies to ensure employees' decent quality of life at the workplace and motivation to perform with utmost ability.

## HR Vision & Strategy 2016 - 2020



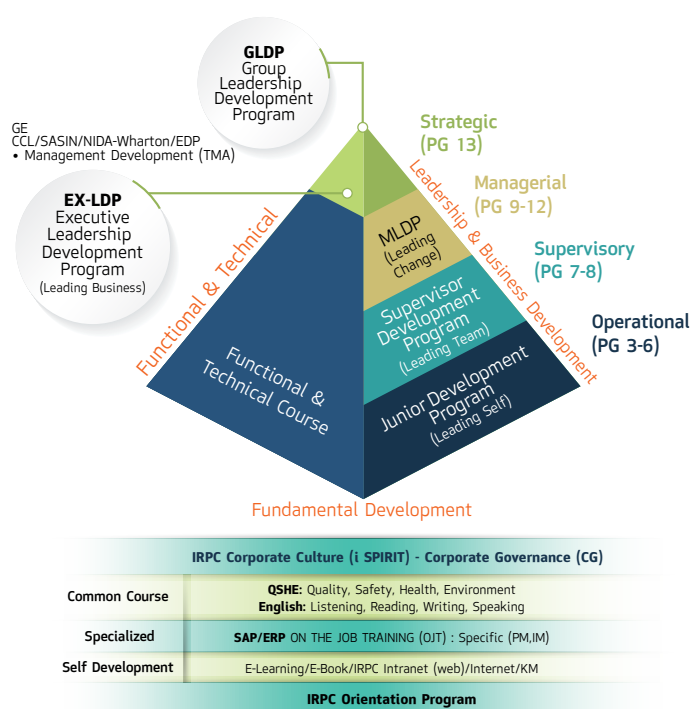
### 2.3 Career Management

It is an important system to lay down directions and goals to develop and prepare employees to align with IRPC's long-term growth direction. IRPC improves the career management system to be more efficient by reviewing the Capability Cluster and setting up Sub Clusters, including the Capability Cluster Committee (CCC) in line with the changed organizational structure. It also prepares for each position Career Experience and Current Estimated Potential (CEP) to ensure that their development of knowledge, capability, and experience matches job qualifications and that employees can efficiently grow with the organization.

### 2.4 Learning & Development

IRPC formulates a policy to value the development of executives and employees according to the company's HR development framework. It reviews the standard courses for positions that are necessary for training ("Training Roadmap") by preparing the "Handbook of Learning and HR Development" to describe IRPC's HR development framework in three dimensions so that employees and executives may use it as operating guidelines. It also promotes the development of employees' knowledge, skills, and potential so that they may be ready and become a major driving force for successful goal achievement.

The Executives' HR Management Skill Project is also put in place. The Lead Program consists of problem solving, team management, and communication to ensure maximum efficiency, as well as system development to ensure that supervisors and employees draw up Individual Development Plans (IDPs), by which supervisors communicate with employees to select





*Field trips to communicate and publicize the iSPIRIT activity to motivate and promote IRPC's core value in each dimension to ensure that employees' understanding and behavior meet IRPC's expectations.*

development guidelines with the ratio of 70:20:10 (Experience: Coaching: Formal Learning) as deemed appropriate to the needs of individual employees.

## 2.5 Competency

IRPC designed the technical competency as an employee development framework to ensure that employees are equipped with knowledge, skills, expertise, and experience in their respective lines of work. The company also reviews leadership competency to assess leadership competency and upgrade management skills for the leadership and business dimensions.

## 3. Leadership Development

IRPC recognizes that its success starts with the ability to recruit and retain high-potential employees. Therefore, it is committed to improving the HR management system, develop potential of employees, especially the Talent & Successor group, by formulating guidelines for HR management, development of employees' capability, and long-term employee retention. Moreover, it develops all executives' proper understanding and management concept of their roles to ensure that they will apply it for efficient management such as the Middle Management Leadership Program (MLDP), "LEADERSHIP GREATNESS: Leading Organization Change" Seminar at the VP level, and "7 Habits of Highly Effective People" course, including the 180-degree leadership assessment at the executive level to improve executives' leadership efficiency. The Middle Management Leadership Program (MLDP) aims

to develop the middle management to understand their roles and responsibilities to take care and develop the capability of their subordinates to be able to perform responsibly and efficiently.

## 4. IRPC Core Value (iSPIRIT)

IRPC pledges to cultivate its core value by stipulating employees' work behavior or operational norm for the corporation's unity in accordance with its core value (iSPIRIT) to ensure that IRPC can motivate employees toward the goal of the vision. Moreover, it links its core value to HR management and development such as the annual performance management system by assessing behavior at work in order to clearly implement the core value for both the executives and employees continuously and sustainably.

## 5. Human resources performance assessment

The company has analyzed the results of organizational health indicators by assessing 3 aspects and 9 factors of the organizational readiness as follows:



*"LEADERSHIP GREATNESS: Leading Organization Change" seminar at the VP level.*



*"7 Habits of Highly Effective People" course at the DM-VP level.*

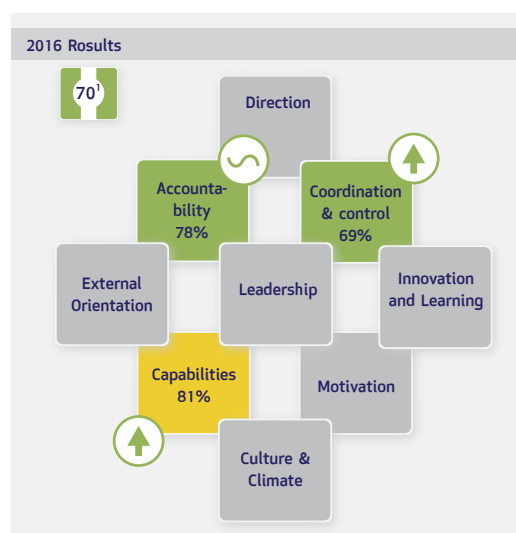
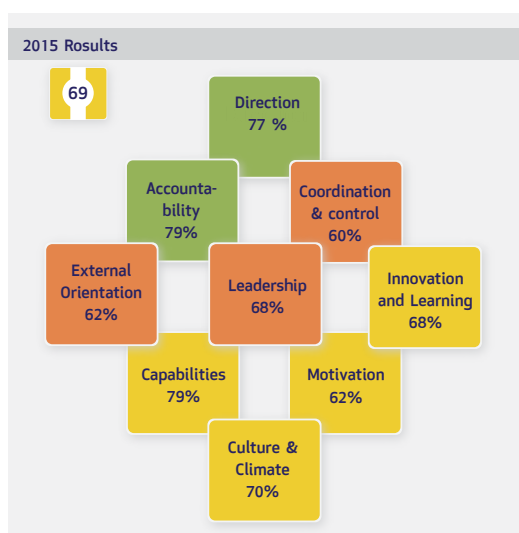
### 9 factors indicating the organizational readiness are as follows:

1. Organizational direction
2. Accountability
3. Coordination and control
4. External orientation
5. Leadership
6. Innovation and learning
7. Capabilities
8. Motivation
9. Culture and climate

### 3 aspects indicating the organizational readiness are as follows:

1. Concordance of the organizational direction, work environment and organizational culture
2. Strong internal operations
3. Abilities to acknowledge environmental changes and abilities to take advantage from such Changes

In 2016, the IRPC firstly improved 3 factors of operations which are Accountability, Performance management (Coordination&Control) and People Capability. Procedures



of the Performance Management have been improved by adding important processes which are value tree KPI cascading, KPI challenging, performance review (Feedback and Coaching) and Performance Round Table for Evaluation and Grading. At the end of 2016, the company surveyed the organizational health and found that the 3 developed factors had higher scores as expected. The result of organizational health indicators in 2016 is 70% which is higher than that in 2015 which is 69%.

When comparing with the leading international companies in Thailand and abroad, it is found that Coordination & Control and Accountability factors are at the top quartile. This reflects that the company's Performance Management System and Accountability are of equal

standards to leading companies worldwide. However, Capability is still at the 3rd quartile, so the company has been trying to improve the Competency Management system and Personnel Learning and Development. The company determines to carry out the projects for enhancing human resources excellence with the aim to increase the organizational health indicators to 73% in 2017.

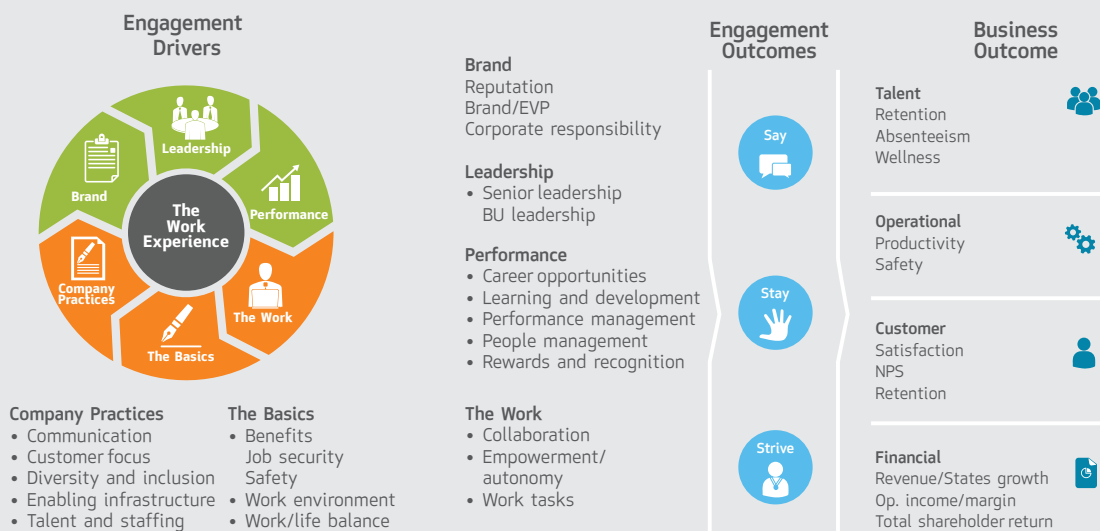
Also, the company has surveyed 6 aspect of the relationship between the employees and the organization, which include Leadership, Performance (how to accomplish the work), Brand (how to create the organizational brand, the Work (factors relating to the assigned tasks), the Basic (basic factors which the organization provides to the employees),

the Company Practice (how the company treats the employees) through the indicators “Say” (the employees say positively about the organization to their colleagues, prospective employees and clients), “Stay” (the employees’ determination to work for the company), “Strive” (the employees’ willingness to dedicate themselves and work beyond the company’s expectations for successful business). Based on the survey on 3,672 employees, it is found that the

score of the relationship between the employees and the company is 77%, which is at the top quartile in comparison with leading international companies. This reflects that the company’s personnel management is up to the international standards, and the company is competent to grow and compete sustainably. For this reason, we will continue focusing on the personnel who are essential resources for the growth of the company.

## Factors affect the employee engagement

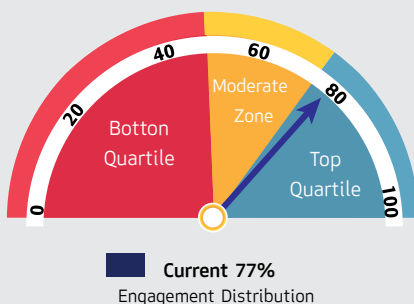
- The organization engagement score is not as important as the drivers to boost employees’ satisfaction.
- The important part of the concept is to be aware of the satisfaction level of each factor for prioritizing the vital factors which needed to be improved.



## Engagement Survey Overview

### Engage-O-Meter

Current engagement score to set the future target by Aon Hewitt



Based on the survey of 3,672 from 4,773 employees, the employee engagement score is 77%,

Driver	Questions	Current
Say	I would not hesitate to recommend this organization for a friend seeking employment	78%
	Given the opportunity, I tell others great thing about working here	77%
Stay	It would take a lot to get me to leave this organization	81%
	I rarely think about leaving this organization to work somewhere else	71%
Strive	This organization inspire me to do my work every day	73%
	This organization motivates me to contribute more than is normally required to complete my work	62%



# RESEARCH & DEVELOPMENT FOR EXCELLENCE



In 2016, R&D Excellence program has become more critical and made important part of corporate strategy to sustain IRPC business growth. By implementing the 10 years R&D product and technology roadmap, the organization has been re-structured to promote the cross functional and technology development ecosystem. The 3 main disciplines have been appointed to R&D Strategy & Open Innovation Management, New Product Platforms and Value Added Product with the manpower ratio of 10 : 20 : 70.

1. R&D Strategy & Open Innovation Management has been focusing on strategic formulation to drive successful R&D Product & Technology Roadmap execution, seeking new technology to fulfill product development portfolio by open innovation with academic and research institutes such as VISTEC and NSTDA including cooperation with international technology incubator to invest in technology startup company. In terms of intangible asset, 7 new patents have been granted. In addition, to increase capability of product commercialization, a simulation tool has been applied for product scale up.

2. New Technology Platforms have been focusing on emerging technology that can bring new opportunity for IRPC business. The 11 projects with open innovation have been established with top universities and institutes to support medium and long term R&D product & technology roadmap.

3. R&D for value added products have been focusing on cross functional collaboration with marketing, production engineering and other stakeholders involved in the product development value chain. The R&D ecosystem has also been improved in order to facilitate the acceleration of product development including increasing number of talent researchers, improving the current researcher capability, increasing advanced research equipments and instruments. This development aims for cost reduction and margin enhancement leading to product competitiveness and fast response to customer requirement.

According to R&D strategy, 20% of R&D staffs were recently recruited on the Master and Ph.D. level in order to carry out research activities based on R&D Product and technology roadmap.



## New Products Developed in 2016

Fully recognizing the need for research and development (R&D) for the country to become less dependent on overseas technologies, IRPC is well aware of the significance of R&D and has therefore defined "R&D Excellence" as a key strategy for sustainable organizational growth. Premium products with special and unique properties developed by R&D for various industrial work and responsive to consumers' needs are what the company has focused on, including the following.

### 1. User-friendly polyurethane products

Viewing the environment with the highest regard, IRPC is consequently dedicated to the R&D of special polyurethane products including the new environmentally friendly blowing agent with no component of hydrochlorofluorocarbon (HCFC), refrigerants to be soon prohibited in Thailand and Southeast Asia. Not only is this new product environmentally friendly, but its properties are also perfectly suitable to produce solid polyurethane foam, a great insulator popularly used in the construction of walls in buildings. Easy



to use and non-corrosive to machinery, the products are also a zero ozone depletion potential (ODP) and low global warming potential (GWP), ideally suitable for the government policy on new industrial standards.

## 2. GPPS (General Purpose Polystyrene)

With a special transparent property, GPPS is a widely used thermoplastic material for a range of products such as household utensils, toys, electrical appliances, medical devices, and food packaging. A new GPPS, grade GP112, developed with narrow molecular weight distribution is highly fluid and contains highly stabilized physical properties, resistant to very high heat, and is therefore suitable for making sheet with inline thermoforming, thus reducing the molding time while consuming less energy. Classified as high productivity, GPPS costless to mold and minimizes impact on global warming. GP112 properties are consequently appropriate for food packages such as glasses, ice cream cups, bakery packs, fresh and dried fruit packets, and containers for sweets and snacks.

## 3. IWSR001X F041X Polypropylene Composite

This is a glass-reinforced plastic (GRP) with high impact strength, chemical corrosive resistance, light weight, and durability to tough environment and temperature as high as 150°C for 1,000 hours while retaining all physical properties. They are set to be developed into low gas emission reinforcement polypropylene for the automotive industry to cope with new regulatory environmental control on CO<sub>2</sub> emission, already enforced in Europe and the US.

## 4. 1111NRXGA6 Polypropylene Composite

These polypropylene composites are advanced products from glass-reinforced plastic (GRP), highly durable to bending and can become higher resistant to strong colliding force. The products can therefore be designed for outdoor application, endurance to severe weather, humidity, chemical weathering and temperature oscillation. These products fit well for injection molding and are widely used as construction materials for both on-land and subsurface environment



*Post-Tension for Construction work*

and are uniquely responsive to specific needs of customers looking for high-efficiency reinforced plastic materials.

## 5. Dust-Free & UV-Resistant Polypropylene Block-copolymer

These products were specifically developed for injection molding. To meet a wide range of production, there are two different grades: 2348NC (MFI 10) and 2548SC (MFI 30). The products are UV-resistant, developed with a surface resistivity of 10<sup>11</sup> ohm/sq., preventing electrostatic and therefore free from minute dust and particles. Because of their durability, they are long-lasting and thus attractive to consumers even at higher or premium prices.

## 6. Styrene Vulcanized Natural Rubber (S-VNR)

With its fully integrated petrochemical and polymer production, IRPC is able to fully commit itself to continuously developing truly environmentally friendly processes that benefit the surrounding communities and the public. Synthetic rubber was part of the raw materials to produce high-impact polystyrene (HIPS) and acrylonitrile butadiene styrene (ABS), high-impact materials used in the high-valued manufacturing industry. Thanks to R&D success, IRPC has successfully replaced this synthetic rubber with natural rubber, which is environmentally friendly, in the production of HIPS and ABS.



IRPC provided rubber traffic cones in raising awareness and enhancing road safety to Rayong Provincial Police and the office of the Permanent Secretary.



## From Laboratory to Commercial Sale

SVNR Powder with 50% natural rubber was invented by IRPC researchers in January 2016. More innovation efforts resulted in the discovery of SNVR products with 35% natural rubber component in March 2016. The traffic cone prototype was introduced and later widely accepted by various customers.

Commercial production of SVNR products was first commissioned in June 2016

Following an oversupply of natural rubber in the Thai market, IRPC has accelerated its research to consume more natural rubber, including the Green Thermoplastic Vulcanizates (Green TPVs). High-valued

polypropylene (PP) is another product the company can produce from natural rubber (NR). With a mixture of PP and NR processed through dynamic vulcanization, the outcome is environmentally friendly polyolefins, a material with natural rubber specifications but its physical form alterable by a thermoplastic process, which is convenient and more economic than conventional rubber transformation. With its physical properties equivalent to TPVs, Green TPVs are used in Automotive, Building & Construction, mold goods and Electrical & Electronic Industry.



# MANAGEMENT DISCUSSION AND ANALYSIS

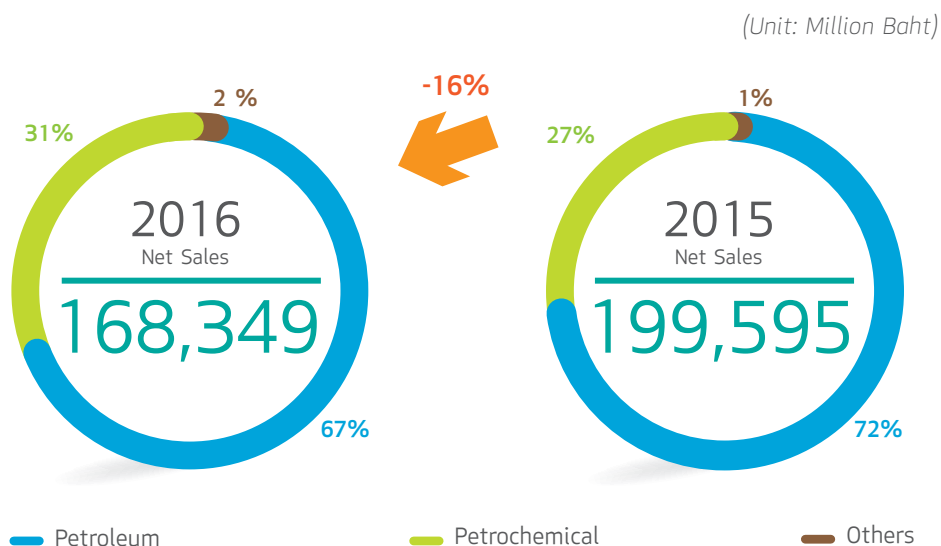
## Executive Summary

Summary Consolidated Statement of Income	Unit	2016	2015	Change
Sale <sup>[1]</sup>	Million Baht	185,041	214,172	(14%)
Net Sales <sup>[2]</sup>	Million Baht	168,349	199,595	(16%)
Market GIM	Million Baht	31,033	32,156	(3%)
	USD/bbl	13.04	13.99	(7%)
Accounting GIM	Million Baht	30,457	28,741	6%
	USD/bbl	12.80	12.50	2%
EBITDA	Million Baht	17,430	17,033	2%
Net Profit	Million Baht	9,721	9,402	3%

Note :

<sup>[1]</sup> Sales includes (1) Petroleum Sales (2) Petrochemical Sales (3) Power and Utilities Sales

<sup>[2]</sup> Net Sales includes (1) Petroleum Sales(excluding excise tax) (2) Petrochemical Sales (3) Power and Utilities Sales



In 2016, the Company had net sales of Baht 168,349 million, falling by 16% as the product prices declined following the crude oil price. The refinery utilization rate was at 183 KBD or 85% due to the RDCC (major unit of UHV project) which started its commercial run in

the second half of 2016 (2H/2016). RDCC could not be fully operated as design since it is under improvement process though 2016 utilization rate was unchanged when compared with 2015.



While average product spreads reduced compared to last year spreads. Refinery product spreads dropped because of supply gluts and petrochemical product spread dropped due to the declining demand according to the economic stagnation. However, thanks to better organization efficiency, the “EVEREST” project, market GIM was Baht 31,033 million or 13.04 USD per barrel which slightly decreased by 3%.

The Company began to record the depreciation and financial cost of the UHV Project since its commencement in July 2016. In 2016, the major non-recurring items were the tax benefit from corporate income tax of Baht 1,449 million which was contributed from the deferred tax asset of tax loss carry forwards and 2 subsidiaries liquidation while there were the receipts of insurance compensation and the reversal of doubtful account from TPI Aromatics Public Company Limited totalling Baht 4,128 million in 2015.

As a result, performance in 2016 appeared to be the same as in 2015. The EBITDA was Baht 17,430 million, increasing by 2% and net profit was Baht 9,721 million, increasing by 3%.

### Key incidents in 2016

- The entire business of Thai ABS Co.,Ltd., of which the Company held 99.99% of the shares, was transferred to the Company for corporate reorganization on August 1, 2016 and Thai ABS Co.,Ltd. was dissolved on the same day.
- Rayong Tank Terminal Co., Ltd. and IRPC Energy Co., Ltd., the subsidiaries which the Company held 99.99%, completed the registration for the liquidation on February 19 and September 30, 2016 respectively. The Company reversed the allowance for the impairment and write-off of this investment, then recorded the deferred tax asset from the liquidation.

## Operating Performance and Financial Position

### 1. Operating Performance by Business Units

#### 1.1. Petroleum business unit

##### 1.1.1 Petroleum Market Overview

#### Dubai Price



Crude oil prices in 2016 rallied from USD22-55 per barrel. Its yearly average price was USD 41.27 per barrel, decreasing from USD 50.91 per barrel in 2015. The crude supply glut of around 2 million barrels per day pressed down the price due to unchanged production of OPEC and Russia supply and pressure of excess supply from Iran. The glut of 1 million barrel per day came from OPEC members who increased their production. As the demand grew for 1.3 million barrels per day, the market equilibrium did not achieve. However, on November 30, 2016, the OPEC members and the Non-OPEC members decided to reduce their production of around 1.2 and 0.6 million barrels per day based on their production in October 2016, respectively. The agreement was effective since January 2017 for 6 months. As a consequence, the crude oil supply decreases by 1.8 million barrels supported its price.

In 4Q16, Dubai prices hit the highest of USD 54.2 per barrel in mid of December after the OPEC's and the Non-OPEC's conclusion on their productions reduction, trend of US's low inventory level and lower demand after winter seasons.

### 1.1.2 Crude Intake and Capacity

Petroleum	2016	2015	Change
<b>Crude Intake</b>			
Million barrels	67.03	66.62	1%
KBD	183	183	0%
<b>Utilization Rate</b>			
Refinery	85%	85%	0%
RDCC	43%	0%	43%
Lube Base Oil	93%	103%	(10%)

Total production in 2016 was 67.03 million barrels or 183 KBD, 85% of utilization rate, which was at the same level as last year utilization rate. RDCC utilization rate was 43% as it started up in July 2016. (The RDCC plant or UHV project consists of 2 major units; the RDCC unit and HYVAHL unit which started the commercial runs in mid of July 2016 and early of August 2016, respectively, at the average utilization

rate of 75%). The Desulfurization unit (HYVAHL), was in the process to integrate with RDCC plant.

The production of Lube Base Oil plant was 6.8 million barrels, 93% of utilization rate, decreasing 10% when compared to 2015 of 7.5 million barrels, 103% of utilization rate as the declined of demand from delay of road construction.

### 1.1.3 Petroleum Sales

Product	Sales Volume (Million barrel)		Sales Value (Million Baht)	
	2016	2015	2016	2015
Refinery	51.98	54.00	98,348	122,279
Lube Base Oil	7.22	8.09	14,804	21,016
<b>Total</b>	<b>59.19</b>	<b>62.09</b>	<b>113,152</b>	<b>143,295</b>

In 2016, net sales of petroleum businesses were Baht 113,152 million, declining by Baht 30,143 million, or 21% from last year mainly owing to a 16% decrease in the average product prices in line with a drop of

crude oil price and a 5% decrease in sales volume from 62.09 million barrels in 2015 to 59.19 million barrels in 2016. The declined sales volume was mainly from Fuel Oil, Diesel and Lube Base Oil.

### 1.1.4 Petroleum Sales Breakdown

Product	2016		2015	
	Local	Export	Local	Export
Refinery	59%	41%	65%	35%
Lube Base Oil	48%	52%	39%	61%
<b>Total</b>	<b>57%</b>	<b>43%</b>	<b>62%</b>	<b>38%</b>

When 2016 compared with 2015, the percentage of domestic sales dropped by 5% from 62% to 57% due to Fuel Oil and Naphtha that had to revert for using

as the feedstock for HYVAHL unit in RDCC plant. The export products mostly shipped to Singapore, Malaysia and Cambodia.

### 1.1.5 The spread between Petroleum products

average price	2016	2015	Change
<b>Dubai Crude Oil</b> (USD/bbl)	41.27	50.91	(19%)
<b>Petroleum</b> (USD/bbl)			
Naphtha - Dubai	1.30	1.70	(24%)
ULG95 - Dubai	14.90	18.30	(19%)
Gas Oil 0.05%S - Dubai	10.80	13.70	(21%)
FO 180 3.5%S - Dubai	(5.0)	(5.0)	0%
<b>Lube Base Oil</b> (USD/MT)			
500SN - FO 180 3.5%S	417	438	(5%)
150BS - FO 180 3.5%S	737	777	(5%)
Asphalt - FO 180 3.5%S	(50)	55	(191%)

#### The spread between Petroleum products and Dubai

- Naphtha Spread-Lower** Naphtha - Dubai spread was USD 1.3 per barrel, decreasing by 24%. In addition, the high level of supply, the increasing production from India and Middle East and the greater export from Europe to Asia made the spread narrower.
- ULG95 Spread-Lower** ULG95 - Dubai spread was USD 14.9 per barrel, lower by 19%. The supply glut in Asia, the increasing production from Iran and more export from China were the main causes. However, the gasoline price at this low level encouraged demand from driving, and this supported its prices.
- Gas Oil Spread-Lower** Gasoil 0.05%S - Dubai spread was USD 10.8 per barrel, down by 21%. The supply glut from Middle East and China and the high level of gasoil inventories continued to press down the prices.
- Fuel Oil Spread - Flat** Fuel oil (FO 180 3.5%S) - Dubai spread was USD - 5.0 per barrel, in line with last year fuel oil spread.

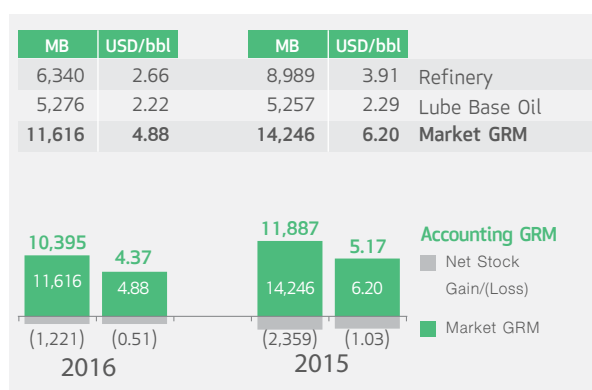
#### The spread between Lube Base Oil products and FO 180 3.5%S

- 500SN Spread-Lower** Lube base 500SN - fuel oil spread was USD 417 per ton, decreasing by 5% due to the price competition in Asia from Europe supply to reduce inventories.

- Asphalt Spread-Lower** Asphalt - fuel oil spread fell to USD -50 per ton, down by 191% when compared to USD 55 per ton in 2015. The demand shrank as a result of economic stagnation in Asia, especially China which cut the budget for the new road constructions.

### 1.1.6 Gross Refinery Margin

In 2016, Market Gross Refinery Margin (Market GRM) of Baht 11,616 million or USD 4.88 per barrel, fell by Baht 2,630 million or USD 1.32 per barrel from last year which mainly caused by a decrease in the product spread especially in Diesel and Asphalt.



There was the net stock loss of Baht 1,221 million or USD -0.51 per barrel, including stock gain of Baht 2,251 million or USD +0.95 per barrel and a reversal of LCM of Baht 149 million or USD +0.06 per barrel offsetting by an oil hedging loss of Baht 3,621 million or USD -1.52 per barrel.

## 1.2 Petrochemical business units

### 1.2.1 Petrochemical Market Overview

The market situation for Olefin products in 2016 moderately worsened. The demand shrank, subsequent to the global economic slowdown. However, the crude oil price at the level of USD 50 per barrel helped stimulate demand. Also, this level of crude oil price delayed CTO and MTO Olefin capacity expansion projects in China. As such, the excess supply in 2016 was not much as expected.

For Styrenic products, the market situation in 2016 improved constantly and stayed in a good direction. The demand for these products became stronger, especially in AEC, than the addition supply. However, when compared with what it was in 2015, it worsened. In 2015, the market situation was prosperous: the crude oil price followed the downward trend and its price was volatile, but the product prices moved down slower. This resulted in higher margin.

### 1.2.2 Petrochemical Capacity

Petroleum	2016	2015	Change
<b>Utilization Rate</b>			
Olefins Group	90%	90%	0%
Aromatics and Styrenics Group	91%	91%	0%

In 2016, the utilization rate of Olefins and Aromatics & Styrenics were 90% and 91%, respectively, similar to those of last year. The production was 1.3 Million Ton.

### 1.2.3 Petrochemical Sales

Product	Sales Volume (KTon)		Sale Value (Million Baht)	
	2016	2015	2016	2015
Olefins Group	857	791	29,780	30,794
Aromatics and Styrenics Group	677	634	22,335	22,317
<b>Total</b>	<b>1,534</b>	<b>1,424</b>	<b>52,115</b>	<b>53,111</b>

Net sales of petrochemical businesses were Baht 52,115 million, declining by Baht 996 million or 2%. The main reasons were from a 10% decrease in average product prices following the decrease in raw material prices while an increase in sales volume from 1,424 Kton to 1,534 Kton or 8%. The revenue was mainly from Olefins group, 57% of petrochemical sales revenue.

### 1.2.4 Petrochemical Sales Breakdown

Product	2016		2015	
	Local	Export	Local	Export
Olefins Group	64%	36%	67%	33%
Aromatics and Styrenics Group	46%	54%	46%	54%
<b>Total</b>	<b>56%</b>	<b>44%</b>	<b>58%</b>	<b>42%</b>

In 2016, the proportion of Petrochemical sales were 56:44 as domestic and export accordingly. The domestic sales decreased by 2% from 2015, mainly from a decrease of HDPE. Besides, an increase of export products mostly resulted from export propylene from RDCC plant.

### 1.2.5 The spread between key petrochemical products and raw material

The spread between key products and raw material is summarized below here.

Average Price (USD/MT)	2016	2015	Change
Naphtha	398	491	(19%)
<b>Olefins</b>			
Ethylene - Naphtha	639	613	4%
HDPE - Ethylene	209	261	(20%)
HDPE - Naphtha	848	874	(3%)
Propylene - Naphtha	306	283	8%
PP - Propylene	350	384	(9%)
PP - Naphtha	656	667	(2%)
<b>Aromatics</b>			
BZ - Naphtha	245	194	26%
TOL - Naphtha	194	170	14%
MX - Naphtha	250	210	19%
<b>Styrenics</b>			
SM - Naphtha	666	610	9%
ABS - Naphtha	957	973	(2%)
ABS - SM	291	363	(20%)
PS (GPPS) - Naphtha	817	776	5%
PS (GPPS) - SM	151	166	(9%)

#### The spread between Polyolefins (HDPE/PP) and Naphtha

- **HDPE Spread - Lower** HDPE - Naphtha spread was USD 848 per ton, moving down by 3%. The product price decreased due to the HDPE's weak demand, the lower HDPE spread than 2015 was due to HDPE's spread lower than naphtha and Ethylene prices to Dubai.
- **PP Spread - Lower** PP - Naphtha spread was USD 656 per ton, decreasing slightly by 2%. The product price, PP, moved down as a consequence of weak demand.

#### The spread between Aromatics (Toluene and Mix Xylene) and Naphtha

- **TOL Spread - Higher** Toluene - Naphtha spread was USD 194 per ton, up by 14% resulted from unplanned shutdown plants in Singapore and the higher prices of Gasoline made Toluene demand became stronger for Gasoline production.

- **MX Spread - Higher** Mixed Xylene - Naphtha spread was USD 250 per ton, up by 19%. Paraxylene price stayed at high level, which resulted in stable Mixed Xylene price while Naphtha price moved down continuously.

#### The spread between Polystyrenics (ABS/PS) and Naphtha

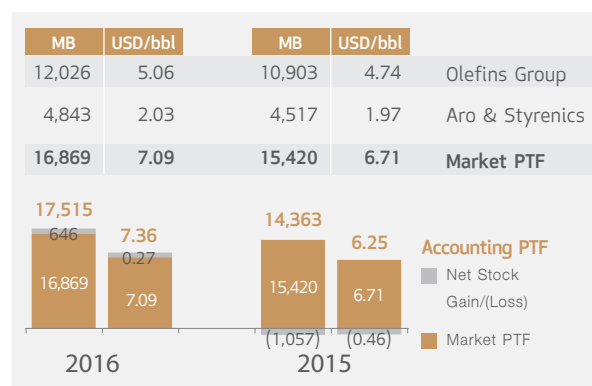
- **ABS Spread - Lower** ABS - Naphtha spread was USD 957 per ton, moderately lower by 2%. The excess supply from China and remained weak demand then pressed its price down.
- **PS Spread - Higher** PS-Naphtha moved up to USD 817 per ton, up by 5%. The product price stayed stable, supported by the demand in free trade area in AEC.



### 1.2.6 Product to Feed Margin (Product to Feed : PTF)

In 2016, the Market Product to Feed (Market PTF) of Baht 16,869 million or USD 7.09 per barrel increased by Baht 1,449 million or USD 0.38 per barrel, compared to 2015. The main reason was from the profit from Everest project despite the lower petrochemical product spread. The net stock gain was Baht 646 million or USD +0.27 per barrel, including the stock gain of Baht 505 million or USD +0.21 per barrel plus a reversal of LCM of Baht 141 million or USD +0.06 per barrel. Hence, the Company had Accounting

PTF of Baht 17,515 million or USD 7.36 per barrel, increased by Baht 3,151 million or USD 1.11 per barrel from last year.



## 1.3 Power Plant and Utility business units

### 1.3.1 Power Plant Capacity and Sales

	2016	2015	Change
<b>Utilization Rate</b>			
Electricity	75%	75%	0%
Steam	73%	75%	(2%)
<b>Sales (Million Baht)</b>			
Electricity	1,822	1,924	(5%)
Steam	1,059	1,107	(4%)
Others	201	158	27%
<b>Total</b>	<b>3,082</b>	<b>3,189</b>	<b>(3%)</b>

In 2016, the utilization rate was unchanged at 75%. Net sales of power and utility businesses were Baht 3,082 million, decreasing by 3% from 2015. The main reason were a decrease in sales price per unit

following a drop in raw material price while an increase in sales volume due to the shutdown of customers' plant that located in IRPC industrial estate last year.

## 1.4 Total Operating Performance

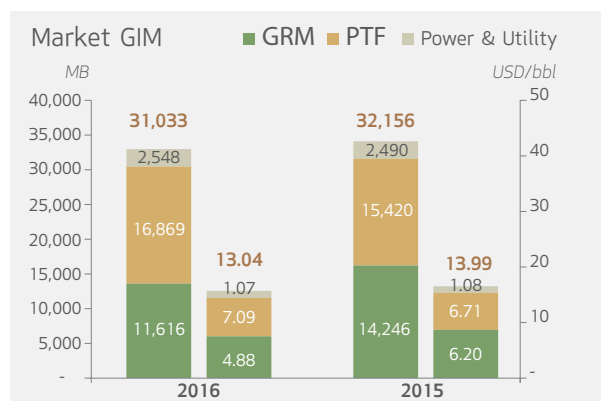
Total Operating Performance of IRPC and its subsidiaries for 2016 are as follows;

Consolidated Statement of Income	Million Baht		USD per barrel	
	2016	2015	2016	2015
Average FX (THB/USD)	35.47	34.40		
Total Crude Intake (Mbbbl)	67.03	66.62		
Average Crude (USD/bbl) <sup>(1)</sup>	44.22	53.32		
Sale	185,041	214,172	77.83	93.46
Net Sales	168,349	199,595	70.81	86.86
Cost of Feedstock (Market Price)	(137,316)	(167,439)	(57.77)	(72.87)
<b>Market GIM</b>	<b>31,033</b>	<b>32,156</b>	<b>13.04</b>	<b>13.99</b>
Stock Gain/(Loss)	2,755	(5,208)	1.16	(2.27)
Lower of Cost or Market	290	2,969	0.12	1.29
Oil Hedging Gain/(Loss)	(3,621)	(1,176)	(1.52)	(0.51)
<b>Accounting GIM</b>	<b>30,457</b>	<b>28,741</b>	<b>12.80</b>	<b>12.50</b>
Other Incomes <sup>(2)</sup>	1,301	2,643	0.55	1.15
Selling Expenses	(1,198)	(1,207)	(0.50)	(0.53)
<b>Accounting GIM and Other Income</b>	<b>30,560</b>	<b>30,177</b>	<b>12.85</b>	<b>13.12</b>
Operating Expenses	(13,130)	(13,144)	(5.52)	(5.72)
<b>EBITDA</b>	<b>17,430</b>	<b>17,033</b>	<b>7.33</b>	<b>7.40</b>
Depreciation	(6,249)	(5,457)	(2.63)	(2.37)
<b>EBIT</b>	<b>11,181</b>	<b>11,576</b>	<b>4.70</b>	<b>5.03</b>
Net Financing Cost	(1,481)	(1,162)	(0.62)	(0.51)
Gain/(Loss) from Foreign Exchange	104	(1,288)	0.04	(0.56)
Gain/(Loss) from impairment and disposal of fixed assets	3	18	-	0.01
Gain/(Loss) from Investment	184	(157)	0.07	(0.07)
Other Expenses	43	2,782	0.02	1.21
<b>Net Profit/(Loss) before Income Tax</b>	<b>10,034</b>	<b>11,769</b>	<b>4.21</b>	<b>5.11</b>
Income Tax	(282)	(2,346)	(0.12)	(1.02)
Gain/(Loss) from non-controlling interests	(31)	(21)	(0.01)	(0.01)
<b>Net Profit/(Loss)</b>	<b>9,721</b>	<b>9,402</b>	<b>4.08</b>	<b>4.08</b>

Note : <sup>(1)</sup>Average market prices of crude used in the product process.

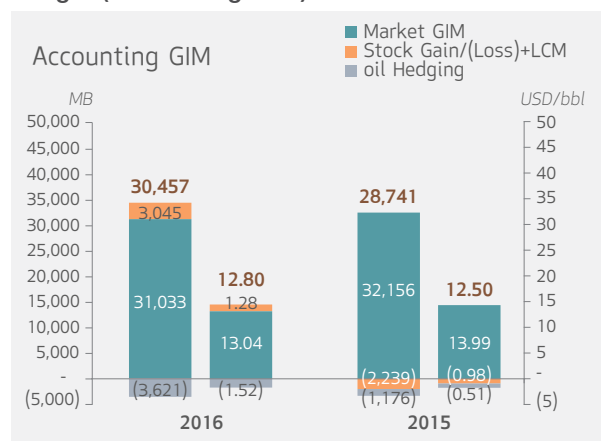
<sup>(2)</sup>Other incomes consist of sale of lands, port, tank farm and service etc.

### 1.4.1 Market Gross Integrated Margin



Market Gross Integrated Margin (Market GIM) of Baht 31,033 million or USD 13.04 per barrel dropped by USD 0.95 per barrel mainly caused by the lower spread of the petroleum and petrochemical products.

### 1.4.2 Accounting Gross Integrated Margin (Accounting GIM)



Accounting Gross Integrated Margin (Accounting GIM) was Baht 30,457 million or USD 12.80 per barrel, increasing by Baht 1,716 million or USD 0.30 per barrel from 2015. The main reasons was a drop in the net stock loss of Baht 2,839 million or USD 1.25 per barrel (net stock loss in 2016 and 2015 were USD -0.24 and -1.49 per barrel, respectively) offsetting with a decrease in Market GIM of Baht 1,123 million or USD 0.95 per barrel.

### 1.4.3 Other incomes

Other incomes consist of port, tank farm and services etc. In 2016, other incomes of Baht 1,301 million decreased by Baht 1,342 million from Baht 2,643 million in 2015. This was mainly resulted from the insurance compensation receipts for the fire incident in the VGOHT unit in 2015 amounting to Baht 1,305 million.

### 1.4.4 Operating Expenses

The operating expenses of Baht 13,130 million or USD 5.52 per barrel slightly declined by 0.1% mainly from a decrease in the insurance premium offsetting with an increase in the staff costs.

In 2016, the research and development expenses both existing and new products aim to increase the competitive advantage amounting to Baht 335 million, including researcher's salary, expenses related to the research, and payroll for external experts amounting to Baht 142 million as well as the research tools and others supporting the research and development of Baht 193 million.

### 1.4.5 Depreciation Expenses

Depreciation increased by Baht 792 million. This was mainly resulted from the commencement of the commercial operating date (COD) from RDCC plant in July 2016.

### 1.4.6 Financial Costs

Financial costs increased by Baht 319 million mainly from an increase in the interest expense of Baht 564 million due to the increase of the interest expense after the COD of UHV project. Furthermore, there was loss from financial derivatives contracts (e.g. Cross Currency Swap: CCS) in 2015 amounting to Baht 193 million while there was profit from CCS of Baht 54 million in 2016.

### 1.4.7 Gain/Loss from Foreign Exchange

As Thai Baht appreciation against USD since the end of 2015 resulted in unrealized foreign exchange gain in 2016 amounting to Baht 104 million while unrealized foreign exchange loss of Baht 1,288 million in 2015.

### 1.4.8 Gain/Loss from Investment

Gain from investment was Baht 184 million, rising by Baht 341 million mainly because of the higher of equity values in associates as well as the higher of dividend received.

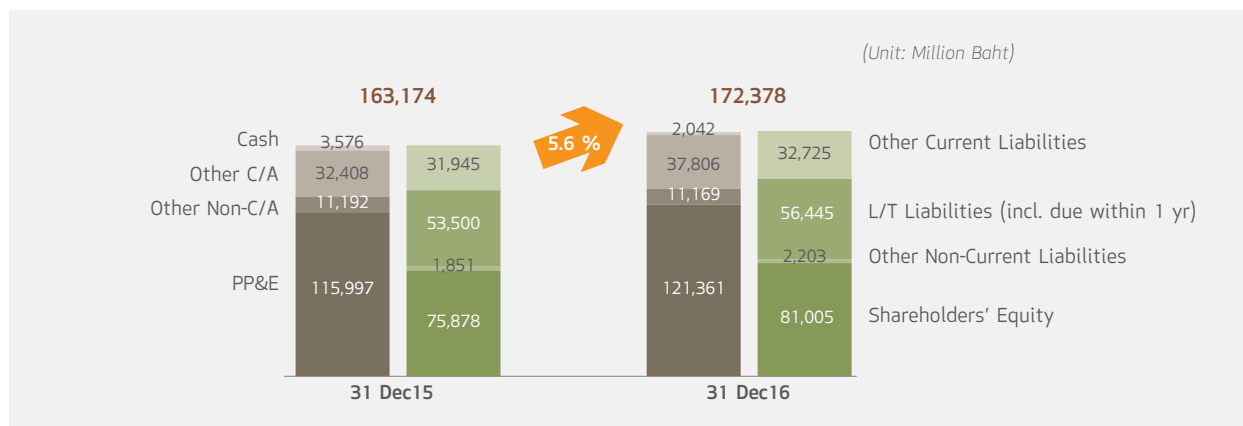
### 1.4.9 Other Expenses

There was profit from the reversal of doubtful account of Baht 43 million while it was Baht 2,782 million in 2015, mostly caused by received debt repayment from TPI Aromatics Public Company Limited which was Baht 2,823 million higher than the balance after offsetting of assets and liabilities.

### 1.4.10 Corporate Income Tax

In 2016, there was the corporate income tax amounting to Baht 282 million, decreasing by Baht 2,064 million when compared to last year, mainly due to the tax benefit from loss carry forward and the liquidation of both Rayong Tank Terminal Company Limited and IRPC Energy Company Limited.

## 2. Financial Positions

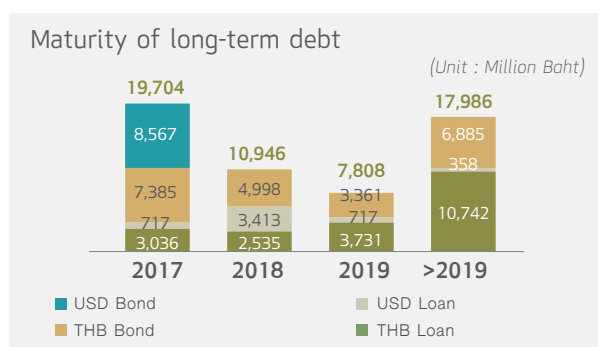


### 2.1 Assets

As of December 31, 2016, the Company had total assets of Baht 172,378 million, increased by Baht 9,204 million from December 31, 2015. It was due to the following reasons:

- Account receivable increased by Baht 1,025 million mainly because of an increase in the product prices. For 2016, the average collection period was 18 days decrease 1 day from 2015.
- Inventory increased by Baht 4,477 million or 21% because of an increase of inventory volume from 8.93 million barrel at the end of 2015 to 9.61 million barrel at the end of 2016, mainly due to an increase of crude oil intake for production. The inventory day was 27 days, raised by 2 days compared to 2015.
- Non-current assets raised by Baht 5,340 million or 4% due to an increase in fixed assets by Baht 11,298 million, largely contributed from the RDCC plant, PPE & PPC project and an increase in investment in associates by Baht 426 million. However, these were partially offset by a decrease of the depreciation and amortization expenses by Baht 6,247 million.

### 2.2 Liabilities



Note : Long-term debt as of 31 December 2016

As of December 31, 2016, the Company had total liabilities of Baht 91,373 million, increased by Baht 4,077 million, compared to the end of 2015. It was due to the following reasons:

- Other current liabilities went up by Baht 780 million, mainly due to;
  - Account payable went down by Baht 5,949 million due to a reduction of payment term of crude oil payable from 90 days to 60 days. For 2016, the average collection period was 50 days, increased by 3 days compared to 2015.
  - Other current liabilities went up by Baht 6,575 million, consisted of an increase of the short-terms loan by Baht 5,937 million, the payables from related parties by Baht 213 million, advance payments for goods by Baht 79 million, accrued bonus by Baht 63 million and other payable by Baht 283 million.
- Long-terms loan including current portion of long-terms loan increased by Baht 2,945 million to Baht 56,445 million, mainly caused by an increase of the long-terms loan drawdown of Baht 6,500 million while the repaid for loan of Baht 3,373 million. There was unrealized foreign exchange gain of Baht 182 million from the effect of Thai Baht appreciation against USD.

### The details of long-terms debt are shown below

(Unit : Million Baht)

	Dec 31, 2016	Dec 31, 2015	Change
USD Bonds	8,567	8,622	(55)
Thai Baht Bonds	22,629	22,623	6
USD Loan	5,204	5,959	(755)
Thai Baht Loan	20,045	16,296	3,749
<b>Total</b>	<b>56,445</b>	<b>53,500</b>	<b>2,945</b>
less current portion of long-terms loan	(19,704)	(4,265)	(15,439)
<b>Net Outstanding Debt</b>	<b>36,741</b>	<b>49,235</b>	<b>(12,494)</b>

For financial management, the Company's approach to financing in the long term loans from local financial institutions and/or the issuance of bonds in order to repay the loan due in 2017 approximately Baht 20,000 million by considering the situation of financial markets during the period. The Company signed a syndicated loan agreement and the loan agreement with local financial institutions amounting to Baht 20,000 million.

- Other non-current liabilities raised by Baht 352 million, which was mainly caused by an increase in the employee benefit obligations.

### 2.3 Shareholders' Equity

As of December 31, 2016, shareholders' equity amounted to Baht 81,005 million which was higher than that reported as of December 31, 2015 for Baht 5,127 million. This was mainly because of an increase in net profit for 2016 amounting to Baht 9,721 million and gain on revaluation available-for-sale investments by Baht 92 million. While offsetting with dividend payment amounted to Baht 4,490 million and provision for employees raised by Baht 207 million.

### 3. Statement of Cash Flow

(Unit : Million Baht)

	2559	2558
1. EBITDA	17,430	17,033
2. Change in operating assets and liabilities	(10,206)	10,807
3. Net cash flows from(used in) operating activities	7,224	27,840
4. Net cash flows from(used in) investing activities	(10,687)	(11,271)
5. Net cash flows from(used in) financing activities	1,929	(15,002)
<b>6. Net increase (decrease)</b>	<b>(1,534)</b>	<b>1,567</b>
7. Cash at beginning	3,576	2,009
<b>8. Cash at ending</b>	<b>2,042</b>	<b>3,576</b>

As of December 31, 2016, the cash balance was at Baht 2,042 million. Net cash flow decreased by Baht 1,534 million, which was mainly contributed from the following items.

- Net cash inflow of Baht 7,224 million from operating activities consisted of EBITDA of Baht 17,430 million and cash outflow of Baht 10,206 million

resulting from the changes in the operating assets and liabilities. Important items contributing to cash outflow from operating included an increase of Baht 4,250 million in inventories, an increase of Baht 965 million in account receivable, a decrease of Baht 5,951 million in account payable. While cash inflow from operating included other account payable increased



by Baht 485 million, account payable from related parties increased by Baht 213 million, other current assets decreased by Baht 163 million and advance payment for goods increased by Baht 79 million.

- Net cash outflow of Baht 10,687 million from investing activities mainly for the Upstream Project for Hygiene & Value-added Products (UHV) and PP Expansion and PP Compounding (PPE & PPC) project.
- Net cash inflow of Baht 1,929 million from financing activities mainly consisted of long-terms loan drawdown of Baht 6,500 million and short-terms loan drawdown of Baht 5,937 million while there was cash outflow from the repayments for short-terms and long-terms loans of Baht 3,456 million, interest payment of Baht 2,576 million and dividend payment of Baht 4,490 million.

#### 4. Liquidity and Capital Structure

In 2016, current ratio was 0.76 times, decreased 0.23 times comparing to 2015 at 0.99 times. It was mainly due to a rise of short-terms loan. The company did not have the liquidity risk because of the well preparation of sufficient liquidity for the operations.

At the end of 2016, net debt to equity ratio was 0.75 times, slightly increasing 0.09 times from 2015 due to the higher of short-term and long-terms loan while the operating performance results improved. The company could make the payment on due date and comply with all of the Financial Covenant.

### 2017 Business Outlook

#### 1. Petroleum Business

In the beginning of 2017, the crude oil supply glut of around 1 million barrels per day pressed down its prices. Energy Information Administration (EIA) estimated the market equilibrium of crude oil in 2017. In the meeting in November 2016, OPEC members agreed to cut the production of 1.2 million barrels per day and the Non-OPEC members agreed to cut the production of 0.6 million barrels per day in the first half of 2017. The demand was expected to increase for 1.2 million barrels per day. Then, the market equilibrium occurs and the crude oil prices rebound. Nonetheless, if any of OPEC members increases their production, the crude oil prices become volatile

and the market equilibrium will be postponed. The Company estimated the Dubai crude price of US dollar 45-55 per barrel in 2017.

#### 2. Petrochemical Business

Petrochemical business tends to grow following the global economic situation recovery. However, China which is the world's major plastic importer might face the economic growth slowdown. Besides, its self-reliance policy might reduce its plastic import. For the supply side, China might increase its Olefin production: Coal to Olefin (CTO), Methanol to Olefin (MTO) and Propane Dehydrogenation (PDH). However, the producers in the Middle East and the US have the advantage of lower cost by using the natural gas as feedstock and tend to increase their productions as well. For Styrenic products, the market situation in 2017 improves constantly and stay in a good direction. The crude of prices of around USD 45-55per barrel stimulate the consumption at the high level. Moreover, the maintenance shutdown is on the process for the producers in Asia. For the supply side, the addition supply of Styrenic products in 2017 increases a bit because their production expansion is limited. For the demand side, the growth is subsequent to the growth in consumer products such as automobile and electrical appliances. The global economic situation and the recovery of economic growth in AEC also stimulate the demand.

The Company estimated the better spread in 2017 for petroleum products when compared with that in 2016. The excess supply decreases and the crude oil prices at this low level stimulate the oil demand. The market GRM will be around USD 4.3-5.3 per barrel. On the contrary, due to the supply increase as mentioned earlier, the spread for petrochemical products will be worsen when compared with what it was in 2016. The market P2F will be around USD 4.5-6.0 per barrel. The estimated do not include the benefits from UHV Project, PPE & PPC Project and Everest Project.

# CORPORATE RESPONSIBILITY

Corporate Social Responsibility (CSR)

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Social Enterprise

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Quality, Safety, Occupational Health and  
Environmental Management (QSHE)

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Sustainable Management

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Milestones

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Appendix

Corporate Governance Report of  
Thai Listed Companies (CGR) 2016

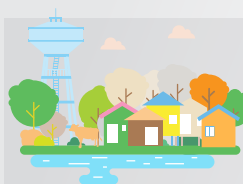
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Compliance with Corporate Social  
Responsibility

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# CORPORATE SOCIAL RESPONSIBILITY (CSR)

IRPC conducts business based on corporate governance under the UN Global Compact which concentrate on the honesty and transparency coupling with responsibility for society, environment and human rights. Approach is to accomplish 17 principles of the world Sustainable Development Goals. The Company believes that organization which is determined to create innovations for sustainability and run business operation adhering to responsibility, can only ascend to the leadership in the future.



## Lam Sai Yong Model

To emphasize our strong determination toward sustainable development, IRPC implements the water management in IRPC Industrial Zone by following the Recycle, Reuse and Reduce principles, what allows to reduce the water consumption up to 1,007,400 cubic meters per year. IRPC also carries out the project to mitigate drought crisis in Northeastern region under 'Lam Sai Yong Model'.



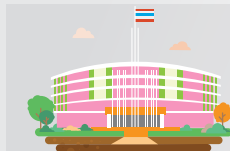
## Plastics Donation for Prostheses Foundation

IRPC takes part in Mobile Prostheses Foundation Unit and donates plastic grains - an innovative product from IRPC, in contribution to prostheses production for the Prostheses Foundation of H.R.H. The Princess Mother. The Company have been supporting for 6 consecutive years, giving total 115 tons of plastic grain, with objective to leverage quality of life of the disabled people, and to enable them to work and live life happily within their societies.



## Promotion of Culture

IRPC liaised with Fine Arts Office 3 of Phra Nakhon Si Ayutthaya on the renovation of the 300-year-ruined temple Wat Khrua Ta Phet, with aim to open a historic learning center for Thai history, and to promote Aranyik Community, a village of Thai-Mon ethic. The Company also joined hand with the Thai-Mon resident in the communities surrounding IRPC Oil Depot Prapradaeng, arranged IRPC Mon Prapradaeng Festival' as to conserve culture and tradition of the Mon, a minor ethnic group in Thailand.



## Social Enterprise

IRPC takes part as a committee member, in collaboration with the Civil Public to improve occupational quality, create skilled labor and build the pride among local communities, by establishing IRPCT Technology College, a local college for Rayong residents at the beginning. The College is envisioned to become a leading in ASEAN in 2025, and become a major force in driving national economy by the power of vocational students, and the innovations that will bring the quality products and services.



## Investment in Innovative Product for Quality of Life and Environment

With awareness on environmental impact, the Company has conducted researches and developed products that meet the customer's need, based on our attentive to the environment and consumer safety (aiming to create a better life quality) with our products are such as Green ABS, Natural color, Wood plastic composite, Anti-bacteria agent etc.



## Reduction of Greenhouse Gas

One of our success of participatory energy conservation is to reduce the power consumption up to 1.7GJ in 2016, by following Energy Management System. Moreover, with our carbon reduction labeled products, IRPC can reduce the greenhouse gas emission up to 28,953 ton of carbon dioxide.



## 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

## SUSTAINABLE DEVELOPMENT GOALS



### IRPC Cubic Academy

Aiming to create the society of learning, IRPC thus establishes IRPC Cubic Academy, providing six training courses for students consist of employee and interested participants. The project is designed specially to create quality personnel, organization with corporate governance and the knowledge element that supports sustainable development.



### Health Promotion Funds for the Communities Surrounding IRPC

IRPC wishes to grow together with Rayong communities. To make better life quality and well-being, we have established Health Promotion Fund for the communities located surrounding the IRPC Industrial Zone. The monetary fund of 5 million THB per year is contributed to mobile clinic project, Pan Nam Jai Clinic, which provides health care by putting importance on prevention of sickness.



### Promoting Women's Rights

IRPC joined hand with the Business and Professional Women's Association of Thailand, provide 50 courses of occupational training to woman inmates at Thanya Buri Women Correctional Institution for Drug Addicted Prisoners, Pathumthani province. The project is intended to develop professional and academic skills, as well as mentality state helping to create positive learning among them and to enable the self-reliance after being discharged.



### Anti-Corruption

IRPC announces its intention in 'Transparent Thailand' event as to express the strong determination on anti-corruption, to promote cooperation between government and private sectors. The Company also becomes a member in Private Sector Collective Action Coalition Against Corruption (CAC). Moreover, the Company implements IRPC Anti-Corruption Network to the entire supply chains as well.



### Conservation of Natural Resources and Environment

IRPC attended 'Natural Resource and Environment Conservation with participation from private sector. The project arranged by Ministry of Natural Resource and Environment. The project contains various activities such as Herbal Project, Return the Wild Plants to the forest at Poolangka National Park, conservation of Economic Plants in Buriram.



### IRPC Eco-industrial zone

IRPC is committed to become the eco-industrial zone under the 5 years development and strategic plan between years 2013 - 2017. The scheme is projected to be a template for development in Rayong province.

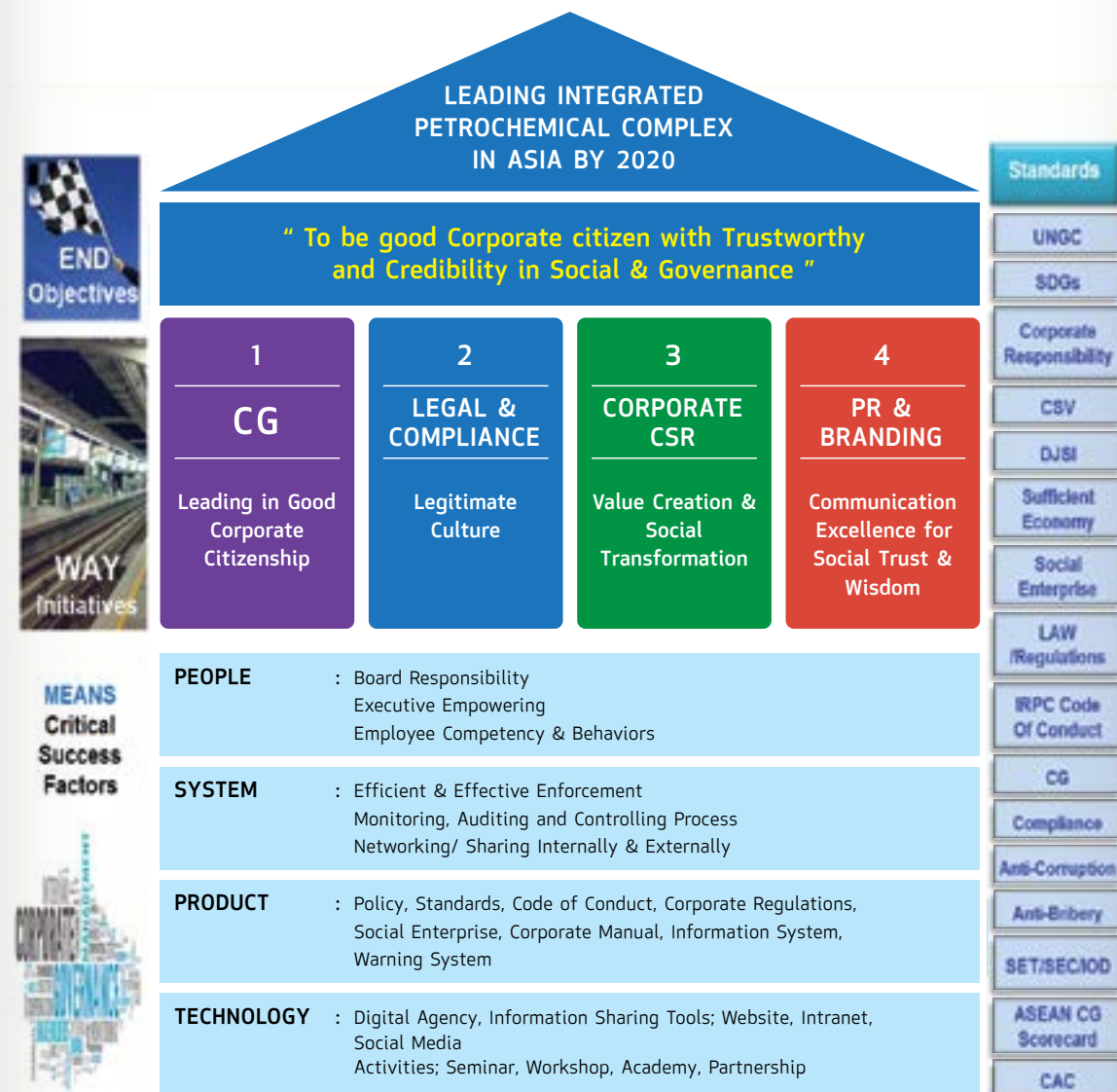




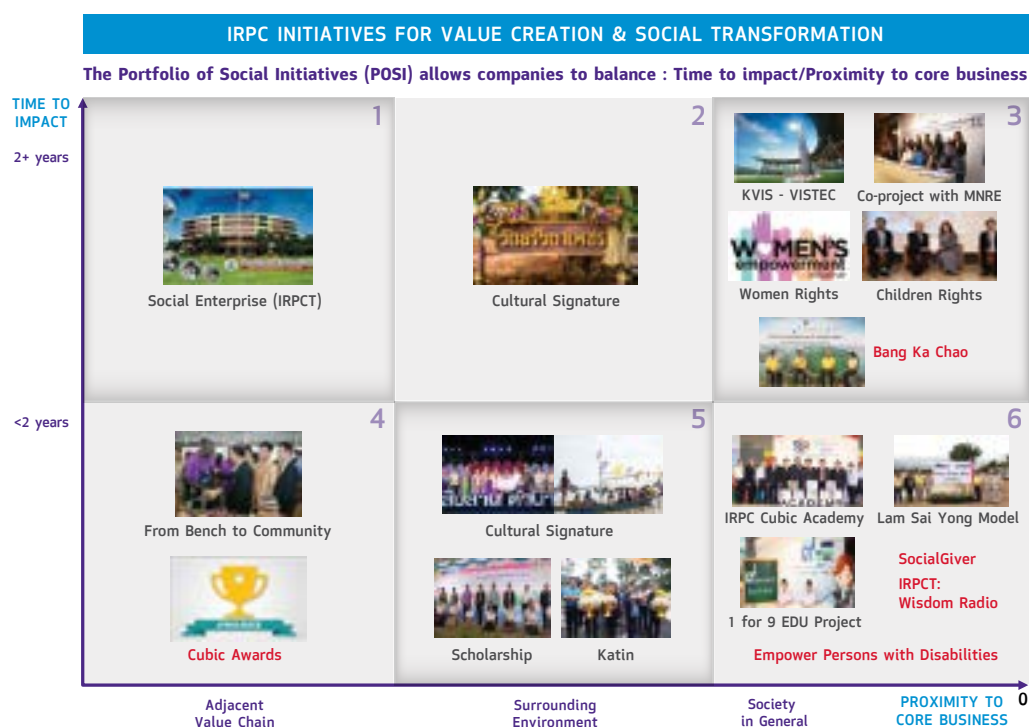
## CORPORATE SOCIAL RESPONSIBILITY (CSR)

The Board of Directors has formulated and revised corporate strategic plan for a short (1 year) and long-term (5 years) (2017-2020), in regard to our corporate social responsibility. According to the revision in 2016, the plan is still considered to be included in the excellence of good corporate governance and corporate social responsibility (CG& CSR Excellence) to maintain our sustainable growth from 2015. IRPC aims to be a good citizen of the world that will build confidence and reliance in good corporate governance and corporate social responsibility for stakeholders.

### CG & CSR EXCELLENCE







## Work strategy on Corporate Social Responsibility-the commitment to maximize sustainable benefits.

- 1. Determine of criterias in selection CSR** projects according to a world class consultant. It is the best practice (in line with standards) to create the balance between impacts to society, community and company and the period of project implementation that could support such impact, yet, maintain the maximum benefit for the budget and for stakeholders, create confidence among stakeholders, as shown in the example of project selection criteria in the table above.
- 2. Determine objectives for CSR** projects in order to create added value and to create positive changes to societies and communities (Value Creation & Social transformation). Details of major CSR projects of year 2016 are in page 186-196.
- 3. Conduct corporate risk assessment for CSR** project. The result showed that the risks didn't reach significant level.
- 4. Set CSR** as a part of sustainable growth, in corporate strategy and integrate the practice of responsibility which consist fair treatment to stakeholders, and relate to all disciplines of our business strategies.
- 5. Pass on the knowledge, understanding and encourage the participation in concepts/activities** including application of good practice guideline of social responsibility among employees and stakeholders on regular basis. IRPC announced the new Regulations of IRPC PLC and subsidiaries on procurement which became effective on 1 January 2016. The texts illustrate clear message on taking care of society and environment with responsibility in all supply chains as follows.

### Social and environmental responsibility

To comply to our Social and Environmental Responsibility as announced, and that may be additionally amended in the future, in conducting business together, an employee shall;

- Contact and liaise between vendors and Research and Development Unit and/or Operation Unit of the Company and/or Office of the Quality, Safety and Environment on regular basis, about product or service properties; follow up the assessment result of social and environmental impact; undertake actions in order to acquire the said product and service sustainably.

- Contact the vendor that keep commercial ethics, aware of social and environmental society regularly; avoid a vendor that conducts business without good code of conduct. For example, deploying forced labor, mismanagement of working conditions, fail to recognize rights of employees, corrupt the auction by conspiring with other vendors to alternatively win the bid and share the revenue together. Conduct a non-transparent business, disclose trading secret of the Company, dump the price to unfairly win the bid, intimidate other vendors, commit to corruption etc.
- Inform vendors or trading partners for cooperation in taking social and environmental responsibility in order to accomplish the purpose of sustainable and stable business operation.

**6. Compliance to the UN Global Compact (UNGC)** initiative in 1999 to encourage businesses worldwide to adopt 10 responsible policies to their business operation in order to be classified as a Responsible Corporate Citizen. IRPC joined UNGC since 2011 and in 2016 became a co-founder of Global Compact Network Thailand (GCNT), one of over 80 networks across the globe. The aim is to apply the 10 universal principles from UNGC which cover 4 major disciplines including responsibility practice with following obligations.

### 6.1 Human Rights

**Principle 1:** Businesses should support and respect the protection of internationally proclaimed human rights; and

**Principle 2:** make sure that they are not complicit in human rights abuses.

IRPC recognizes the importance of respect to human rights and understands that corporate body should be able to protect, pay respect and make a remedy in case of violation on human right as a result of business operation. This is to be consistent to the CSR direction, where we Care, Share, Respect since 2006, especially the care we put to the communities surrounding.

IRPC Eco Industrial Zone which is considered as an important stakeholders of the Company. IRPC protect and maintain rights of employees and contractors such as compliance to labor law, provision of good working environment, promotion of appropriate welfares to employees as set forth in the Company Code of Conduct, provision of clean room for feeding mothers with refrigerators to store their breast milk, provide equal safety to employees and contractors. For example, the Company provides safe handbook during the major maintenances and requests for strict compliance.

The Company has an evaluation and remedy procedures prepared for community and environment in case those are being affected by our factory activities. For example, we provide Complaint Center open 24 hours, with assigned staff to investigate the issues and undertake respective actions without delays. We disclose information of the activity that may cause adverse impact to the communities in public domain, before, during and after work completion. For instance, when the machine in UHV project was started operating during Q2 of 2016, we enabled local residents visit it 7 times, to assure their confidence in our operation throughout 2016.

The President and senior executives recognize the importance to resolve all the complaints. After receipt of significant complaint, the Internal Audit must submit at least one investigation procedure to the President to acknowledge matter and solution. The procedures must be conducted with fairness and with protection for the whistle-blower (if any) as well.

IRPC attended the activities and seminars about promotion of women's and children's rights in 2016, and make an affirmation to promote children's right and comply to the business code of conduct prepared by Thaipat Institute and UNICEF. IRPC, in collaboration with UNFPA, prepared a project plan with aim to educate children and women belonging to the risk group or those who are vulnerable in reproductive health. In the said matter, the UN's objective is to allow all children to be borne in line with intention and readiness of a mother or family, and to be raised in safe environment. The Company attended seminars, lectures and the meeting about human

rights from the Human Rights Commission, Department of Justice, Ministry of Justice, Thailand Development Research Institute, UN Agencies, Justice Court Experts of Community and Environment Rights pursuant to new amendment of the Thai Kingdom etc. All these attendances express the true endeavor of IRPC to bring benefit for human rights, in line with standards.

## 6.2 Labor

**Principle 3:** Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.

**Principle 4:** the elimination of all forms of forced and compulsory labour.

**Principle 5:** the effective abolition of child labour; and

**Principle 6:** the elimination of discrimination in respect of employment and occupation.

At present, IRPC has 8 Labor Unions that represent the freedom to labor association and guarantee the right to collective negotiations, whereby the President is a chairperson of the employee meeting which allowed for serious discussion. In addition, the changes of important regulation and welfare of employees were also brought to the meeting for clear understanding and acceptance. The Company provides various communication channels for employees to be informed, to express their opinions, suggestions and complaints such as Intranet, Teammate Block, PO Box 35 etc. IRPC does not accept child labor, compulsory labor and refrain from discrimination in employment and occupation. The recruitment is based on the suitability of working conditions, positions and safety.

## 6.3 Environment

**Principle 7:** Businesses should support a precautionary approach to environmental challenges;

**Principle 8:** undertake initiatives to promote greater environmental responsibility; and

**Principle 9:** encourage the development and diffusion of environmentally friendly technologies.

The Company follows good practice on environmental issues, adhering to global standards and even performs more than the law stipulated, as shown in our safety, hygiene and environment report page 202-215.

## 6.4 Anti-Corruption

**Principle 10:** Businesses should work against corruption in all its forms, including extortion and bribery.

The Company has been certified as a member of Private Sector Collective Action Coalition Against Corruption (CAC) on 4 April 2514. The Board of Directors has formulated policy and code of practice of anti-corruption and no-gift policy, and anti-corruption and bribery policy to apply to the entire organization and affiliated companies, and to disseminate the knowledge and understanding to our employees through communicate channels regularly (please see details in the Good Corporate Governance page 64-67)

## 7. Compliance to the Sustainable Development Goals (SDGs)

In an addition to the selection of social activities, the project format is designed to be consistent and in response to the 17 principles of SDGs by the UN, which by IRPC has partially proceeded in 2016, as detailed in page 179 and in the Important CSR project of year 2016 in page 186-196. The goal is to achieve all principles by year 2017.

Leaders from 193 member countries of UN including Thailand passed the resolution to confirm the Sustainable Development Goals in the United Nations General Assembly (UNGA) on Friday, 25 September 2017 as agenda of the world development within the next 15 years (2016- 2030). There are 17 goals pertaining which are:



- First goal : To end the poverty in all places.
- Second goal : To end the hunger, to achieve the food security and leverage sustainable nutrition and promotion of agriculture.
- Third goal : To ensure that human race are healthy and to promote welfare among all ages.
- Forth goal : To ensure that everyone is provided with comprehensive and quality education equally, and to support lifelong learning.
- Fifth goal : To achieve the equality concept between genders and to empower women and all girls.
- Sixth goal : To ensure that the ware resource and hygienic management will be provided to everyone, with sustainable management.
- Seventh goal : To ensure that everyone will have access to modern energy at affordable price, reliable and in a long term.
- Eight goal : To support the continuous economic growth, which is comprehensive and sustainable, to provide employment which is effective and proper for everyone.
- Ninth goal : To build durable infrastructure, to promote the comprehensive and sustainable industrial development, as well as promotion of innovation.
- Tenth goal : To reduce inequality at internal and international level.
- Eleventh goal : To secure cities and human settlements with immunity and sustainability.
- Twelfth goal : To ensure the sustainable consumption and production.
- Thirteenth goal : To urgently undertake action to combat with the climate change and the impact occurred.
- Fourteenth goal : To conserve and utilize ocean and marine resources in a sustainable approach for sustainable development.
- Fifteenth goal : To protect, restore and support the sustainable use of terrestrial ecosystems, forestry management, the action to reserve the forest from turning into desert, to stop the degradation and restoration of soil and to stop the loss of biodiversity.
- Sixteenth goal : To promote peaceful society, covering sustainable development, to enable everyone to have access to justice, and to build an institution that is effective, with responsibility and comprehend all levels.
- Seventeenth goal : To strengthen the work mechanism and to restore the partnership at global scale for sustainable development.

IRPC conducts sustainability assessment based on DJSI Index - which is classed as our corporate target, whereby IRPC is certified for 3 consecutive years. Another index is the progressive in CSR, anti-corruption and the response to sustainable development target as indicated by Thaipat Institute in 2017. The assessment

result is brought forward for improvement the progress in the aforesaid three subjects, to develop the corporate sustainability effectively and in line with universal frame or standard.

**8. Our executives places the importance on corporate practice with responsibility,** as to build the confidence among stakeholders and to build positive image of the Company, and to ensure that business operation is proceeded completely in line with the Guidelines for Social Responsibility and Guidelines for CSR Report set forth by the Stock Exchange of Thailand. Our major performances in 2016 are as follows.

1. Good Corporate Governance

The Company conducts business in line with good corporate governance strictly and develop the operation continuously, as detailed in the Good Corporate Governance page 42-67.

2. Conduct Business with Integrity

IRPC has in place handbook of Good Corporate Governance and Business Ethics being published on the company website and reviewed annually. The new printout version in 2015 was provided to our staff from all levels. The handbook has been reviewed every year, The 2016 version contains Compliance Policy, No Gift Policy and Anti Corruption and Bribery Policy, as detailed in the Good Corporate Governance page 66.

3. Anti-Corruption

IRPC takes into account the serious implementation, as shown in the Good Corporate Governance Page 66.

4. Respect to Human Rights

The Company respects and supports protection of human rights in which announced in the UN Global Compact (UNGC), refrains from discrimination due to the similarity or difference of national, religion, sex, ages, education, status. Our consideration covers the respect in personal freedom and the protection of personal data what is contained in the good corporate governance handbook 'Code of Conduct' as shown in the Report of Good Corporate Governance page 62.

5. Fair Treatment to Labor

IRPC treats its workers fairly under the UN Global Compact. It provides healthy and hygienic workplaces, while regularly raising workers' competence and skills using the Individual Development Plan (IDP). The Performance Management System ensures fair, efficient performance assessment. Competitive staff welfare is also offered with welfare items. Details are shown in Good Corporate Governance page 63-64 and Human Resource page 156-160.

6. Responsibility for Consumers

IRPC strives to boost the efficiency of its distribution channels, taking into account diverse customers' behavior and demand. It aims for customers' maximum satisfaction and pays attention to the best response to the needs of all customers. Information technology has been embraced for management of the database vital to each business unit to ensure efficient responses to customers' demand. IRPC Relationship Information System (IRIS) is an example IT system used for customer relationship management in the petroleum business. Business relationship with customers serves as a database for systematic analysis of customers' needs, requests, or complaints. This includes the CRM iAsset, which was launched in 2015.

7. Social and Community Development (see details in Major Social Responsibility Project of year 2016 page 186-196).



Major Social Responsibility Projects of year 2016 is as follows;

#### Community and Environment Development



#### 1. IRPC Lam Sai Yong Model

**“Continued as a model project for private sector to assist the government to resolve drought crisis”**

IRPC has intention to conduct business based on transparency, focusing on contribution knowledge body and potential of our organization and personnel to better life quality of communities and societies. IRPC Lam Sai Yong Model was initiated in 2014, under collaboration with the Education and public welfares foundation. The project propose was to dredge up 5 water reservoirs at Nong Yang village, Sai Yong subdistrict, Nangrong district, Buriram province, to deepen the pit for another 4 meters. The project was completed in the end of the year, increasing capacity to save approximately 100,000 million cubic meters of water. Having a double capacity to store the water, more families can now utilize the resource, where they can start growing vegetables for sales which give an income 3,000 baht per year averagely.

After the completion of the first project, IRPC continued to follow the result, and happy to see that our project brings about the earnest benefit to the community. The obvious event is in 2015 while many areas in the northeast

experienced drought crisis, Nong Yang village still have water sufficient for use. For this reason, IRPC decided to carry on IRPC Lam Sai Yong Model, aiming to be a leading project to mitigate drought crisis for private companies.

In 2016 our volunteers took part in resolving the water supply system of Nong Yang village which contain high concentration of sediment, installed water turbine to stir water, making the water become transparent and clean, being standardized for consumption and use. Our volunteer also passed on knowledge to the community in maintenance and repair the water supply system to enable them to be self-reliance and independent.

In 2016 IRPC Lam Sai Yong Model brought about huge benefit to the community, based on the utilization of the existing resource to maximize the positive impact. The Company installed HDPE pipes, a company products, from Lam Sai Yong (public waterway) to convert the water during rain season to the government reservoir at Pa Don Jones forest, Nong Yang village by which the village reserved as a source of food, herbs, income and learning center for their young children.

The said water reservoir is large, with capacity to store 270,000 cubic meter of water. To wait for rainfall only, the amount of water will be little, hence, the village may loss the opportunity to utilize full benefit from the water supply.

Thus, IRPC volunteers who are specialist in civil engineer, take a survey and design the pipe lining for a distance of 1.2 km. and installed solar-powered water pump as to save the electric cost. The pump can pump water average 5 hours per day, releasing 1,350 cubic meters of water to the reservoir. During dry season, 10 communities, from previous only 3, can use the reserved water during dry season. Our volunteers also promoted the growing of 3 plants at Pa Don Jones forest, which are economic plant, plant for energy and plant for food. What more important to us is the trees are beneficial to the watershed.

With success of IRPC Lam Sai yong Model, the Company plans to initiate another project based on this model and will proceed with standard from the selection of area. In 2017 IRPC asks for cooperation with Si Sa Ket governor to select an area in Si Sa Ket province where is considered as a key success factor to implement our project. Within 2 years the project is expected to be completed, knowledge body and budget will be summarized. The project will then be regarded as a solution for drought crisis project model for private companies, and will be published for government or community as a model for further cooperation.

## 2. Ecosystem Learning and Development of Phra Samut Chedi Mangroves Forest

### "Conserve the last mangrove forest in Rayong"

IRPC in collaboration with Nakhon Rayong Municipality, Rayong River and Mangrove Forest Conversation Group, established Phra Samut Chedi Mangrove Forest Learning Center, at Ban Paknam village, Pak Nam sub-district, Mueang Nakhon Rayong, Rayong since 2013. The Company provides budget in support of construction of Viewpoint Tower, 400-meter Nature Trail and mangrove forest conservation to become a mangrove forest learning center. In 2016, at the Viewpoint Tower, IRPC arranged Love Lock Project making area for visitors to hang love locks, providing benches for sitting at the activity area nearby, having fiber glass statue for photography purpose, as well as building a bridge for more convenient walk down to take more pictures. The new facilities, contributed to promotion and development of tourism places in Rayong and carried on objective of the project in aspect of the willpower to conserve Phra Samut Chedi Mangrove Forest which is the last mangrove forest of the city of Rayong to sustainable future.



### 3. Linking Road at Sri Mahosot Ancient City

**“The shady lanscape raises awareness of Sri Mahosot Ancient City conservation-to secure the first environmental protection zone to become a national property.”**

In the ancient time, Sri Mahosot sub-district, Sri Mahapo district, Prachineburi province, dwell the communities and cities which nowadays remains only the ruins that show the conduct of ceremony and religious activity. It is estimated that the city existed over 1,200 years ago.

The Ministry of Natural Resources and Environment has proposed to list the area as environmental protection zone, pursuant to notification of the Ministry of Natural Resources and Environment subject: Determination of Environmental Protection Zoning and Measures for Sir Mahosot Ancient City, Sri Mahosot district, Prachinburi B.E. 2558. The proposal was approved by the Cabinet resolution on 16 June 2015 and became effective since 16 September 2015 for a period of 5 years. Sri Mahosot city is regarded as the first fine arts area of Thailand being announced as an environmental protection zone. Seeing the importance of conserving the ancient city, IRPC has assigned budget to support the road construction between Sri Mahosot Ancient City, the Sri Mahosot Environmental Protection Zone and adjunct area, as to improve the scenery along the road that leads to the ancient city. IRPC also joined hand with Kokpeep Local Administration Organization and Office of Natural Resources and Environmental Policy and Planning (ONEP), arranged the project to grow trees, especially, bougainvillea along the road toward the ancient city, total distance 800 meters. The aim is to increase green area, create shady environment to support cycling, promote community health and to mark another tourism location which is friendly to the community. The project was implemented on 19 August 2016 and expected that the bougainvillea will grow and create a tunnel within year 2018. In addition to environment promotion, IRPC hopes that the cool and pleasant scenery adjunct to the ancient site will influence and raise awareness of the proper conservation of the ancient site which is listed as the first environment protection zone, to become our national property forever.

### 4. Community and Environment Development Project and the Benefit provided surrounding the IRPC Industrial Zone.

**“Schools and communities surrounding IRPC Industrial Zone are growing together with us.”**

The Company focuses and places importance on the public engagement and proceed in response to benefit of the majority. IRPC constructs public facilities in the area surrounding its Industrial Zone in Rayong regularly. In 2016, IRPC projects are: installation of lights at Sai Chai Thung road, Ban Lang village, improvement of first aid room in Wat Na Ta Khwan School, Wat Na Ta Khwan sub-district, installation of lights at exercise yard, Choeng Noeng



sub-district, and tap water quality improvement at Tapong sub-district etc. Furthermore, IRPC arranged Volunteer Mind Activity to help communities surrounding IRPC Industrial Zone. For example, Thai Teen Say No to Drugs Activity at Takraothong School, Development Project at Wat Tri Mit Pradit Tharam, Cleanup Project with small fishing boat group at IRPC Beach, Elderly School Project at Nongjok Convent, Choengnoen sub-district etc. There were 585 residents and 1,402 IRPC employees attended the activities.

The Company has Power Development fund aiming to leverage life quality of community and environment quality surrounding the Industrial

Zone. The Energy Regulatory Commission is responsible for allocating the budget for each expense occurred during our continual development to ensure the money is brought back to sustainable development of community. According to our consideration on the youth, IRPC supported hydroponics vegetables among students since 2009. The project started from passing on knowledge, providing seeds, equipment and hydroponic equipment to students from different schools in the surrounding area.

Initially, our purpose to enable them to have food for lunch, enhancing nutrition while minimizing cost on food. The students could extend the growing and even sell the vegetables. So far, IRPC have passed on knowledge and supported the hydroponic vegetables to total 21 schools. The demonstration hydroponic is arranged at IRPC Community Network Learning Center to allow any interested person to study and learn the hydroponic for their further career.

### **5.Communication Project for Safety of Community and Environment**

#### **“We Know, Be There, Understand and Develop”**

IRPC established community new 7 broadcast centers in 3 sub-districts (Tapong, Banlaeng and Choennoen), which are located adjunct to IRPC Industrial Zone fence, with aim to disseminate information that could be useful, mitigating concerns among communities, passing on knowledge of occupational health and safety, and management guideline upon emergency, being a communication channels for immediate contact without delay. The broadcast towers covers 18 communities or approx. 13,800 people. IRPC hosted Open House annually to allow stakeholders to acknowledge our business operation and environmental management.

In addition, we also launched Public right to Know Project, to provide training to communities in Rayong, especially Public Health Volunteer to ensure their correct knowledge and understanding on particular topics. For example, the gas released through the flares is the gas residue during production process as a result of emergency stop. Such gas is released for safety purpose. We hosted total 5 generations of 335 people during the training in 2016.

### **6. Promotion of community enterprise**

#### **“Promotion of Model Business in Rayong for Self-Sustaining”**

The Company promotes community enterprise, enhance the knowledge and skill development through field trip for product development, seek for sale channel for community products, and encourage model groups in Rayong to strengthen their business to become self-sustaining. IRPC supports go to 94 community enterprise groups, which generated an increase of 3.9 million THB income.







## 7. Prosthesis Project

**“IRPC’s innovative great product creates opportunity for the disabled.”**

The Prosthesis Project marks the pride of IRPC that our product (plastic grains) can be used as a raw material for Prosthesis Foundation of H.R.H. The Princess Mother. IRPC donates 20-25 tons of plastic grains per year in support of production process of the prostheses for the disabled of all nations, religions to enable them a better life quality, giving chance in their career and be happy in the society as other people. We continue our support since 2011, representing 8,745 pieces of prostheses for 7,091 patients-from 115 tons of plastic grains.

In 2016 the Company started the Big Prosthesis project, under collaboration with the Prosthesis Foundation of H.R.H. The Princess Mother and Rayong Province, on occasion of celebration of the Seventieth Anniversary Celebrations of His Majesty’s Accession to the Throne and in honor of Her Majesty Queen Sirikit’s 84th birthday on 12 August 2016. The project, took place at IRPC Sport Club Complex, Rayong for 7 days, between 9-15 July



2016, aiming to help the disabled in Rayong and neighboring provinces. During the project, 220 disabled registered, total 191 prostheses produced. Those prostheses project creates 4 standard for further implementation which are

1. Arrangement of national labor standard test - assistant machine for disable level 1 by LaborDevelopment Center, Chiang Mai and Rayong. Some of disabled registered in the project,work for society. After passing the test, they can be accepted as a government officers.
2. Training course for the disabled and their relatives in topic of physical therapy coupling with maintenance of knee stump and prostheses by the Prostheses Foundation.
3. Occupational training for the disabled and their relatives by Labor Development Center,Rayong, Department of Labor Development, Ministry of Labor.
4. Invite president of the Disabled Club in Rayong to participate in the event and give opinion to Rayong province regarding problems and requirement of the disabled labor for further development.

The said project receives Asia Responsible Entrepreneurship Awards (AREA Awards) and used as a case study for the 10th International Conference on Corporate Social Responsibility 2016 hosted by Institute of Directors, India.

Furthermore, IRPC supports its employees who are engineers and electrician staff to attend the voluntary activity under IRPC Volunteer to Repair, Add, Bring Happiness with the Prostheses Foundation in other area throughout the year, to help install an equipment and devices and to produce prostheses to patients during 17-23 December 2016 at Krabi Provincial Administrative Organization. The event serves 108 patients, 113 prostheses were made which include the aesthetic and work purpose (for wearing to work in a farm or rice field).

Our next plan, IRPC will apply Ultra High Molecular Weight Polyethylene (UHMW-PE) - the strong and durable and light weight material to create knee replacement for children and components for prostheses.

## **8. Health Promotion Fund for communities surrounding IRPC Industrial Zone**

**“We manage the Fund for community with aim to promote, protect, remedy and restore the community health.”**

IRPC establishes Pan Nam Jai Clinic to provide public health service and basic medical care to villagers surrounding IRPC Industrial Zone and nearby areas. Pan Nam Jai Clinic serves patients by good team work of physicians and nurses, with convenient and safe manner without any charges for over 6 years. In 2016 the Clinic received 4,864 patients and so far, 8,306 IRPC Cards have been issued for new patients.

Under cooperation with Queen Sirikit Hospital, Department of Naval Medical, we also arranged mobile medical service to provide general medical care to communities once a month. We served total 1,081 patients in 2016.

Despite the fact that IRPC has initiated and continued health care projects for communities surrounding IRPC Industrial Zone for many years, in 2016 the Company issues a new project to meet community's need which is Health Promotion Fund for communities surrounding IRPC Industrial Zone, under management of communities, and occupational health provided by public health specialist. IRPC contributes 6 million THB to the fund every year.

The Health Promotion Fund for communities surrounding IRPC Industrial Zone brings about benefit, in terms of promotion, prevention, remedy and recover health of the villagers surrounding the IRPC Industrial Zone which include Municipality, Choengnoen, Ban Laeng, Tapong, Na Ta Khwan, Ta Khan, Nam Kok, Tab Ma sub-district, and Rayong Municipality, totalling 76 communities within a distance of 5 km.

## 9. Drinking Water for Communities

### **“Clean Water for Healthy Life”**

The Company sets up Drinking Water for Community Project, by distributing clean and standardized drinking water to the villagers surrounding IRPC Industrial Zone and Nakhon Rayong Municipality, Tapong district, Ban Laeng district and Na Ta Khwan district, on annual basis. The Company gave out 222,576 cups and 16,920 bottles of drinking water to villagers in 2016.

## 10. Youth Football IRPC

### **“Improve Your Body and Mind, Keep Away from Drugs”**

Regular exercise and sport is a process that one can improve oneself simply, but effectively. The body will be strong, free from sickness. Exercise can also create unity, discipline, understand the win-loss and forgiveness situation, strengthening the community and guiding our youth to the correct path. In 2016 IRPC joined hand with Choengnoen Municipality, hosted Youth Football IRPC, providing skilled coach to teach football techniques to the 100 youth age between 6-14 years who live in the communities surrounding IRPC Industrial Zone.

## 11. Occupation Promotion for the Disabled

### **“Generate your own income, leading to self-reliance, helping society and government”**

In 2016 the Company conducts a study on employment of the disabled, under collaboration with 2 foundations. First foundation is “The Innovation for Society” with the Drinking Water Project, open 20 positions for the disabled. Second foundation is “The Redemptorists Foundation for PWDs” with Sufficient Economy Project, opens 26 positions for the disabled. The projects are to be started in 2017. After being employed, the disabled will be able to generate income by themselves, leading to self-reliance and leverage their life quality and also their families’, and reduce the welfares from society and government. The disabled will also be proud of themselves, having convenient lifestyle, working in their own hometown and near their families. IRPC considers that such project is suitable to the disabled, rather than to have them working in the IRPC which involves petrochemical and safety of employee must be a priority.

## Education

## 12. KVIS & VISTEC Project

### **“Create excellent researcher and expert of science to become national asset.”**

IRPC PLC is one of the company in PTT Group that contribute in our youth development, of whom considered as an excellent human resource of our country for science and technology. Kamnoetvidya Science Academy (KVIS), the royal-bestowed name by HRH Prince Maha Chakri Sirindhorn carrying the meaning of ‘source of scientific knowledge’, is an upper secondary school (Mathayom 4-6 classes) intended to groom students excelling in science and mathematics. As for high education, Vidyasirimedhi Institute of Science and Technology (VISTEC), also a royal-bestowed name, meaning ‘an institute for scientific geniuses’, provides higher education, at both graduate and postgraduate levels. These two institutes were designed to raise talented students to their utmost potential. VISTEC is targeted as a ‘leading research university’, creating excellent scientists and researchers with responsibilities for their professions. The institute is tasked with promoting science and technology research to raise Thailand’s science competitiveness. KVIS and VISTEC are located on Highway No. 344, KM. 66, Payoobnai sub-district, Wangchan district, Rayong.

### 13. IRPC Cubic Academy

**“Create the organization of sharing and society of learning together with stakeholders”**



Initiated in 2015, IRPC Cubic Academy is intended for creating a learning organization and learning society with quality and ethical personnel with an emphasis on spurring social responsibility and sustainability. The students consist of employee 80% and interested participants 20%. IRPC provided training courses with no fee.

Cubic Academy developed six training courses with an emphasis on spurring business growth with sustainability. The training covers 1. corporate governance 2. social contribution 3. communication to create confidence 4. green business 5. promotion of good corporate image and 6. sustainable business

The training is structured in the form of classroom lectures, exchange of opinions, workshops, and social 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. In 2015 Cubic Academy runs 2 batches and another 2 batches in 2016.

### 14. 1 for 9 project

**“Reduce classroom, increase learning, develop education in creative way”**

IRPC has run the “1 for 9 Project” with the Office for National Education Standards and Quality Assessment (Public Organization) (ONEQSA) since 2014, considered an innovation in academic development, according to IRPC’s intention to conduct the business with social responsibility.

The project has three objectives, namely development of academic quality and standards, development of the educational system quality assurance by giving assistance to nine educational institutes in moving their quality development cycle, and application of IRPC’s competence and equipment into institute development.

Companies and schools participating in the project have jointly made 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”.

Between 2014-2015, IRPC joins the “Four U For You Club”, comprising volunteer students from Chulalongkorn University, Thammasat University, Mahidol University, and Silpakorn University, in holding an academic camp to promote mathematics, science, and English-learning among students of Prathom (primary) 4-6 classes from three schools, namely Thepsenanusorn School, Ritthikrai Suksa School, and Kalayawit School. About 900 students took part in the activity. The “Four U For You Club” also provided special tuition as part of the preparation for the national O-Net examination for 341 students of Mathayom (secondary) 6 level from four schools, namely the above-mentioned three schools and Beacon Yamsaard Ladprao School, with a focus on mathematics, science, and English with encouragement for students to develop their thinking process and analysis of questions.

In 2016, the Company arranged ‘Enhance the Genius by Making a Robot’ to student of Pratom 4-6 from Beacon House Yamsaard Lad Prao School. ‘Be Genius by Making a Robot’ is an after school club, with aim to increase time and opportunity to learners to practice, to experience the analytical thinking, to be able to work as a team

and to self-learning happily. The activity also increases learner's potential in terms of: the use of technology, basic knowledge in digital era, creative invention, skills for daily life, thinking and development of ideas in wide scope and effective communication. The activity is learned by making a robot under Raise Mechanix from Raise Genius School, where learner will be practicing to use equipment, imagination, analytical thinking and pass on their imagination in 3D form. After completion, it is expected that learner will have basic knowledge in making robot, and be able to create basic robot as well. The first semester of year 2016 - Level 1 is run for 30 students every Wednesday between 1 June - 21 September 14.20 - 15.30 hrs. The second semester of year 2016 - Level 1 is run for 30 students and Level 2 is run for 28 students from Level 1, every Wednesday between 9 November 2016 - 22 February 2017, 14.20 - 15.30 hrs.

### 15. IRPC Community Network Learning Center

**"Pass on knowledge, create activities and build relation with the communities"**

IRPC establishes and operates IRPC Community Network Learning Center at Choengnoen sub- district, Rayong since 2011, with aim to create activity and build relation with the communities and general people. Different activities are held each month, which considered to be useful for the youth and general people such as Mad Yom Madjai, fertilizer made from earthworm, self- massage for pain relief, quilting art, English club and domestic science etc.

IRPC also allows the use of meeting room for government agency and community without any charges. The Company create activity with community, allows to use the meeting room, arranges holiday activity for local youth such as Mad Yom Madjai, fertilizer from earthworm whereby in 2016, a number of 34,128 people took part.



### 16. Education Scholarship

**"Offering a better opportunity to the local youth near us"**

IRPC has carried out a scholarship program for needy students from primary to university levels since 2008. The project has been well cooperated by leaders of 89 Rayong communities in selecting students in their respective communities for the scholarships. In 2016 the education scholarship being granted on 17 November 2016, to 309 students, divided in 3 levels which are primary, secondary/vocational and higher education, with total amount of 2,100,000 THB.



### 17. Public Power to leverage vocational education

**"Develop vocational degree, develop the country"**

IRPC signs an MOU 'Competitive Workforce' with the Profession Quality Development Team (consists of personal from government and private sectors and civil society). In addition, the seminar "Vocational Education, the choice of your future, of Thailand" with purpose to enlight the vision on vocational education what can create the future to student and our nation. IRPC also signs the MOU 'Excellence Model School' the cooperation between educational institution under the 14 branches of Office of Vocational Education Commission, Ministry of Education and 14 national leading private organization, in order to drive forward the production and development of vocational educated personnel in response to the human resource demand at national level as well as the 20 years - national strategy.

## Religion and Culture

### 18. Prapradaeng Mon Festival

**“To be listed in Thai tourism calendar”**

IRPC plans to arrange culture conservation event for each local community in each oil depot. In 2016 IRPC joined hand with Thai-mon ethnic community surrounding the oil depot in Prapradaeng district, Samut Prakarn, hosted ‘IRPC Carries on Prapradaeng Mon’ at Wat Song Thmaaworrawihan Temple, at Prapradaeng district, Samut Prakarn, with aim to conserve the fine culture and tradition of the Mon community.

The event contains the culture show, which reflects the lifestyle, food, performances and local games of the Mon which has become rare upon advancements of modernity and technology. Thanks to the willpower of the Prapradaeng Mon to continue their own culture, and fully collaborated with IRPC to launch the event for the first time. The Company and the Mon expect to make the event on regular basis in order that the said event may be listed in Thailand tourism calendar.

Furthermore, the Company has built book shelves for Song Thammaworrawiharn Temple for collection and storage the book relating to Mon culture and traditions, as well as the thesis on Mon. In the future, the Company plans to collect all these knowledge materials for publishing.



### 19. Historic Learning Center Wat Khrua Ta Phet

**“An investment for community returning highest value”**

IRPC liaised with Fine Arts Office 3 of Phra Nakhon Si Ayutthaya on the renovation of the ruined temple Wat Khrua Ta Phet located on the compounds of IRPC’s Ayutthaya Oil Depot, Po-en sub-district. The renovation work is aimed to maintain the site as a national treasure. After 5 year of operation, the renovation has been completed and the sacrifice ceremony was proceeded in the end of 2015 with the location adjunct to the beauty of PA Sak river, old communities nearby called Aranyik village renowned for producing knives which is carried out until nowadays, the Company agrees to carry out the knowledge of historic site, religious site and traditional lifestyle of the local villages to young generations. IRPC’s idea transformed into building of historic center combined with the modernity of design where visitors can learn explicitly, such as the procedures of renovation of the historic site.

The learning center is consisted of culture conservation concept and appropriate internal exhibition which consistent to the local characteristic. The design is focused for modern format, convenient, allowing for local product merchants. Historic Learning Center Wat Khrua Ta Phet is projected to another tourism place of Ayudhya. As of end of 2016, the project is under the design process of learning center.

### 20. Kathin Samakkee (Religious ceremony)

**“Continue the Bhuddism to maintain community relations”**

To promote and conserve Thai culture together with communities, government and private sectors, the Company has arranged Krathin Samakkee annually in the area where our factories and oil depot are located. The locations are in Rayong, Phra Nakhon Si Ayudhya, Samut Prakarn, Chumporn and Samut Songkram. In 2016 IRPC hosted



## Development of Thai society

### 21. Rubber Cones for Traffic use

**“We help rubber farmers by utilize new use of natural rubber”**

IRPC has created an innovation what is combination of plastic grains and 35% of natural rubber or called as S - VNR (Styrene Vulcanized with Natural Rubber. The compound is formed into new type of traffic cone to stimulate the demand in natural rubber in wide ranges and to mark as a model of utilizing new use of natural rubber. In 2016 the Company delivered traffic cones to the Office of the Deputy Prime Minister for use in safety purpose and to facilitate traffic management for visitors near the parliament. Furthermore, during the shareholders' visit to the Company's operation in Rayong, IRPC and shareholders also give rubber cones to the Provincial Police Division, Rayong for use in traffic work throughout Rayong province.

### 22. sharing to changing for a better society

**“Change the society with Mirror Foundation”**

Participants of IRPC cubic Academy #3 liaised with the mirror Foundation, hosted the recreational activity, donate the necessary belongings to over 100 attendants, while some parts of the donated stuff are assorted for further donation to homeless and foster homes.

### 23. Relieve for flood victims

**“ประชาธิรัฐร่วมใจ ช่วยอุทกภัยภาคใต้”**

IRPC, liaise with PTT Group donate money in contribution to southern flood victim relieve in the event 'The Civil Public Help to the southern flood'. The donation also made through TV station MCOT, Channel 3 and the Nations Media Group, to help the flood victims and in contribution to support IRPC Southern Club and IRPC Chumporn Oil Depot Staff to make a donation of necessary goods in the affected area.

### 24. Medical support project

**“Increase research medical personnel”**

IRPC donates funds to Ramathibodi Foundation in contribution to the construction of Chakri Naruebodin Building. The building is for study purpose of research medical personnel and medical service provision.

### 25. CSR with shareholders

**“Enhance the chance to take social responsibility together with stakeholders”**

In the Annual General Meeting of Shareholders, the Company informs shareholders that the Company will donate money to the Pediatric Cardiac Surgery Foundation which has been proceeded since 2013.



### Making good for our King in remembrance of His Majesty the King Bhumibol Adulyadej

#### October 2016

- The President led over 500 staff mourning for the passing of His Majesty the King Bhumibol Adulyadej on 14 October 2016.
  - Expressing the mourn-fullness via IRPC website and Facebook on 14 October 2016.

#### November 2016

- Mourning together with the Ministry of Energy 'The power of loyalty' on 22 November 2016.
- IRPC contributes with government sector, offering food and drinks to the people who travel to pay a homage to the late His Majesty the King Bhumibol Adulyadej at Sanam Luang-five hundred kg of rice was given to the participants on 29 November-2 December 2016.
  - Publish dedication message to His Majesty via printing media and E-magazine 'I-Oon', internal journal of IRPC family.
  - Via radio media-Express mourn and our determination to apply the royal speech to corporate and social development.
    - Prepare calendar and diary for year 2017 in the theme of "Our Beloved King".
    - President talked to the entire staff to make a good things for our belated King.
    - Support Thai farmers selling rice at IRPC Rayong Petrol Station on 11 November 2016.
- Volunteer Mind serving 2500 sets of food to the people who traveling to pay homage to His Majesty King Bhumibol at the Grand Palace and facilitate crowd on 12 November 2016.
- Arrange transport cars for communities, employees. Take executives and employees to pay homage to His Majesty King Bhumibol Aduldej on 22 November 2016.
  - Offering food to 89 monks as a dedicated merit to King Bhumibol on 29 November 2016.
- Transforming staff team into 3D letters, which consist of executives, employees and students from IRPCT on 29 November 2016.
  - Beginning of photography exhibition 'I was born in the reign of king Rama IX' on 29 November 2016.

#### December 2016

- Took part in blood donation as a dedicated merit to His Majesty King Bhumibol on 1 December 2016.
  - Group ordination of 99 staff on 2 December 2016.
- President and executives attended the King Memorial 'King Bhumibol the Great' of year 2016 on 5 December 2016.
  - IRPC Volunteer renovated Thammasatit Temple and Thammasatit School on 7 December 2016.
- IRPC CUBIC ACADEMY # 4 and representatives from # 1-3 took part in voluntary activity packing 'Porpeang Rice' on 10 December 2016.
  - IRPC Volunteer participated in beach cleaning activity at Chao Talay shrine on 16 December 2016.
  - IRPC Volunteer built check damn for a village in Ban Khai district, Rayong on 17 December 2016.

## SOCIAL ENTERPRISE

The concept of sufficient economy given by His Majesty King Bhumibol Adulyadej or well known as 'Self-Reliance Approach' has become a vital role in building sustainable economy, coupled with adopting social mechanism as an essential part to push forward the economic system of the future.

Concept of Social Enterprise (SE) is conformed to sufficient economic system, while SE can also means a business that can be categorized as profitable and non-profit adhering to the social benefits as a motivation. A focus on distributing income to production unit in society, considering social responsibility, fairness, sharing and disseminating information, knowledge and wisdom among members, bringing new innovation and technologies to reduce cost of production, using production resources to achieve best value. Social Enterprise takes into account the value in individual human and value of being a part of production unit in the society, rather than amount of income one's gains.

IRPC PLC sees the importance and provides an earnest support to social enterprises, whether it is concerned budget, management or setting up target to be an excellence in universal level. To be a part of giving back to society, which will benefit our country at wide scope, as well as will support the progressive growth of our youth and Thai society in years to come. Our existing Social Enterprise is IRPCT Technological College.

In 2017 IRPC plans to support Start-Up Social enterprise by which using modern innovation and technology as a tool to reduce cost of products. While the product cost will be minimized in response to the producer's aim to help society, the profit will be a choice for buyers to make a donation to different foundations. It is projected that our IRPCT will help in developing education in communities and in national level, and the Start-up business will generate benefits to all relating parties (at least 5 parties which are seller, buyer, business owner, foundations and company), in order that it will be truly a social enterprise.

### Characteristic of Social Enterprise



1. **Social and environment aims are not to maximize** the profit: The objectives for society and environment are explicitly set in the beginning.



2. **An operational procedures that pertains financial sustainability:** A business where an income is from sales, production and/or service provision as a majority (rather than receiving from donation, funding or receipt of supporting fund) in order to reflects the opportunity to create financial sustainability.



3. **Being environmental and social friendly:** Having production process and operation that does not cause negative impact to human hygiene, society and environment in a long term.



4. **The profit are brought back to society in accordance with the target set forth:** Most of the profit from operation is brought forward to carry on business, as to achieve the goal set forth in Article 1. or to return such profit to communities and societies. The part being brought back to society should be higher than to part allocated to shareholders' dividend, except in a case where most of shareholders are a targeted group of the objectives of the social enterprise.



5. **Conduct a transparent operation,** preparing systematic business operation and disclose to the public.



### IRPC Technological College

**Aim: One hundred percent of the benefit is devoted to national education.**

IRPC Technological College (IRPCT) is a vocational institute, 99.9% owned by IRPC, established in response to Rayong people's call for an institute where skilled workers are purposely produced for the nation's industrial sector. This is because Rayong is a home to various industrial estates, where a large number of skilled workers are in high demand.

IRPCT is listed under the Commission of Vocational Education, providing Vocational Education Certificate

(PorWorChor.) and Higher Vocational Education Certificate (PorWorSor.). The college was opened on June 1, 1995 and managed by a policy support from IRPC PLC. IRPCT has a 'school-factory' curriculum especially designed to meet human resource demand of companies in Rayong. Over 7,000 students are graduated and started working in various firms.

In addition to Thai students, since 2013, the IRPCT has provided Thai and English Program curriculum with aim to leverage quality of vocational education among neighboring countries. The bilateral program admitted total 127 foreign students from AEC countries. This includes students from Myanmar - from MERIT Project



Foreign students at IRPC Technological College





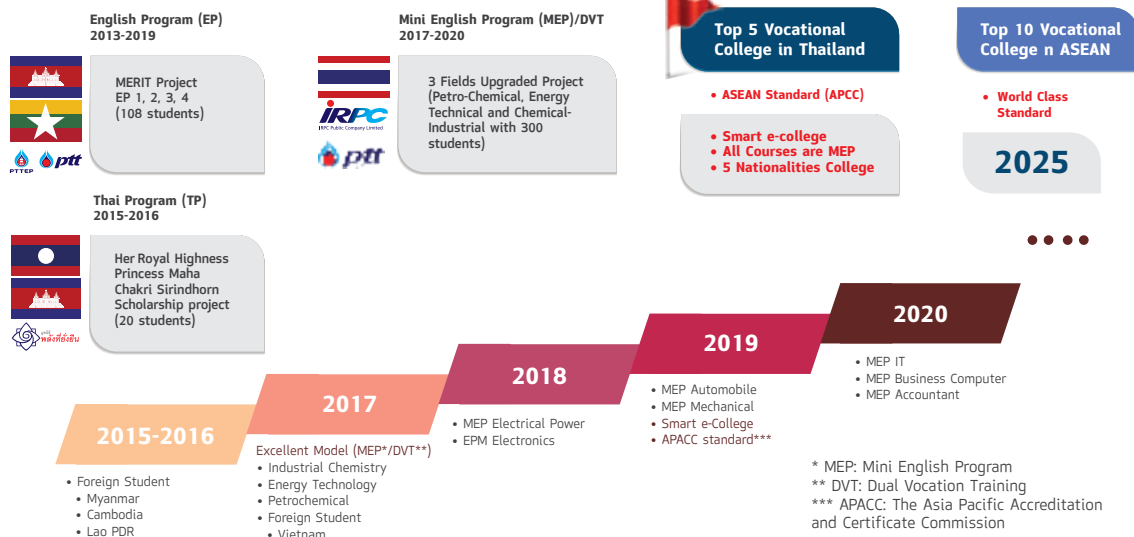
MOU signing for developing vocational student on petrochemical and energy technique

(supported by PTT PLC), students from Vocational Scholarship under patronage of HRH Princess Maha Chakri Sirindhorn (the foundation is aimed to leverage education quality among vocational teachers in Lao), and students from Cambodia and Vietnam, who will become out future student.

Having set forth a vision to become a “leading vocational college of Thailand in 2020, IRPCT has prepared a long-term road map for the next 5 years

to use as a operation guidelines among personnel. Success indicators are determined in various fields, for example, being a college where 5 nations are attending, improving educational standard to meet Asia Pacific scale, transforming all curriculums to be Mini English Program to support the establishment of AEC. In 2017, IRPCT has implemented a project to upgrade student quality from advanced vocational education-aiming on petrochemical and energy

## Road Map to be a Leading Vocational Collage



5 years strategy roadmap



technique studies. The 3 disciplines to be focused on are petrochemical, energy technique studies and industrial chemistry under the bilateral course, Mini English Program (MEP). The said project will provide education scholarship to selected candidates across Thailand, 25 scholarships for each disciplines, total 75 scholarships. According to strategic plan of IRPCT, the scholarship is provided by IRPCT, PTT PLC, PTT Global chemical PLC, Thai Oil PLC., Global Power Synergy PLC, and BCP Power Co., Ltd.. In the future, the College plans to build a comprehensive learning center for energy.

IRPCT has defined a common value 'iSMART' which is consisted of 6 characteristics 1) Individual Ownership- We are the college, the college is us 2) Synergy- Effort of unity 3) Moral and Ethics-adherence to morality and ethics 4) Ability to learn-gather all the knowledge 5) Responsibility-Be responsible together and 6) Trust and Respect-Pay respect and trust each other

Furthermore, IRPCT has opened a Technology Service Center to provide training courses that meet labor standard, and management courses such as safety of working in confined space, safety officers at work etc. The rooms provided for training courses are in line with standard, suitable for the growth of Rayong, the province in which is announced as a Special Economic Development Zone pursuant to Economic Corridor for Eastern Region Project. In 2017, the IT Service Center will be expanded, with additional facilities such as Amazon cafe, which will be situated in the front of the College. Amazon cafe will become a meeting point, serving contractors and general customers. Our service center is accounted as a meeting place to motivate integrated education, under the Economic Corridor for Eastern Region Project which was hold on 20 February 2017. The meeting was chaired by Gen. Surachet Chaiyawong, Deputy Ministry of the Education Ministry, and attended by Rayong governor, Chief executive of Rayong Provincial Administration Organization, Head of Government Authority, and a leader from private sector.



*A meeting to motivate integrated education under the Economic Corridor for Eastern Region Project*

The Commission Board of IRPCT, led by Mr. Sukrit Surabotsopon, President of IRPC PLC, as a Chairman of the Board, gave advice on management in the meeting that the aim in investment in IRPCT is a hundred percent dedication to education benefit. IRPCT is now able to generate revenue from operation as well.

Development of IRPCT as aforesaid, is consistent to the civil state policy, whereby Mr. Sukrit Surabotsopon was the assigned leader of a subcommittee titled "Quick Win Project: Database of Demand and Supply" for upgrading the quality of vocational education. The scheme emphasized on the cooperation between government, private sectors and the public as to enhance competitiveness which is considered as a goal-driven economy of our country.

For over 20 years, IRPCT carries on its devotion, effort on developing qualified human resource to society, and ready to lead our nation to Thailand 4.0 in years to come.

## QUALITY, SAFETY, OCCUPATIONAL HEALTH AND ENVIRONMENTAL MANAGEMENT (QSHE)



### IRPC has set a business direction towards sustainable development

As well as encouraging other related sectors to follow the company's sustainable roadmap effectively in order to become the leading integrated petrochemical complex in Asia by 2020.

It has integrated Quality, Occupational Health and Environmental Management system (QSHE) into day-to-day business for operational excellence and successful stakeholder engagement. IRPC's QSHE programs and activities are described below.

**Quality** IRPC has introduced, adapted, and combined the ISO System and Total Productive Maintenance and Management (TPM) into one single system (One System), with the Operational Excellence Management System (OEMS) as the core system. With One System, production efficiency increases in product quantity, quality, and service without compromising safety, environment, and stakeholders.

**Environment** IRPC recognizes the need for environmental protection and has made continuous proactive efforts to effectively utilize natural resources by improving its processes, which reinforce the use of green energy for the benefit of the environment and society. Moreover, IRPC demands pollution reduction and energy conservation through the 3Rs (Reduce, Reuse and Recycle), which in turn slashes emission of

greenhouse gases (GHG) and exemplifies IRPC as an Eco-Industry for sustainable growth and development.

**Safety and Occupational Health** Apart from complying with international safety and health standards in all areas, specifically personal safety, process safety, and transport safety, IRPC promotes safety awareness and culture through activities, including the Goal Zero program, Safety Excellent program, and Safety Network and Sharing projects. The ultimate goal is to become a safe workplace with zero incident and injury.

### QSHE Management Strategies

IRPC has been consistently revising its vision and business plans to excel in the business by focusing on the 4Ps (Process, Partners, People, and Professional), as described below.

**Process** IRPC defines control measures, audit and mitigate risks during the process, starting from planning, execution, to operation conclusion. There are consistent efforts toward preventing pollution at its sources, sustainability of renewable energy, and production processes for greener products.

IRPC has adopted the PTT Group Operational Excellence Management System (OEMS) and integrate it with the QSHE management and information technology. Thus, the efficiency and effectiveness of QSHE system are significantly improved.

**Partners** IRPC focuses on both strengthening the business and becoming the leader in QSHE management within the petrochemical and petroleum-refining industry. It has built networks in every sector, including the government and the private sectors, as well as communities to establish an EIZ (Eco-Industrial Zone), an environmental R&D center, community knowledge, and relationship-building with all sectors and agencies to improve QSHE laws and regulations.

**People** IRPC strives to forge awareness of QSHE management to all stakeholders. It starts with effective coaching for all personnel with regular engagement via Behavior-Based Safety (BBS), Safety Talk, Environment Talk and information sharing with communities regarding safety, health, environment and energy conservation.

**Professional** IRPC develops QSHE professionalism and competency by focusing on Knowledge Management System (KM) and implementing “Lessons Learned and Best Practice Sharing” among industries so that IRPC may be widely accepted as an excellent organization in QSHE.

## Summary of 2016 QSHE Achievements



Management members with a Goal Zero Accident banner to be distributed to all departments



IRPC values the QSHE management system by integrating it into day-to-day business, implementing the following programs.

## Occupational Health and Safety

### GOAL ZERO

“Goal Zero” is a program designed for the workforce to focus on their safety while working, consisting of the following:

1. The workforce must wear all appropriate safety equipment correctly before working.
2. The workforce must follow all work procedures and instructions.
3. The workforce must work on their tasks cautiously without rush or shortcut.
4. The workforce must assess all potential risks during the operation.
5. All machinery and equipment must be maintained in good conditions and ready for operation.
6. The workforce must always be attentive and mindful while at work.

### Safety Excellence

Aiming to forge safety awareness among workforce, this program is a further expansion of BBS to encourage the workforce to be aware of safety at all times and develop safety leadership and teamwork.

### Safety Network and Sharing

This network and sharing among organizations in PTT Group aims for people to learn and share safety information and good practices, including maintenance, repair, selecting and operating equipment, based on safety and operating data of each site so that quality and efficient tools may prevent accidents.

### Safety Report Guideline

In 2016, IRPC was one of the six plant operators to successfully finalize the currently-in-approval process of the Safety Report Guidelines from the Department of Industrial Works (DIW). This effort aims to develop guidelines for industries to prepare safety reports to prevent major incidents. In addition, IRPC encourages managers to improve the safety management system to prevent major incidents. The propylene plant completed the development of its manual in 2016.

IRPC was one of the six plant operators to successfully finalize the currently-in-approval process of the Safety Report Guidelines. The propylene plant completed the development of its manual.

### Safety and Occupational Health Training

IRPC continuously provides training for its workforce to review and sustain safety awareness. This is achieved by three platforms, namely classroom training, E-learning, and on-the-job training to include five major subjects: safety awareness, ergonomics, occupational lung diseases, hazardous chemical, and noise.



*Safety awareness training is one of the many subjects which are of the workforce's interest.*

### Process Safety Management (PSM) Auditor Training

With support from both the Engineering Institute of Thailand and the Thai Institute of Chemical Engineering and Applied Chemistry, PSM Auditor training was completed to provide employees with knowledge on PSM system requirements, their application and implementation of these requirements into their own respective units, and development of a new PSM internal auditor.

### Good Health Start Here Program

IRPC values its workforce and their families' wellbeing. It implemented many health programs, one of which aims to assist employees whose Body Mass Indices (BMIs) exceed the standard. It is achieved by sharing information about healthy diets, free healthy meals, more healthy meeting refreshment, and provision of a fitness center.

### Process Safety

Safety is one of IRPC's core values. Major operation incidents could result in harm to individuals, loss of assets, or environmental damage, which can affect stakeholders, employees, contractors, and even neighboring communities. IRPC looks at all aspects' safety management policy, equipment repair and maintenance, and human effectiveness to improve the operational safety and prevent potential accidents and danger.





*With personnel of Rayong Provincial officers, using a Portable VOC Detector to monitor fugitive sources*

First, IRPC strictly focuses on safety management to prevent incidents such as spills and fires. This is achieved by executing an on-going Operational Excellence Management System and Process Safety Management (PSM) in all IRPC facilities by 2016. In addition, IRPC reviews and re-evaluates safety risks of its facilities annually in accordance with TIS/OHSAS 18001. Every five years or when operational changes occur, it will also re-evaluate safety risks to meet regulatory requirements.

Second, IRPC minimize risks of operating injuries by consistently maintaining all equipment and machinery such as pressure safety valves based on risk exposure to the workforce and processes. Such equipment requires Time-Based Preventive Maintenance, and if in anyway defective, it will need to undergo First Priority for Corrective Maintenance. Each responsible business unit must not only effectively plan and manage these repair work and maintenance, but also allow for all equipment and machinery to be ready at all times and reduce unplanned shutdowns.

Finally, IRPC relentlessly develops workforce capability on machinery maintenance, understanding of machinery functions, and basic maintenance. Total Productivity Management (TPM) was implemented, and as a result, workforce could develop deeper knowledge and ownership of equipment to successfully conduct basic repair and maintenance by themselves by this year.

## Environment

### Pollutant Release and Transfer Registers (PRTR) Program

IRPC and PTT Group took part in the PRTR program, a pilot program between Thailand's DIW and Japan International Cooperation Agency (JICA) to prepare a voluntary report on the release and transfer of all waste going to the air, ground, and water in Rayong province since 2012. In 2016, IRPC shared the PRTR report with DIW and has been consistently improving chemical usage efficiency and raw material and chemical loss prevention and reduction during operations. It not only aims to reduce the release of contaminants, but also opts to use cleaner energy sources and reduce waste generated from production via the 3Rs (reduce, reuse, recycle) and applies a closed system for operation processes.



## Greenhouse Gas (GHG) Emission

In response to global climate change, IRPC takes actions to be an organization ranked in the top quartile by 2020 in energy efficiency. It determines efficient energy consumption while reducing GHG emissions. It focuses on energy management, energy conservation, and resource utilization efficiency under governmental policy. In 2016, IRPC consistently improved its products and processes by substituting fuel oil with natural gas, together with application of computer software to maximize energy efficiency so that energy utilization diminishes fuels, electricity, and steam while cutting GHG emissions.

### Protection strip

Protection Strip, a reforestation program to insert a buffer zone between IRPC facilities and the communities, was initiated in 2011 with 419,120 trees. IRPC continued this program in 2016 by planting 84 more rai (134,400 sq.m.) of 101,120 trees. At present, the total plantation occupies 732 rai (1,171,200 sq.m.) of trees covering 12.69% of the land. These trees absorbed 910 tons more of carbon dioxide produced from IRPC's processes, which amounted to 3,700 tons of carbon dioxide absorbed per year. This is an increase of 32% from last year. Besides carbon dioxide absorption, these trees provided clean air while reducing dust and noise affecting the community.



## Managing Volatile Organic Compounds (VOCs)

IRPC continuously improves its processes to reduce its impacts on the atmosphere through VOC Emission Inventory Management and VOC Fugitive Sources Control. It has developed an inventory of equipment and areas with potential fugitive release, regularly monitored by using a state-of-the-art online monitoring system, VOC cameras, and Portable VOC detectors. IRPC's air monitoring in 2016 indicated that VOCs were below the allowable standard, yet it continues reducing VOCs in the workplace by implementing the following projects plan for completion in the second quarter of 2017:

- Improve CPI Unit and Storage Tank at the EBSM Plant
- Install 22 closed-system sampling ports at the EBSM plant to reduce possible VOC emissions.
- Install a VOC recovery unit at the BTX and Ethylene Plants
- Reduce VOC emission from the C6601-BDE plant
- Install an N2 seal system at 14T002 in the Tank Farm 1 area
- Install Vapor Recovery Units (VRUs)
- Install vapor release control systems at storage tanks.

This year IRPC planted which brought the total protection strip to 732 rai or 12.69% of the total area, offsetting carbon dioxide emission by about 3,700 tons a year.



*With personnel of Rayong Provincial officers, using a Portable VOC Detector to monitor fugitive sources*

This year's VOC emission reduction totaled some 60 tons, thanks to an efficient air quality management system, VOC emission inventory preparation, and inspection for equipment leaks with advanced technology.

It is expected that IRPC's projects will result in 60 tons of VOC reduction annually.

### **Complaint Management**

Peaceful co-existence among community, the environment, and IRPC is critical. IRPC pays considerable attention to environmental impacts on communities by having their leadership and executives regularly visit and engage communities to learn and discuss concerns through Community and Society Development Multilateral Committee, IRPC Industrial Zone, Rayong and EIA/EHIA

Monitoring Committee, including community representatives, government officials, academia, and company representative. These meetings allow engagement and suggestions from all parties about IRPC's programs and activities. This activity has resulted in communities' confidence, reduction of undue impacts, and clear communication among IRPC, communities, and government agencies.

To be more engaging, IRPC invited the public, students, and government officials to its Open House sessions to observe activities inside IRPC facilities. In addition, it publicly airs environmental monitoring information through 24-hour TV displays at 11 locations (see next page). IRPC's openness and clear communication have forged good understanding and trust. As a result, IRPC assures sustainability, heightens industrial standards, and garners mutual acceptance from Rayong citizens and international communities.

To mitigate environmental impacts and reassure communities' wellbeing, IRPC reduces emissions containing sulfur dioxide ( $\text{SO}_2$ ), nitrogen dioxide ( $\text{NO}_2$ ), and Total Suspended Particulates ( $\text{TSP}_s$ ). Monitored data during 2012-2016 showed that  $\text{SO}_2$ ,  $\text{NO}_2$ , and TSP have been slashed due to the usage of greener energy and a cleaner combustion system. Moreover, TGTU project and the Combined Heat and Power (CHP) Project slash the emission of  $\text{SO}_2$ , TSP, and 920 tons of  $\text{NO}_2$  per year.

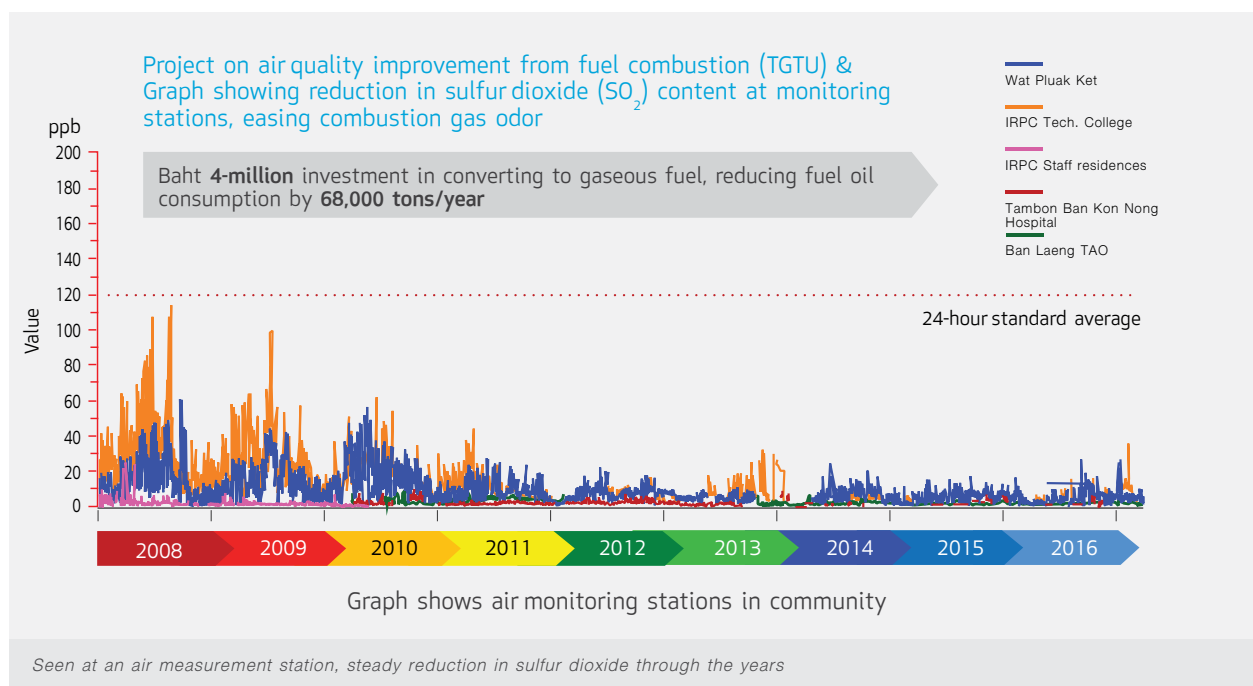


11 locations with TV display around the IRPC Industrial Zone

## Eco-Industrial Zone

Under the strategic plan to becoming an Eco-Industrial Zone (EIZ), IRPC committed to the balanced economic, social and environmental development, a significant factor to drive Thai industrial sector in compliance with the framework on the development toward Eco-Industrial Town, with due regard to balanced social development and well-being of the people with low impact to the environment and quality of life, as a sustainable

development. In 2016, IRPC has succeeded in having its another 11 plants certified Eco Factory by the Department of Industrial Works, namely Condensate Residue, Combined Gas Oil, UHMW-PE, Propylene, Acetylene Black, Compounding Plastic, Polypropylene, Water Filtering Plant Ban Khai, Benzene/Toulene/Xylene, Polystyrene and Polyol Compound. IRPC signed a memorandum of cooperation on Eco-Industrial Zone of Green Industry Equivalent of level 4 (GI 1) with the Department of Industrial Works.



Source: IRPC's Environmental Management Division

## Recognition and Awards

IRPC's relentless efforts on quality, safety, health, environment and sustainability are a crucial part of its business growth strategy. The following awards given to IRPC in 2016 are clear evidence demonstrating stakeholders' acceptance to IRPC in the enhancement of management systems to maximum potential.

### Prime Minister's Industry Award: Productivity

This is a result of collaborative efforts made by IRPC leadership and all employees to enhance the efficiency and effectiveness of the Condensate Residue Transformation Plant. On July 26, 2016, IRPC won a Prime Minister's Industry Award: Productivity from the Department of Industrial Promotion, presented by Prime Minister Prayut Chan-o-cha for effectively utilizing all resources at the plant.

### TPM Excellence Award

IRPC's Total Productive Maintenance and Management (TPM) program aims for Zero Accident, Zero Machine Breakdown, and Zero Defect in the refinery, lube base oil, distillation, and petroleum tank farm. In 2011, IRPC completed the implementation of eight core components of TPM, achieved goals and passed the assessment. This allowed IRPC to win the TPM Excellence, Category A, Award from Japan Institute of Plant Maintenance (JIPM) on March 23, 2016.

### Quality Control Circle Awards

IRPC has been promoting Quality Control Circle (QCC) for more than 20 years, implemented by the operating workforce to strive for quality improvement. A contest is designed to promote QCC activities at both national and international levels. IRPC is honored to win the following awards:



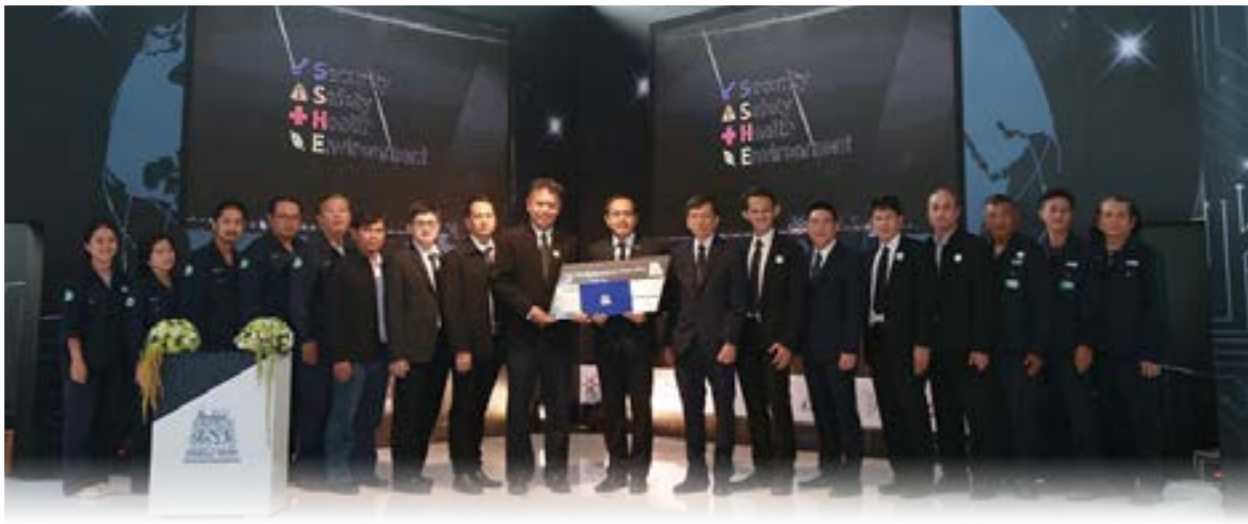
*Prime Minister's Industry Award: Productivity*



*QCC Thailand Quality Prize*

1. Diamond Award: Task Achieving QCC Prize, presented to the Olefins Plant
2. Two Golden Awards: Manufacturing QCC Prizes (2), presented to the Oil Refinery
3. Golden Award: Support QCC Prize, presented to Central Laboratory and Analysis
4. Silver Award: Junior Manufacturing QCC Prize, presented to the SAN plant
5. Silver Award: Manufacturing QCC Prize, presented to Packaging Department
6. Gold Award to the Oil Refinery by the International Quality and Productivity Convention held in Indonesia.





SSHE Awards

#### **Responsible Care Code of Management Practices Self-Assessment on Website Award**

IRPC accepted an award for active cooperation on Responsible Care Code of Management Practices Self-Assessment on Website on February 25, 2016, at The Federation of Thai Industries.

#### **2016 Outstanding Safety Officer and Model Workplace Awards**

On June 30 and July 2, 2016, IRPC accepted 2016 Outstanding Safety Officer and Best National Workplace Awards at Bangkok International Trade & Exhibition Center (BITEC), Bang Na, Bangkok.

#### **2016 Zero Accident Campaign**

IRPC was honored to accept an award for its 2016 Zero Accident Campaign on August 31, 2016, for its Ayutthaya Tank Farm, presented by Minister of Labor, General Sirichai Distakul.

#### **SSHE Awards**

IRPC received an 2016 Outstanding Safety Officer Award and an SSHE Award in PTT Group's QSHE Awards event 2016 on November 9-10, 2016, at PTT Headquarters.

#### **Eco-Factory Awards**

On October 3, 2016, IRPC received 11 Eco-Factory awards, presented by the Minister of Industry, Ms. Atchaka Sibunruang, at Bangkok International Trade & Exhibition Center (BITEC), Bang Na, Bangkok.



## SUSTAINABLE MANAGEMENT



IRPC is committed to running businesses to strike a balance among business growth, stewardship of natural resources and the environment, engagement with communities and society to produce a decent quality of life, and support of local economic, social, and environmental development. Our hope is to live a happy life with communities amid trust by all stakeholders.

The Office of Sustainability Management manages the sustainability strategies for IRPC with a scope encompassing economic, social, environmental and good governance. The IRPC Group Sustainability Management Committee develops policies, formulates sustainability strategies, reviews and comments on the Sustainability Plan for IRPC Board of Directors' approval. The Office of Sustainability Management continues monitoring, promoting, and sponsoring implementation in accordance with policies and strategies envisioning IRPC to become a "Leading Integrated Petrochemical Complex in Asia by 2020".

IRPC highly values achievement of sustainable business objectives, employing Materiality Assessment encompassing the following topics essential to IRPC and stakeholders in socio-economic and environmental aspects.

In 2016, IRPC's important factors for sustainability are as follows:

- **Occupational Health and Safety** IRPC promotes safety in all aspects of work including personal safety, process safety, and transport safety. This is achieved through the implementation of high safety standards with the goal to become an incident-free workplace ("Goal Zero") with a deep-rooted safety culture among employees and contractors.
- **Efficiency of Machinery and Processes** IRPC manages process safety to prevent major incidents and accidents, including oil and chemical spills and fires to ensure all stakeholders are safe and ensure continuity of business. IRPC adopts and implements the Operational Excellence Management System, Process Safety Management, and annual safety risk assessment in accordance with TIS/OHSAS 18001. In addition, IRPC in conjunction with PTT Group has developed safety guidelines in alignment with international safety standards.

- **Personnel Development** IRPC recognizes employee' potential and strives to continually strengthen their capability at all levels and disciplines so that they may be able to respond to new business opportunities and challenges.
- **Personnel Retention** IRPC develops and retains high-potential employees by promoting employee engagement and enhancing organizational inclusiveness through activities in the hope that employees will continue creating value and fostering growth along with it.
- **Impacts on Communities** Since they are important to sustainability, IRPC's intention is to implement projects while obtaining social license and stakeholders' trust by conducting environmental, health and social impact assessment, adhering to the community involvement guidelines.
- **Social Development** IRPC is committed to social responsibility, in particular responsibility for surrounding communities where it works. It focuses on improving the quality of life, education, health, hygiene, and conservation of the local culture. Its ultimate goal is to create values and growth in parallel with Thai society and gain acceptance and trust from stakeholders.
- **Air Emission** To minimize environmental and health impacts on communities surrounding its facilities, IRPC manages the quality of air emission. It improved process efficiency, continually implemented air emission reduction, and monitored air emission using state-of-the-art technology to ensure no complaints raised by communities.
- **Waste Management** IRPC strives to improve waste management to minimize environmental impacts with a target of "zero" waste disposal to landfill by 2020.
- **Wastewater Management** IRPC improves wastewater quality to meet or exceed regulatory standards by using an activated sludge system and ultra-filtration.
- **Climate Change** IRPC recognizes the need for responses to GHG emissions and its global-scaled impacts on climate change. IRPC manages climate change through the improvement of process efficiency, development of low-carbon products, and low-energy consumption products.
- **Water Resources** IRPC employs a proactive approach in managing water resources so that water may be utilized efficiently. It works closely with PTT Group in Rayong, where water shortage is at risk. In so doing, IRPC closely monitors the water situation and determines measures for managing water consumption so that water may be sufficiently available for production without jeopardizing social and environmental values.
- **Energy Efficiency** IRPC continually increases its energy efficiency by improving processes and internal transport. It works closely with PTT Group to improve implementation of efficiently consuming resources and minimizing impacts on the environment.
- **Risk Management** IRPC strives to align its risk management system with international best practices. This enables it to manage risks to an acceptable level to meet goals, prevent, and mitigate adverse effects, including adding value for stakeholders.
- **Customer Relationship Management (CRM)** IRPC values customers' trust in its products and services together with promotion of good customer relations so as to control any risk jeopardizing revenue and reputation.

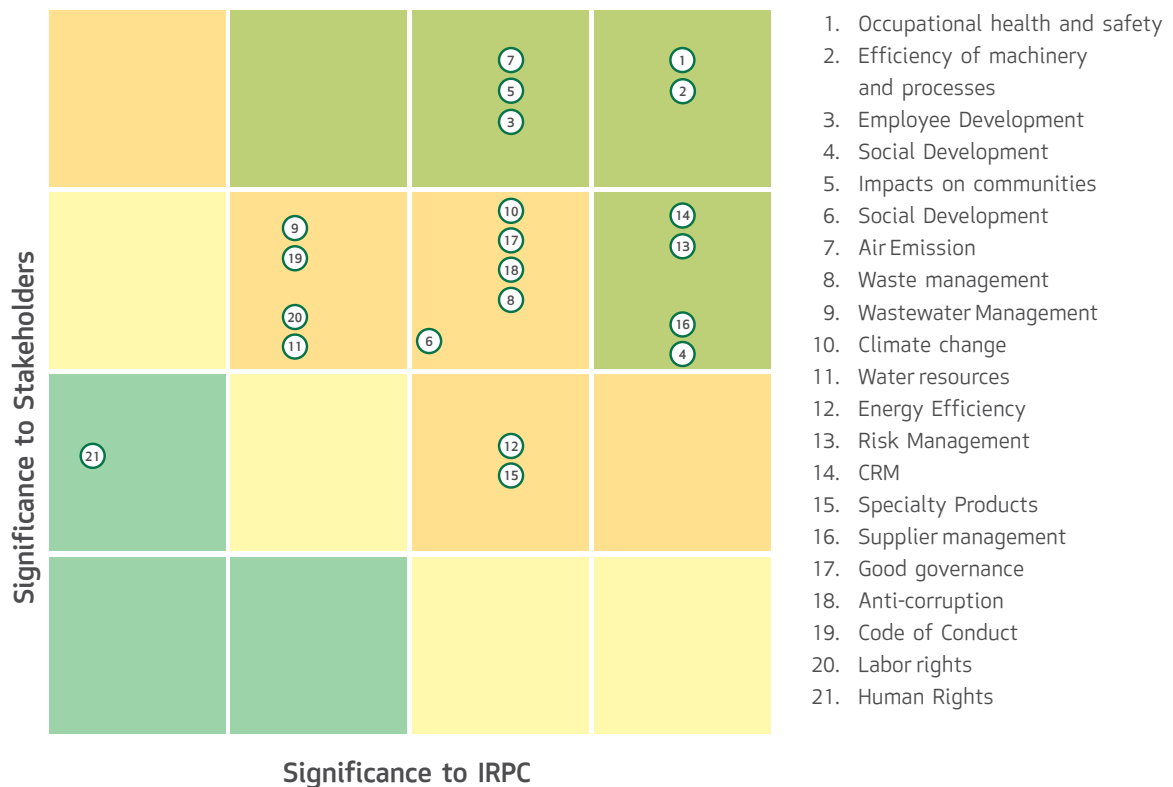
- **Innovation and Specialty Products** IRPC is committed to R&D development to satisfy customer needs. “Green” products increase business opportunities, thus responding to changing socio-economic and environmental circumstances.

- **Supplier Management** IRPC strives to transparently manage purchasing and acquisition, working with suppliers equally, correctly, and fairly. Business with suppliers aligns with the IRPC Supplier Code of Conduct, which encompasses business ethics, human rights, environment, and occupational health and safety.

- **Good Governance** In place are good governance guidelines. The Board established a good governance policy for itself, the management, and employees.

- **Anti-Corruption** IRPC cherishes anti-corruption. The organization structure has been designed to employ clear approval authority and checks-and-balances. Through the Audit-Committee, IRPC has developed and implemented guidelines to systematically prevent and transparently manage corruption and conflicts of interest as well as complaints. Systematic compliant-handling is also in place.

#### Outcome of Materiality Assessment 2016



For the third consecutive year, IRPC was a selected member of the DJSI Emerging Market, Oil and Gas Refining and Marketing Group, a proof of IRPC being among the world's leading organizations for sustainable development.

It reflects IRPC's commitment to conducting its businesses with a balance of economic, social, and environmental aspects.

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



- **Code of Conduct** Believing that business ethics brings public confidence and trust, IRPC adheres to the Code of Conduct. Achievement of business objectives transparency, auditability, and stakeholders' stewardship are all balanced, enabling sustainability.

- **Labor Rights** IRPC encourages employees to exercise their rights to establish seven labor unions. It provides training for employees and all unions regarding labor laws, regulations, and guidelines.

- **Human Rights** IRPC encourages all employees to respect human rights without prejudice in race, religion, gender, age, education, marital status, respect for personal rights, and protection of personal information.

The detail of material issues related to management of sustainability and performance was reported in the 2016 Corporate Sustainability Report.

The figure above demonstrates IRPC's approach to strategize those topics. The list of priority significance will be used to determine strategies to enhance environmental, social, and governance (ESG). It is the framework for reporting IRPC's achievement to stakeholders.

This year's Corporate Sustainability Report was prepared by applying the principles of the internationally accepted standard entitled, "Sustainability Reporting Guidelines: Oil and Gas Sector Disclosure", part 4 of the Global Reporting Initiative (GRI) core level. The Sustainability Report Awards Project, a joint cooperation among the CSR Club, Thai Listed Companies Association, SEC,



and Thaipat Institute, awarded the Outstanding Sustainability Report 2016 Award to IRPC for a fourth consecutive year.

In addition, IRPC promoted the balance between its production and the economy, society, and environment by instructing individual plants to establish and implement good eco-management systems under the Eco-Factory Framework, issued by Industrial Environment Institute, Federation of Thai Industries. This is a foundation for an Eco-Industrial Zone under the Eco-Industry development framework of the Department of Industrial Works.

This year, 11 additional IRPC plants won certification as an Eco-Factory-Condensate Residue Processing, Combined Gas Oil Processing, Ultra-High Molecular Weight HDPE, Propylene Plant, Acetylene Black, Compound Plastic, Polypropylene, Ban Khai Water Treatment Plant, Benzene-Toluene-Xylene, Polystyrene, and Polyol Compound Plants. To date, 15 plants have been certified. The target is for all IRPC plants to be certified by 2017.

IRPC pays attention to the development of employee potential and cultivate a sustainability culture throughout the company. This year, through a series of workshops, site visit discussions, and sharing ideas, the Office of Sustainable Management communicated sustainability topics to executives and targeted staff so they may integrate sustainability practices into their work. In addition, IRPC communicated sustainability to employees and external parties through training entitled “IRPC Cubic Academy”. Furthermore, IRPC developed E-Learning to forge understanding among employees. The target for completing the provision of E-learning is by 2020.

For production expansion or new projects, IRPC engaged all stakeholders to share ideas. Community satisfaction assessment was conducted annually, with feedback used for continual improvement.



## MILESTONES



01-1



02-1



02-2



03-1



03-2



03-3



04-1



05-1

## January

### 01-1

Entered into a “Memorandum of Cooperation: The Public-Private Collaboration in Enhancing Professional Quality of Vocational Education (Competitive Workforce)”, of the Public-Private Working Group in enhancing vocational education quality

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## February

### 02-1

Thailand Top Company Award 2016 (Outstanding Award), presented by the Business+ magazine

### 02-2

Golden Peacock Global Award for Corporate Social Responsibilities 2015, presented by the Institute of Directors (IOD), India

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## March

### 03-1

Signed a long-term contract worth over Baht 120 million to expand slack wax markets to the US and Europe

### 03-2

Thailand Quality Class (TQC) Award 2015, in recognition of IRPC's PP plant, which met the quality class criteria, presented by the Thailand Productivity Institute, Ministry of Industry

### 03-3

TPM Excellence Award 2015, Category A, presented by Japan Institute of Plant Maintenance (JIPM). The awards were given to organizations worldwide for their successes in implementing the Total Productive Maintenance (TPM) system

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## April

### 04-1

Participated in the launch of the **EVEREST “Together We Can”** event to announce project goals and inspire employees to be part of the driving force to their full capacity and in the same direction to achieve the goal of becoming the “Leading Integrated Petrochemical Complex in Asia by 2020”

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## May

### 05-1

Thailand ICT Excellence Award 2016 (Core Process Improvement Project) presented to Athena-Achieving Pricing Excellence Project by the Thailand Management Association (TMA) in collaboration with the National Electronics and Computer Technology Center (NECTEC), Software Park Thailand, and the College of Innovation, Thammasat University (CITU)





06-1



06-2



06-3



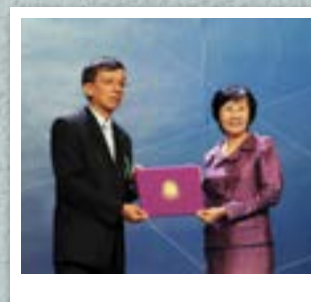
06-4



06-5



07-1



06-6



07-3



07-2



07-4

## June

### 06-1

Entered into an Auctioneer Agreement with Hilco Global Asia for the management of non-maximized (unused) machinery and equipment in an environmentally friendly manner and in compliance with laws

### 06-2

With 15 other leading organizations as co-founders of Global Compact Network Thailand (GCNT), attended a joint meeting to establish the Global Compact Network Thailand Association, designed to drive Thailand's business sector to appreciate the importance of corporate sustainability under the ten principles of the UN Global Compact in human rights, labor, environment, and national anti-corruption, and act as a bridge with the United Nations to ensure compliance with the regulations of the United Nations

### 06-3

Individual Award - Asia's Best CEO (Investor Relations) and Corporate Award - Best Investor Relations Company for three consecutive years, presented by the Corporate Governance Asia magazine.

### 06-4

Asia Responsible Entrepreneurship Award (AREA) 2016 (Social Empowerment) for IRPC's Lam Sai Yong Model: Water Management Project ("Sustainable Drought-Solving"), presented by the Enterprise Asia magazine.

### 06-5

Green Meeting Certificate in recognition of organizing "Green Meeting" to reduce the use of energy and resources for the 4<sup>th</sup> consultative year.  
Carbon Reduction Label certificate for PP: Polypropylene and PS: Polystyrene from Thailand Business Council for Sustainable Development (TBCSD)

### 06-6

- Outstanding Workplace for Safety, Occupational Health, and Work Environment Award 2016,
- National Level, presented by the Department of Labour Protection and Welfare
  - Outstanding Workplace for Safety, Occupational Health, and Work Environment Award 2016, Diamond Level, for its Chumphon Oil Depot for three consecutive years
  - Outstanding Workplace for Safety, Occupational Health, and Work Environment Award 2016, Gold Level, for Ayutthaya Oil Depot for four consecutive years
  - Outstanding Workplace for Safety, Occupational Health, and Work Environment Award 2016, Gold Level, for Phra Pradaeng and Mae Klong Oil Depots for three consecutive years
- 

## July

### 07-1

July 16 marked the Commercial Operation Date (COD) of the Upstream Project for Hygiene and Value Added Products (UHV)

### 07-2

IRPC in collaboration with the Prostheses Foundation under the Patronage of HRH the Princess Mother and Rayong Province organized a mobile unit project for prosthetic legs for over 220 amputees in Rayong and its vicinity to honor the 70th Anniversary Celebration of HM the late King's Accession to the Throne, and HM Queen Sirikit's 7<sup>th</sup> Cycle Birthday Anniversary on August 12

### 07-3

The Best CEO at the "IAA Awards for Listed Companies 2015/2016", Resources Industry, by the Investment Analysts Association (IAA)

### 07-4

Two awards from The Prime Minister's Industry Awards 2016 for the Condensate Residue Plant (ADU1 and NTU) for productivity improvement and the BTX plant for energy management





08-2



08-3



09-2



09-3



09-4



09-5



10-1



10-2



## August

### 08-1

All businesses of Thai ABS Co., Ltd., 99.99%-owned by IRPC, were transferred to IRPC for efficient internal management restructuring as well as operating cost reduction

### 08-2

A Plaque of Honor for a pilot workplace under the “best-practice guideline project for green supply chains of target export industries”

### 08-3

Ayutthaya and Phra Pradaeng Oil Depots won Plaques of Honor for Zero Occupational Accidents Campaign, Bronze Level, for four consecutive years, presented by the Department of Labour Protection and Welfare

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## September

### 09-1

Retained the membership of DJSI: Emerging Markets, Oil and Gas Refining & Marketing Group, for three consecutive years

### 09-2

Joined the Public-Private Collaboration Working Group in enhancing the professional quality of vocational education

### 09-3

IRPC and IRPC Technological College, Rayong, participated in the Anti-Corruption Day 2016, and reiterated IRPC's business conduct with professionalism, transparency, due regard for good governance, corporate governance, and social responsibility

### 09-4

Received a Certificate of Carbon Footprint for Organization: CFO from the Thailand Greenhouse Gas Management Organization (Public Organization)

### 09-5

Entered into a Krungsri e-Payment Service Agreement for the purchase of petroleum products via the IRON system by which its customers can make their payment

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## October

### 10-1

IRPC's 11 plants won “ECO Factory” awards from the Industrial Environment Institute, The Federation of Thai Industries

### 10-2

Golden Peacock Global Award for Excellence in Corporate Governance 2016, from the Institute of Directors (IOD), India



12-1



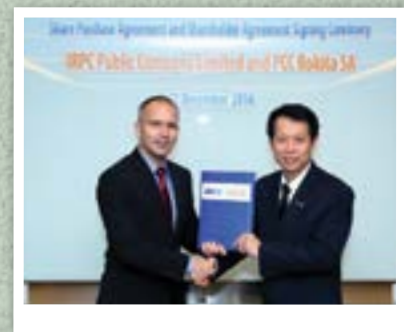
12-2



12-3



12-4



12-5



12-6



12-7



12-9



12-10



12-11

## December

### 12-1

Entered into a memorandum of cooperation in “Advanced Vocational Education in Petrochemical and Energy (iPEC)” with IRPC Technological College and PTT Group, namely PTT Plc, Thai Oil Plc, IRPC Plc, PTTGC Plc and Global Power Synergy Plc to upgrade IRPC Technological College’s capability

### 12-2

EIT-CSR Award 2016, Plaque of Excellence, in IRPC’s campaign to promote CSR activities among state agencies, presented by The Engineering Institute of Thailand under HM the late King’s Patronage (EIT)

### 12-3

Entered into a work contract for Spent Caustic Treatment Unit for RDCC Plant with Plus Exploration Co., Ltd.

### 12-4

Outstanding Sustainability Report Award 2016, presented by the Stock Exchange of Thailand (SET)

### 12-5

Entered into a Share Purchase Agreement and Shareholders’ Agreement with PCC Rokita SA (PCCR) to divest 25% of its total paid-up capital worth Baht 80 million in IRPC Polyol Co., Ltd., a 99.99%-owned unit of IRPC, to PCC Rokita SA, Poland

### 12-6

Signed a memorandum of cooperation in the “Excellent Model School” program, a Public-Private Collaboration in enhancing vocational education in Thailand among 46 schools under the Office of the Vocational Education Commission, Ministry of Education, and 14 leading private organizations

### 12-7

Honorable Mention in NACC Integrity Awards 2016 in recognition of IRPC’s integrity, ethics, and honesty, from the Office of the National Anti-Corruption Commission

### 12-8

Entered into a one-year Inter-Company Borrowing & Lending Agreement with PTT Plc to efficiently manage financial liquidity

### 12-9

SET Sustainability Awards 2016 from the Stock Exchange of Thailand.

### 12-10

Thailand Sustainability Investment (THSI) from the Stock Exchange of Thailand as IRPC is one of the companies that is listed as sustainable stock for the second consecutive year.

### 12-11

Best Investor Relation Awards from the Stock Exchange of Thailand.



# CORPORATE GOVERNANCE REPORT OF THAI LISTED COMPANIES (CGR) 2016

No.	Rules and Guidelines	Information Sources
Rights of Shareholders		
A.1	Does the company offer other ownership rights beyond voting? <b>IRPC: Yes, the rights to propose agenda items in advance of the meeting date, nominate directors, appointor dismiss directors, consider directors' and auditor's remuneration, consider allocation of profit/dividend payment, rights to gain sufficient, timely, and complete access to information, rights to express opinions.</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 44</li> </ul>
A.2	Is the decision on all forms of director remuneration approved by the shareholders annually? <b>IRPC: Yes (the Board considers remuneration on all forms consisting of salary, meeting allowance, bonus, and submits it to the shareholders for approval)</b>	<ul style="list-style-type: none"> <li>Minutes of the AGM specify that                             <ul style="list-style-type: none"> <li>● No other reward/benefit</li> <li>○ Other reward/benefit (Please specify .....)</li> <li>● Minutes of the 2016 AGM pages 19-22</li> </ul> </li> </ul>
A.3	Is IRPC's remuneration of the board presented to the shareholders? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>○ Specify only the remuneration of the Board</li> <li>● place are a policy and description of the method of remuneration of the director for each position such as salary, and/or meeting allowance per attendance, and/or bonus by <u>specifying the remuneration per position</u></li> <li>● Notice of the 2016 AGM pages 6-7</li> <li>● Minutes of the 2016 AGM pages 19-22</li> </ul>
A.4	Does the company allow shareholders to elect directors individually? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Specify the result of the election of board members individually</li> <li>○ Specify the result of the election of the board</li> <li>● Minutes of the 2016 AGM pages 17-19</li> </ul>
A.5	Does the company disclose that it has appointed an independent party (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>● Neutral vote counter ○ Other Specify.....</li> <li>● Minutes of the 2016 AGM page 2</li> </ul>
A.6	Are any opportunities provided to shareholders to propose agenda items, or submit questions before the AGM? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Right to propose agenda items before the AGM</li> <li>● Right to submit questions about the Company before the AGM</li> <li>● SET Website <a href="http://www.set.or.th/set/newsdetailsdo?newsId=14742422249221&amp;language=th&amp;country=TH">http://www.set.or.th/set/newsdetailsdo?newsId=14742422249221&amp;language=th&amp;country=TH</a></li> <li>● Company Website <a href="http://irpc.listedcompany.com/newsroom/250920150813190066T.pdf">http://irpc.listedcompany.com/newsroom/250920150813190066T.pdf</a></li> </ul>
A.7	Does the company publicly disclose a policy to encourage the company's shareholders, including institutional investors, to attend the AGM? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 48</li> <li>● Company Website <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>
Quality of the AGM notice		
A.8	Does the company set clear agenda items? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Notification of the resolutions of the Board of Directors on the SET Website</li> <li>● Notice of the 2016 AGM pages 1-11</li> </ul>
A.9	Appointment of directors, providing their names and backgrounds. <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 1. Name-Surname</li> <li>● 2. Age</li> <li>● 3. Education/Experience</li> <li>● 4. Numbers of board positions in listed and non-listed companies-showing them <u>separately</u></li> <li>● 5. Criteria and procedure of nomination of directors</li> <li>● 6. Types of proposed directorship such as directors or independent directors</li> </ul>

No.	Rules and Guidelines	Information Sources
		<ul style="list-style-type: none"> <li>7. Meeting attendance in the past year (<i>only former director nominated for re-election</i>)</li> <li>8. Date of appointment as the Company's director (<i>only former director nominated for re-election</i>)</li> <li>Notice of the 2016 AGM pages 3-6 /17-26</li> </ul>
A.10	Appointment of the external auditor, providing (1) their name (s), (2) profile, (3) fees <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>Auditor's name and affiliated company</li> <li>Auditor's experience, ability, and independence</li> <li>Auditor's fee</li> <li>Notice of the 2016 AGM pages 7-9</li> </ul>
A.11	Dividend payment including the (1) policy and explanation and (2) dividend amount <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>Dividend payment policy</li> <li>Dividend payment <input type="radio"/> Omission of dividend payment</li> <li>Reason and information for consideration</li> <li><input type="radio"/> Accumulated loss</li> <li>Amount of proposed dividend</li> <li>Others. Specify (Reason/limitation of entitlement to claim tax credit or not)</li> <li>Notice of the 2016 AGM pages 2-3</li> </ul>
A.12	Objective and reason for each item on the shareholders' meeting agenda <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>Notice of the 2016 AGM pages 2-11</li> </ul>
A.13	Director's comments and opinion for each agenda item <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>Notice of the 2016 AGM pages 2-11</li> </ul>
Quality of the minutes of the AGM		
A.14	Voting method and vote counting system <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>Explanation of voting and vote counting to shareholders before the start of the meeting</li> <li>Use of voting ballots</li> <li>Minutes of the 2016 AGM page 3</li> </ul>
A.15	Do the AGM minutes record that there was an opportunity for shareholders to ask questions/raise issues? Also, is there record of questions and answers? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li><input type="radio"/> Opportunity for shareholders to raise questions but no question was raised by shareholders</li> <li>Record of questions-answers</li> <li>Minutes of the 2016 AGM pages 10-27</li> </ul>
A.16	Meeting resolution with voting results for each agenda item, including both "for" and "against" vote tallies <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>Clear record of the meeting resolutions</li> <li>Record of voting with "approved", "disapproved", "abstained", and "void ballots" on all agenda items</li> <li>Minutes of the 2016 AGM pages 15-25</li> </ul>
A.17	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 2016 AGM page 1</li> </ul>
A.18	Does the company make publicly available by the next working day the results of the votes taken during the most recent AGM for all resolutions? <b>IRPC: Disclosure on the meeting date</b>	<ul style="list-style-type: none"> <li><a href="http://www.set.or.th/set/newsdetails.do?newsId=14594672130071&amp;language=th&amp;country=TH">http://www.set.or.th/set/newsdetails.do?newsId=14594672130071&amp;language=th&amp;country=TH</a></li> <li><a href="http://irpc.listedcompany.com/newsroom/010420161814250285T.pdf">http://irpc.listedcompany.com/newsroom/010420161814250285T.pdf</a></li> </ul>
A.19	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 2016 AGM page 1</li> </ul>
A.20	Did the CEO/President/Managing Director attend the AGM? <b>IRPC: Yes (Mr. Sukrit Surabotsopon)</b>	<ul style="list-style-type: none"> <li>Minutes of the 2016 AGM page 1</li> </ul>
A.21	Did the Chairman of the Audit Committee attend the AGM? <b>IRPC: Yes (Mr. Cherdpong Siriwit)</b>	<ul style="list-style-type: none"> <li>Minutes of the 2016 AGM page 1</li> </ul>



No.	Rules and Guidelines	Information Sources
A.22	Did the Chairman of the Compensation/Remuneration Committee attend the AGM? <b>IRPC: Yes (Mr. Woothisarn Tanchai)</b>	● notes of the 2016 AGM page 1
A.23	Did the Chairman of the Nomination Committee attend the AGM? <b>IRPC: Yes (Mr. Woothisarn Tanchai)</b>	● Minutes of the 2016 AGM page 1
A.24	Did the company organize the most recent AGM in an easy to reach location? <b>IRPC: Yes</b>	● Notice of the 2016 Annual General Meeting of Shareholders pages 15-16 ● Minutes of the 2016 AGM page 4
Does the company have anti-takeover defenses?		
A.25	Is cross shareholding apparent? <b>IRPC: No</b>	● 2016 Annual Report page 105
A.26	Is pyramid holding apparent? <b>IRPC: No</b>	● 2016 Annual Report page 105
A.27	Do Board members hold more than 25% of the outstanding shares? (Bonus) <b>IRPC: No</b>	● 2016 Annual Report page 48 ● 56-1 Form
A.28	What is the proportion of outstanding shares that are considered "free float"? <b>IRPC: 51.90 (as of 24 February 2016)</b>	Proportion of free float as of 2017 XM Book Closing ● Over or equal to 40% ○ Between 15% - 39% ○ Less than 15 % ● SET Website <a href="http://www.set.or.th/set/companyholder.do?symbol=IRPC&amp;ssoPageId=6&amp;language=th&amp;country=TH">http://www.set.or.th/set/companyholder.do?symbol=IRPC&amp;ssoPageId=6&amp;language=th&amp;country=TH</a>
A.29	Were there <u>additional AGM/EGM agenda</u> item (s) that were not included in the notice to call the meeting? (Penalty) <b>IRPC: No additional items apart from those specified in the notice</b>	○ Additional agenda item in the AGM/Extraordinary General Meeting of Shareholders ● No additional agenda item in the AGM/Extraordinary General Meeting of Shareholders ● Notice of the 2016 AGM pages 1-11 consisted of 8 agenda items as follows: 1) 2 agenda items for acknowledgement 2) 5 agenda items for consideration 3) 1 agenda item for consideration of other matters (if any) ● Minutes of the 2016 AGM pages 1-27
A.30	Did the company fail or neglect to offer equal treatment for share <u>repurchases</u> to all shareholders? (Penalty) <b>IRPC : No, there was no share repurchasing</b>	
A.31	Is there evidence of <u>barriers</u> that prevent shareholders from <u>communicating</u> or consulting with other shareholders? (Penalty) <b>IRPC: No</b>	
A.32	Did the company fail to disclose the existence of shareholders agreement? (Penalty) <b>IRPC: No</b>	
Equitable Treatment of Shareholders		
B.1	Does the company offer one-share, one-vote? <b>IRPC: Yes</b>	● 2016 Annual Report page 48 ● Articles of Association Article 34

No.	Rules and Guidelines	Information Sources
B.2	Where the company has <u>more than one class of shares</u> , does the company publicize <u>the voting rights attached to each class of shares</u> ? <b>IRPC: No</b>	<input checked="" type="radio"/> Only ordinary share <input type="radio"/> Other class of share Specify..... <input checked="" type="radio"/> 2016 Annual Report page 48
B.3	Does the company have any mechanism to allow minority shareholders to influence board composition? <b>IRPC: Yes</b>	<input checked="" type="radio"/> Mechanism for shareholders to nominate directors in advance <input type="radio"/> Cumulative Voting <input checked="" type="radio"/> SET Website <a href="http://www.set.or.th/set/newsdetails.do?newsId=14431382045561&amp;language=th&amp;country=TH">http://www.set.or.th/set/newsdetails.do?newsId=14431382045561&amp;language=th&amp;country=TH</a> <input checked="" type="radio"/> Company Website <a href="http://irpc.listedcompany.com/newsroom/250920150813190066T.pdf">http://irpc.listedcompany.com/newsroom/250920150813190066T.pdf</a>
B.4	Has the company established a system to prevent the use of material inside information and inform all employees, management, and board members of this system? <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 37 <input checked="" type="radio"/> 56-1 Form <input checked="" type="radio"/> Corporate Governance Handbook page 72
B.5	Does the company provide a rationale/explanation for related-party transactions (RPTs) affecting the corporation BEFORE conducting related-party transactions that require shareholders' approval? <b>IRPC: Yes</b>	
B.6	Does the company disclose that RPTs are conducted in such a way to ensure that they are <u>fair and at arms'</u> length? <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 127-130 <input checked="" type="radio"/> 56-1 Form
B.7	Assess the level of business interconnections which may lead to possible conflicts of interest (tunneling) through an economic grouping, that is under the influence of the controlling shareholders. <b>IRPC : The Company and its affiliates and PTT group do business in the same category so there are some connected transactions between the Company and PTT group which is normal business operations.</b>	<input checked="" type="radio"/> 2016 Annual Report page 127-130
B.8	Does the company facilitate voting by proxy? <b>IRPC: Yes</b>	What kind of Proxy Forms did the Company send to the shareholders? <input checked="" type="radio"/> Form A <input checked="" type="radio"/> Form B <input type="radio"/> Form C <input type="radio"/> Did not send any <input checked="" type="radio"/> Notice of the 2016 AGM pages 34-41
B.9	Does the notice to shareholders specify the documents required to give proxy? <b>IRPC: Yes</b>	<input checked="" type="radio"/> Notice of the 2016 AGM pages 13-14
B.10	Is there any requirement for a proxy appointment to be notarized? <b>IRPC: No</b>	<input checked="" type="radio"/> Notice of the 2016 AGM pages 13-14
B.11	How many days in advance did the company send out the notice of general shareholder meetings? <b>IRPC: 21 days</b>	Sent out by post on <b>11 March 2016</b> AGM date <b>1 April 2016</b> Notice sent out in advance <b>21 days</b>
B.12	Did the company post the notice to call the shareholders' meeting at least 30 days in advance on its website? <b>IRPC: 30 days</b>	<input checked="" type="radio"/> SET Website <a href="http://www.set.or.th/set/newsdetailsdo?newsId=14567838602781&amp;language=th&amp;country=TH">http://www.set.or.th/set/newsdetailsdo?newsId=14567838602781&amp;language=th&amp;country=TH</a> Date posted on the Company's website <b>1 March 2016</b> AGM date <b>1 April 2016</b> Dissemination on website in advance <b>30 days</b>
B.13	Does the company use cumulative voting in the election of board members? (Bonus) <b>IRPC: No</b>	<input checked="" type="radio"/> One-share one-vote <input type="radio"/> Cumulative Voting <input checked="" type="radio"/> Minutes of the 2016 AGM page 3

No.	Rules and Guidelines	Information Sources
B.14	Did the company also send out the English translation of the notice to all shareholders meetings to foreign shareholders? (Bonus) <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Notice of the 2016 AGM (Please attach the English translation, which must also be downloadable from the Company's website)</li> <li>● Company Website (in Thai) <a href="http://irpc.listedcompany.comnewsroom/010320161809390811T.pdf">http://irpc.listedcompany.comnewsroom/010320161809390811T.pdf</a> (in English) <a href="http://irpc.listedcompany.comnewsroom/010320161809390811T.pdf">http://irpc.listedcompany.comnewsroom/010320161809390811T.pdf</a></li> </ul>
B.15	Were there any related-party transactions that can be classified as financial assistance to non-subsidiary companies? (Penalty) <b>IRPC: No</b>	
B.16	Have there been any cases of insider trading involving company directors and/or management in the past year? (Penalty) <b>IRPC: No</b>	
B.17	Has there been any non-compliance case regarding related-party transaction in the past year? (Penalty) <b>IRPC: No violation</b>	
B.18	Has there been any non-compliance case regarding the buy and sale of company's asset? (Penalty) <b>IRPC: No violation</b>	
B.19	Does the company have a policy requiring directors and key officers to notify the board or its delegate at least one day before they deal in the company shares? (Bonus) <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Corporate Governance Handbook page 77</li> <li>● Code of Business Conduct page 15</li> <li>● 2016 Annual Report page 55</li> <li>● Company Website <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>
Role of Stakeholders		
C.1	Does the company have a separate corporate responsibility report/section or a sustainability report/section? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Preparation of CSR Report</li> <li>● Preparation of CSR Report in compliance with the GRI Framework by disclosing the GRI Index</li> <li>● 56-1 Form</li> <li>● 2016 Annual Report page 55</li> <li>● 2016 Sustainability Report page 60</li> </ul>
C.2	Does the company have a policy pertaining to the workplace safety and sanitation? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● The Company has a policy and guidelines pertaining to the workplace safety</li> <li>○ Disclosure of statistics on accident leave/illness from workplace</li> <li>● 2016 Annual Report page 202</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 81.</li> <li>● Code of Business Conduct page 7</li> <li>● Sustainability Report page 35</li> <li>● Company Website <a href="http://www.irpc.co.th/th/goodgovernance.php">http://www.irpc.co.th/th/goodgovernance.php</a></li> </ul>
C.3	Does the company have a policy for the employee's compensation and welfare benefits? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 53, 156</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 61</li> <li>● Code of Business Conduct page หน้า 4</li> <li>● Sustainability Report page 42</li> <li>● Company Website <a href="http://www.irpc.co.th/th/cg_stakeholders.php">http://www.irpc.co.th/th/cg_stakeholders.php</a></li> </ul>

No.	Rules and Guidelines	Information Sources
C.4	Does the company provide a provident fund for its employees? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 53</li> </ul>
C.5	Does the company have a policy and guidelines for the employee development program to enhance their knowledge and potential? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● The company has a policy and guidelines for the employee development program</li> <li>● Disclosure of the average training hours per employee per year</li> <li>● 2016 Annual Report page 52, 157-158</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 69</li> <li>● Code of Business Conduct page 4</li> <li>● Sustainability Report page 42</li> </ul>
C.6	Does the company have a policy preventing human rights violations? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 62-63</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 67</li> <li>● Code of Business Conduct page 4</li> <li>● Sustainability Report page 28</li> <li>● Company Website <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>
C.7	Does the company have a policy for the treatment of the customers? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 50</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 59</li> <li>● Code of Business Conduct page 24</li> <li>● Sustainability Report page 53</li> <li>● Company Website <a href="http://www.irpc.co.th/th/cg_stakeholders.php">http://www.irpc.co.th/th/cg_stakeholders.php</a></li> </ul>
C.8	Does the company have a policy for the treatment of the business competitors? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 51</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 60</li> <li>● Code of Business Conduct page 27</li> <li>● Sustainability Report page 90</li> <li>● Company Website <a href="http://www.irpc.co.th/th/cg_stakeholders.php">http://www.irpc.co.th/th/cg_stakeholders.php</a></li> </ul>
C.9	Does the company have a policy for the treatment of the business partners/trading partners? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● The company has a policy for the treatment of business partners</li> <li>● Disclosure of the detailed process of selecting the Company's business partners</li> <li>● 2016 Annual Report page 50</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 60</li> <li>● Code of Business Conduct page 27</li> <li>● Sustainability Report page 50</li> <li>● Company Website <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>
C.10	Does the company have a policy for the treatment of the creditors? <b>RPC: Yes</b>	<ul style="list-style-type: none"> <li>● The Company has a policy for the treatment of creditors with the following specifications:</li> <li>○ Collateral stewardship ○ management</li> <li>● In case the contractual obligations cannot be met</li> <li>● 2016 Annual Report page 51</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 60</li> <li>● Code of Business Conduct page 27</li> <li>● Sustainability Report page 90</li> <li>● Company Website <a href="http://www.irpc.co.th/th/cg_stakeholders.php">http://www.irpc.co.th/th/cg_stakeholders.php</a></li> </ul>



No.	Rules and Guidelines	Information Sources
C.11	Does the company have a policy preventing violations of the software copyright and intellectual property? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 53</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 79</li> <li>● Code of Business Conduct page 21</li> <li>● Sustainability Report page 28</li> <li>● Company Website <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>
C.12	Does the company have a policy against corruption and a preventive measure for commercial bribery? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 64-67</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 36-46</li> <li>● Code of Business Conduct page หน้า 9</li> <li>● Sustainability Report page 26</li> <li>● Company Website <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>
C.13	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>● 2016 Annual Report page 64</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 36-46</li> <li>● Code of Business Conduct page 9</li> <li>● Sustainability Report page 26</li> <li>● Company Website <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>
C.14	Does the company put in place an <u>internal compliance and control program to prevent</u> and monitor a corruption risk? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 64</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 36-46</li> <li>● Code of Business Conduct page 9</li> <li>● Sustainability Report page 26</li> <li>● Company Website <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>
C.15	Does the company have the <u>procedures to monitor</u> and enforce the anti-corruption policy? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 64</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 36-46</li> <li>● Code of Business Conduct page 9</li> <li>● Sustainability Report page 26</li> <li>● Company Website <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>
C.16	Have the company been <u>educating</u> its employees on the anti-corruption policy and procedures? <b>IRPC: Yes (Employees have been trained in the related field and attended to training courses under IOD)</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 64</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 36-46</li> <li>● Code of Business Conduct page 4</li> <li>● Sustainability Report page 26</li> <li>● Company Website <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>
C.17	Does the company have a policy for the community services? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 54</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 62</li> <li>● Code of Business Conduct page 7</li> <li>● Sustainability Report page 48</li> <li>● Company Website <a href="http://www.irpc.co.th/th/sustainable.php">http://www.irpc.co.th/th/sustainable.php</a></li> </ul>

No.	Rules and Guidelines	Information Sources
C.18	Does the company organize social activities or take part in the community development program? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 54</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 62</li> <li>● Code of Business Conduct page 7</li> <li>● Sustainability Report page 59</li> <li>● Company Website <a href="http://www.irpc.co.th/th/sustainable.php">http://www.irpc.co.th/th/sustainable.php</a></li> </ul>
C.19	Does the company have a business operations policy conforming to environmental standards? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● ISO14000, 14001 ○ Green Label</li> <li>○ Others.....</li> <li>● 2016 Annual Report page 55</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 81</li> <li>● Code of Business Conduct page 7</li> <li>● Sustainability Report page 68</li> <li>● Company Website <a href="http://www.irpc.co.th/th/sustainable.php">http://www.irpc.co.th/th/sustainable.php</a></li> </ul>
C.20	Does the company encourage the utilization of its resources efficiently? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 67</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 83</li> <li>● Code of Business Conduct page 7</li> <li>● Sustainability Report page 76</li> <li>● Company Website <a href="http://www.irpc.co.th/th/cg_control.php">http://www.irpc.co.th/th/cg_control.php</a></li> </ul>
C.21	Does the company have a training program to educate its employees about the environmental issues? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 203</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 69</li> <li>● Code of Business Conduct page 7</li> <li>● Sustainability Report page 68</li> <li>● Company Website <a href="http://www.irpc.co.th/th/sustainable.php">http://www.irpc.co.th/th/sustainable.php</a></li> </ul>
C.22	Does the company provide <u>channel</u> for stakeholders to communicate <u>any concerns to the board</u> ? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 67</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 45</li> <li>● Code of Business Conduct page 18</li> <li>● Sustainability Report page 26</li> <li>● Company Website <a href="http://www.irpc.co.th/th/pdf/library/09Corporate%20Governance_th.pdf">http://www.irpc.co.th/th/pdf/library/09Corporate%20Governance_th.pdf</a></li> </ul>
C.23	Does the company have <u>procedures for complaints</u> by employees concerning illegal (including corruption) and unethical behavior? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 67</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 45</li> <li>● Code of Business Conduct page</li> <li>● Sustainability Report page 26</li> <li>● Company Website <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>
C.24	Does the company have a policy or procedures to <u>protect an employee/person who reveals illegal/unethical</u> behavior from retaliation? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 67</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 46</li> <li>● Sustainability Report page 26</li> <li>● Company Website <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>

No.	Rules and Guidelines	Information Sources
C.25	Does the company provide contact details via the company's website or annual report which stakeholders (e.g. customers, suppliers, general public etc.) can use to voice their concerns and/or complaints for possible <u>violation of their rights</u> ? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 67</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 45</li> <li>● Code of Business Conduct</li> <li>● Sustainability Report page 26</li> <li>● Company Website <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>
C.26	Does the company have a reward/compensation policy that accounts for the performance of the company beyond short-term financial measures? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>○ Balanced Scorecard ○ ESOP ○ EJIP</li> <li>○ Others. Please specify...</li> <li>● 2016 Annual Report page 53</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 70</li> <li>● Code of Business Conduct Page 4</li> <li>● Sustainability Report page 45</li> <li>● Company Website <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>
C.27	Have there been any violations of any laws pertaining to labor/employment/consumer/insolvency/commercial/competition or environmental issues? (Penalty) <b>IRPC: No</b>	
C.28	Has the company faced any sanctions by the regulators for failure to make an announcement within the requisite time period for material events? (Penalty) <b>IRPC: No</b>	
C.29	Does the company prepare an integrated report? (Bonus) <b>IRPC: Yes (2015 and 2016)</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 56</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>
Disclosure and Transparency		
Does the company have a transparent ownership structure?		
D.1	Breakdown of the shareholding structure <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 100, 105</li> <li>● 56-1 Form</li> <li>● SET Website <a href="http://www.set.or.th/set/companyholderdo?symbol=IRPC&amp;ssoPageld=6&amp;language=th&amp;country=TH">http://www.set.or.th/set/companyholderdo?symbol=IRPC&amp;ssoPageld=6&amp;language=th&amp;country=TH</a></li> </ul>
D.2	Is it easy to identify beneficial ownership? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 100, 105</li> <li>● 56-1 Form</li> <li>● SET Website <a href="http://www.set.or.th/set/companyholderdo?symbol=IRPC&amp;ssoPageld=6&amp;language=th&amp;country=TH">http://www.set.or.th/set/companyholderdo?symbol=IRPC&amp;ssoPageld=6&amp;language=th&amp;country=TH</a></li> </ul>
D.3	Does the company disclose the direct and indirect (deemed) shareholdings of directors? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>○ The Company discloses only direct shareholding or not separating between direct and indirect shareholding</li> <li>● The Company discloses shareholding by separating between direct and indirect shareholding</li> <li>● 2016 Annual Report page 95-96</li> <li>● 56-1 Form</li> </ul>
D.4	Does the company disclose the direct and indirect (deemed) shareholdings of senior management? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>○ The Company discloses only direct shareholding or not separating between direct and indirect shareholding</li> <li>● The Company discloses shareholding by separating between direct and indirect shareholding</li> <li>● 2016 Annual Report page 97-98</li> <li>● 56-1 Form</li> </ul>

No.	Rules and Guidelines	Information Sources
Please assess the quality of the annual report, in particular, the following (5) – (21)		
D.5	Does the annual report contain a statement confirming the company's full compliance with the code of corporate governance and where there is noncompliance, identify and explain reasons for each such issue? <b>IRPC: Yes</b>	<input checked="" type="radio"/> Full compliance with SET's code of corporate governance <input type="radio"/> Disclosure of noncompliance with SET's code of corporate governance and explain the reasons <input checked="" type="radio"/> 2016 Annual Report page 42-68
D.6	Corporate Objective <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 8
D.7	Financial performance <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 136-153
D.8	Non-financial performance indicators <b>IRPC: Yes</b>	<input type="radio"/> Percentage of market share <input type="radio"/> Percentage of customers' satisfaction <input checked="" type="radio"/> 2016 Annual Report page 116-126
D.9	Business operations and competitive position <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 106-125
D.10	Corporate group structure (N/A for a company that does not belong to a corporate grouping) <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 105
D.11	Key Risks <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 37-38
D.12	Dividend policy <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 62, 100
D.13	Details of whistle-blowing policy <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 67
D.14	Board member background <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 12-21 <input checked="" type="radio"/> Name-Surname <input checked="" type="radio"/> Age <input checked="" type="radio"/> Position <input checked="" type="radio"/> Education <input checked="" type="radio"/> Experience <input checked="" type="radio"/> Shareholding <input checked="" type="radio"/> Date (day/month/year) of appointment as director <input checked="" type="radio"/> Numbers of board positions in listed and non-listed companies – showing them separately
D.15	Identification of independent directors <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 10-11, 73
D.16	Basis of the board remuneration <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 90
D.17	Basis of the key executives remuneration <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 91
D.18	Disclosure of individual directors' remuneration <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 91
D.19	Number of board of directors meetings held during the year <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 83
D.20	Board meeting attendance of individual directors <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 83
D.21	Training and continuing education programs attended by each director in the last year <b>IRPC: Yes</b>	<input type="radio"/> No director attended training and continuing education programs in the past year <input checked="" type="radio"/> Disclosure of training and continuing education programs attended by all directors in the past year <input checked="" type="radio"/> 2016 Annual Report page 12-21, 60

No.	Rules and Guidelines	Information Sources
D.22	Does the company fully disclose details of the related-party transactions in the public communication? <b>IRPC: Yes</b>	● 2016 Annual Report page 127-130
D.23	Does the company have a specific policy requiring directors to report their shareholding and transactions of company shares to the board of directors? <b>IRPC: Yes</b>	● 2016 Annual Report page 48 ● 56-1 Form ● Corporate Governance Handbook page 77 ● Code of Business Conduct page 12
D.24	Does the company <u>disclose trading in the company's shares</u> by insiders? <b>IRPC: Yes</b>	● 2016 Annual Report page 48
D.25	Does the company have a policy requiring directors to report possible conflicts of interest? <b>IRPC: Yes</b>	● 2016 Annual Report page 48 ● 56-1 Form ● Corporate Governance Handbook page 27 ● Code of Business Conduct page 12
D.26	Does the company disclose its policy covering the review and approval of <u>material/significant RPTs by the board of directors</u> or Audit Committee? <b>IRPC: Yes</b>	● 2016 Annual Report page 48,127-130 ● 56-1 Form ● Corporate Governance Handbook page 27 ● Code of Business Conduct page 12
D.27	Does the company perform an annual audit using independent and reputable auditors? <b>IRPC: Yes</b>	● 2016 Annual Report page 62 PricewaterhouseCooper ABS., Ltd.
D.28	Are <u>audit fees</u> disclosed in the annual report? <b>IRPC: Yes</b>	● 2016 Annual Report page 62 Audit fee : 4,130,000 Baht (Four million one hundred and thirty thousand Baht)
D.29	Are the <u>non-audit fees</u> disclosed in the annual report? <b>IRPC: Yes</b>	● 2016 Annual Report page 62 Non-Audit fee : 2,305,300 Baht (Two million three hundred and five thousand three hundred Baht)
D.30	Are there any accounting qualifications in the audited financial statements apart from the qualification on uncertainty of economic situation? <b>IRPC: NO</b>	
D.31	Is the annual report released within 120 days from the financial year end? <b>IRPC: Yes</b>	Released date of the 2016 Annual Report : 3 March 2017 ● SET Website ● Company Website
Does the company offer multiple channels of access to information? Multiple channels include (32) – (36):		
D.32	Annual Report <b>IRPC: Yes</b>	● 2016 Annual Report
D.33	Quarterly reports <b>IRPC: Yes</b>	● SET Website <a href="http://www.set.or.th/set/companyprofile.do?symbol=IRPC&amp;ssoPagelD=4&amp;language=th&amp;country=TH">http://www.set.or.th/set/companyprofile.do?symbol=IRPC&amp;ssoPagelD=4&amp;language=th&amp;country=TH</a> ● Company Website <a href="http://www.irpc.co.th/th/ir_home_th.php">http://www.irpc.co.th/th/ir_home_th.php</a>
D.34	Company website <b>IRPC: Yes</b>	● Company Website <a href="http://www.irpc.co.th/th/index.php?intro=1">http://www.irpc.co.th/th/index.php?intro=1</a>
D.35	Analyst briefing (s) / Opportunity Day <b>IRPC: Yes</b>	● Analyst briefing day 4 times ● Opportunity Day 5 times ● 2016 Annual Report page 56 ● 56-1 Form ● Company Website <a href="http://www.irpc.co.th/th/ir_home_th.php">http://www.irpc.co.th/th/ir_home_th.php</a>



No.	Rules and Guidelines	Information Sources
D.36	Press conference (s) / press briefing (s) <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Press conference on the Company 's turnover 4 times</li> <li>● Newsletter on the Company's turnover 4 issues</li> <li>● 2016 Annual Report page 56</li> <li>● Company Website <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>
D.37	Was the financial report disclosed in a timely manner during the past year? <b>IRPC: No</b>	
Does the company have a <u>website</u> disclosing up-to-date information? Information on (38) – (50):		
D.38	Business operations <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website <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>
D.39	Financial statements <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website <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>
D.40	Press Releases <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website <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>
D.41	Shareholding structure <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company <a href="http://www.irpc.co.th/th/cg_shareholder.php">http://www.irpc.co.th/th/cg_shareholder.php</a></li> </ul>
D.42	Organization structure <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website <a href="http://www.irpc.co.th/th/about_organiz.php">http://www.irpc.co.th/th/about_organiz.php</a></li> </ul>
D.43	Corporate group structure (N/A for a company that does not belong to a corporate grouping) <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website <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>
D.44	Information on the board of directors and management <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website Board of director: <a href="http://www.irpc.co.th/th/about_board.php">http://www.irpc.co.th/th/about_board.php</a> Executive: <a href="http://www.irpc.co.th/th/about_management.php">http://www.irpc.co.th/th/about_management.php</a></li> </ul>
D.45	Information on the investor relations <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website <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>
D.46	Company's constitution (company's bylaws, memorandum and articles of association) <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website <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>
D.47	Downloadable annual report <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website <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>
D.48	Downloadable notice to call the AGM <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website <a href="http://irpc.listedcompany.com/newsroom/010320161809390811T.pdf">http://irpc.listedcompany.com/newsroom/010320161809390811T.pdf</a></li> </ul>
D.49	Downloadable minutes of the AGM <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website <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>
D.50	Website both in Thai and in English <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Company Website <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>
D.51	Does the company provide contact details for a specific Investor Relations person or unit that is easily accessible to outside investors <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Set up the Investor Relations unit</li> <li>○ Appointment of person responsible for Investor Relations Communication channels ● Tel ● Email ● Fax. ○ Others. Specify.....</li> <li>● 2016 Annual Report page 56</li> <li>● 56-1 Form</li> <li>● Company Website <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.	Rules and Guidelines	Information Sources
D.52	Was there any record of sanctions by the SEC requiring the company to revise its financial statements during the past year? (Penalty) <b>IRPC: No</b>	
D.53	Does the company disclose the details of the CEO compensation? (Bonus) <b>IRPC: Yes</b>	● 2016 Annual Report page 92
Board Responsibilities		
E.1	Does the board of directors have the company's own written corporate governance rules that clearly describe its value system and board responsibilities? <b>IRPC: Yes</b>	● 2016 Annual Report page 43-44 ● 56-1 Form ● Corporate Governance Handbook page 7 ● Company Website <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>
E.2	Does the board of directors <u>provide</u> a code of ethics or code of conduct and <u>disclosed all details</u> ? <b>IRPC: Yes</b>	● 2016 Annual Report page 43-44 ● 56-1 Form page.... ● Corporate Governance Handbook page 48 ● Code of Business Conduct page 2 ● Company Website <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>
E.3	Does the company disclose that all directors, senior management and employees are required to <u>comply</u> with the code? <b>IRPC: Yes</b>	● 2016 Annual Report page 43-44 ● 56-1 Form ● Corporate Governance Handbook page 48 ● Code of Business Conduct page 3 ● Company Website <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>
E.4	Does the company disclose how it <u>implements</u> and <u>monitors compliance</u> with the code of ethics or conduct? <b>IRPC: Yes</b>	● 2016 Annual Report page 43-44 ● 56-1 Form ● Corporate Governance Handbook page 48 ● Code of Business Conduct page 2 ● Company Website <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>
E.5	Does the board of directors have a corporate vision /mission? <b>IRPC: Yes</b>	● 2016 Annual Report page 76 ● 56-1 Form ● Company Website <a href="http://www.irpc.co.th/th/about_vision.php">http://www.irpc.co.th/th/about_vision.php</a>
E.6	Has the board of directors reviewed the vision, mission, and strategy in the last financial year? <b>IRPC: Yes</b>	● 2016 Annual Report page 76 ● 56-1 Form
E.7	Does the board of directors monitor the implementation of the corporate strategy? <b>IRPC: Yes</b>	● 2016 Annual Report page 76 ● 56-1 Form ● Corporate Governance Handbook page 20
E.8	Does the board of directors state a policy that limits five board seats in publicly-listed companies that a director can hold? <b>IRPC: Yes</b>	● 2016 Annual Report page 73 ● 56-1 Form ● Corporate Governance Handbook page 18
E.9	Does the board of directors state a policy that limits three board seats in publicly-listed companies that a director can hold? (Bonus) <b>IRPC: Yes Board of directors set a policy that limit to five board seats in publicly-listed companies</b>	● 2016 Annual Report page 73 ● Corporate Governance Handbook page 18
E.10	Does the board of directors state a policy that addresses the board positions in other firms held by the company's CEO/ President/Managing Director? <b>IRPC: Yes</b>	● 2016 Annual Report page 84 ● 56-1 Form ● Corporate Governance Handbook page 21

No.	Rules and Guidelines	Information Sources
E.11	Does the board of directors have a term limit of <u>nine years or less for independent directors</u> ? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 73</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 18</li> </ul>
E.12	Does the board of directors have a term limit of six years or less for independent directors? (Bonus) <b>IRPC: A term limit of nine years</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 73</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 18</li> </ul>
E.13	Does the company have any <u>independent directors</u> who have served for more than <u>nine years</u> ? (Penalty) <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● No <input type="radio"/> Yes .....persons</li> <li>● 2016 Annual Report page 73</li> <li>● 56-1 Form</li> <li>● Company Website <a href="http://www.irpc.co.th/th/about_board.php">http://www.irpc.co.th/th/about_board.php</a></li> </ul>
E.14	Did the company fail to disclose the identity of the independent directors? (Penalty) <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 73</li> <li>● 56-1 Form</li> <li>● Company Website <a href="http://www.irpc.co.th/th/about_board.php">http://www.irpc.co.th/th/about_board.php</a></li> </ul>
E.15	Is any of the directors or senior management a <u>former</u> employee or partner of the current external auditor ( <u>in the past 2 years</u> )? (Penalty) <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● No <input type="radio"/> Yes .....persons</li> <li>● 2016 Annual Report page 12-34</li> <li>● 56-1 Form</li> <li>● Company Website <a href="http://www.irpc.co.th/th/about_management.php">http://www.irpc.co.th/th/about_management.php</a></li> </ul>
E.16	Does the company have any <u>independent directors</u> who serve on <u>more than five boards</u> of publicly-listed companies? <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● No <input type="radio"/> Yes .....persons</li> <li>● 2016 Annual Report page 13-16, 19-20</li> <li>● 56-1 Form</li> <li>● Company Website <a href="http://www.irpc.co.th/th/about_board.php">http://www.irpc.co.th/th/about_board.php</a></li> </ul>
E.17	Does the company have any executive directors who serve on more than two boards of <u>publicly-listed companies outside of the business group</u> ? <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>● No <input type="radio"/> Yes .....persons</li> <li>● 2016 Annual Report page 12-21</li> <li>● 56-1 Form</li> <li>● Company Website <a href="http://www.irpc.co.th/th/about_board.php">http://www.irpc.co.th/th/about_board.php</a></li> </ul>
E.18	Does at least one <u>non-executive</u> director have prior working experience in the major industry the company is operating in? <b>IRPC: Yes, (Mr. Tevin, Mr. Chansin, Mr. Chavalit, Mr. Nattachat, Mr. Anusorn and Mr. Songpope)</b>	<ul style="list-style-type: none"> <li><input type="radio"/> No <input checked="" type="radio"/> Yes 6 persons</li> <li>● 2016 Annual Report page 12-21</li> <li>● 56-1 Form</li> <li>● Company Website <a href="http://www.irpc.co.th/th/about_board.php">http://www.irpc.co.th/th/about_board.php</a></li> </ul>
E.19	Does the SET/SEC have any evidence of non-compliance with SET/SEC rules and regulations during the past year? <b>IRPC: No</b>	
E.20	Does the company have a <u>compliance unit</u> ? (Bonus) <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 88</li> <li>● 56-1 Form</li> </ul>
E.21	Does the board of directors have an internal audit (I/A) operation established as a separate unit in the company? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● Set up the Office of Corporate Internal</li> <li><input type="radio"/> Hire an external firm to be the auditor</li> <li>● 2016 Annual Report page 22</li> <li>● 56-1 Form</li> <li>● Company Website Please specify the link of this particular information <a href="http://www.irpc.co.th/th/about_organiz.php">http://www.irpc.co.th/th/about_organiz.php</a></li> </ul>
E.22	Identify to whom the internal audit function reports to <b>IRPC: Yes (The office of internal audit reports directly to the audit committee)</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 22</li> <li>● 56-1 Form</li> <li>● Company Website <a href="http://www.irpc.co.th/th/about_organiz.php">http://www.irpc.co.th/th/about_organiz.php</a></li> </ul>

No.	Rules and Guidelines	Information Sources
E.23	Is the <u>head of internal audit identified</u> or, if outsourced, is the name of the external firm disclosed? <b>IRPC: Yes (Executive vice president, officiate as office of internal audit manager : Mr. Thammasak Panyowatkool)</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 32,78</li> <li>● 56-1 Form</li> <li>● Company Website <a href="http://www.irpc.co.th/th/about_management.php">http://www.irpc.co.th/th/about_management.php</a></li> </ul>
Assess the quality of the Audit Committee Report in the Annual Report		
E.24	Meeting <b>IRPC: Yes (12 times)</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 83</li> </ul>
E.25	Internal control <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 78</li> </ul>
E.26	Related party transactions <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 78</li> </ul>
E.27	Proposed auditors appointment <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 78</li> </ul>
E.28	Financial report review <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 78</li> </ul>
E.29	Legal compliance <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 78</li> </ul>
E.30	Overall concluding opinion <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 78</li> </ul>
E.31	Does the company disclose the <u>board of directors diversity</u> policy? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 73-74</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 18</li> </ul>
E.32	Does the company disclose the <u>criteria</u> used in selecting new directors? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 80</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 18</li> </ul>
E.33	Does the company disclose the <u>process</u> followed in appointing new directors? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 80</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 18</li> </ul>
E.34	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>● 2016 Annual Report page 80</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 18</li> </ul>
E.35	Does the company use professional search firms or other external sources of candidates or director pool when searching for candidates to the board of directors? (Bonus ) <b>IRPC: Yes (Directors' Pool are used in identifying potential candidates)</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 80</li> <li>● 56-1 Form</li> </ul>
E.36	Does the company provide an orientation to new directors? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 60</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 19</li> </ul>
E.37	Does the company 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>● 2016 Annual Report page 60</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 49</li> </ul>
E.38	Have board members participated in the professional/accredited directors' training? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 12-21, 60</li> <li>● 56-1 Form</li> <li>● Company Website <a href="http://www.irpc.co.th/th/about_board.php">http://www.irpc.co.th/th/about_board.php</a></li> </ul>

No.	Rules and Guidelines	Information Sources
E.39	Does the board of directors encourage at least one director to regularly attend the continuing development programs or seminar for the directors in the last year? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 12-21, 60</li> <li>● 56-1 Form</li> <li>● Company Website <a href="http://www.irpc.co.th/th/about_board.php">http://www.irpc.co.th/th/about_board.php</a></li> </ul>
E.40	How many board meetings were held in the past year? <b>IRPC: 12 times</b>	<ul style="list-style-type: none"> <li>● Board meetings were held 12 times</li> <li>● 2016 Annual Report page 57, 82</li> <li>● 56-1 Form</li> </ul>
E.41	What is the attendance performance of the board members during the past 12 months? <b>IRPC: 97% of the Board members and over 75% of directors attending the meetings</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 57, 82</li> <li>● 56-1 Form</li> </ul>
E.42	Does the company require a minimum quorum of <u>at least 2/3</u> for board decisions? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 82</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 23-24</li> </ul>
E.43	Are the board of directors meetings scheduled before or at the beginning of the year? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 82</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 23</li> </ul>
E.44	Has <u>each of the directors attended</u> at least 75% of all the board meetings held during the year? <b>IRPC: Yes (over 75%)</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 82</li> <li>● 56-1 Form</li> </ul>
E.45	Are board papers for the board of directors meetings provided to the board <u>at least five business days</u> in advance of the board meeting? <b>IRPC: At least seven days</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 82</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 23</li> </ul>
E.46	Are there any meeting of non-executive directors in the absence of the management? <b>IRPC: Yes 1 times</b>	<ul style="list-style-type: none"> <li>○ No ● Yes 1 times</li> <li>● 2016 Annual Report page 82</li> <li>● 56-1 Form</li> </ul>
E.47	Does the board of directors provide a risk management policy? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 37-38, 75-77</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 30</li> </ul>
E.48	Does the company <u>disclose the internal control procedures and risk management systems</u> it has in place? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 37-38</li> <li>● 56-1 Form</li> </ul>
E.49	Does the annual report <u>disclose</u> that the <u>board of directors</u> has conducted a review of the company's material controls and risk management systems? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 37-38</li> </ul>
E.50	Does the annual report contain a statement from the board of directors or <u>Audit Committee commenting</u> 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>● 2016 Annual Report page 35-36</li> </ul>
E.51	Does the company disclose how <u>key risks</u> are managed? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 35-36</li> <li>● 56-1 Form</li> </ul>
E.52	Does the board of directors state a policy on conflicts of interest? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 48-49</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 74</li> <li>● Code of Business Conduct 12</li> </ul>
E.53	Does the board of directors clearly distinguish the roles and responsibilities of the board and those of the management? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>Roles and responsibilities are distinguished between</li> <li>● Directors ● Management CEO</li> <li>● 2016 Annual Report page 84</li> <li>● 56-1 Form page....</li> <li>● Corporate Governance Handbook page 39</li> </ul>



No.	Rules and Guidelines	Information Sources
E.54	Are the types of decisions requiring board of directors' approval disclosed? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 77</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 20</li> </ul>
E.55	Does the board of directors conduct an annual <u>self-assessment</u> ? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 58</li> <li>● 56-1 Form</li> </ul>
E.56	Does the company disclose the <u>process</u> followed in conducting the <u>board assessment</u> ? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 58</li> <li>● 56-1 Form</li> </ul>
E.57	Does the company disclose the <u>criteria</u> used in the <u>board assessment</u> ? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 58</li> <li>● 56-1 Form</li> </ul>
E.58	Is an annual performance assessment conducted of individual director? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 58</li> <li>● 56-1 Form</li> </ul>
E.59	Does the company disclose the <u>process</u> followed in conducting the <u>individual director</u> assessment? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 58</li> <li>● 56-1 Form</li> </ul>
E.60	Does the company disclose the <u>criteria</u> used in the <u>individual director</u> assessment? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 58</li> <li>● 56-1 Form</li> </ul>
E.61	Is an annual performance assessment conducted of all <u>Sub-committees</u> ? <b>IRPC: Yes</b>	<p>The Company has 4 Sub-committees</p> <ol style="list-style-type: none"> <li>1. <b>Nomination and remuneration committee</b></li> <li>2. <b>Audit committee</b></li> <li>3. <b>Risk management committee</b></li> <li>4. <b>Corporate governance committee</b></li> </ol> <ul style="list-style-type: none"> <li>● 2016 Annual Report page 59</li> <li>● 56-1 Form</li> </ul>
E.62	Does the board of directors conduct an annual performance assessment of the No.1 Management (CEO/President/Managing Director)? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 59</li> <li>● 56-1 Form</li> </ul>
E.63	Does the board of directors have a CEO succession plan in place? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 61</li> <li>● 56-1 Form</li> </ul>
E.64	Does the company disclose its remuneration (fees, allowances, benefit-in-kind and other emoluments) policy (i.e., the use of <u>short-term and long-term</u> incentives and <u>performance measures</u> ) for its executive directors and CEO? <b>IRPC : Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 91</li> <li>● 56-1 Form</li> <li>● Corporate Governance Handbook page 25-26</li> </ul>
E.65	Is there disclosure of the fee structure for <u>non-executive</u> directors? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 91</li> <li>● 56-1 Form</li> </ul>
E.66	Do the shareholders (or the board of directors) approve the remuneration of the executive director (or the senior executives)? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 90-91</li> <li>● 56-1 Form</li> </ul>
E.67	Does the board of directors appoint a company secretary? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>● 2016 Annual Report page 87</li> <li>● 56-1 Form</li> <li>● Company Website <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.	Rules and Guidelines	Information Sources
E.68	Is the company secretary educated or trained in legal, accountancy or company secretarial practices? <b>IRPC: The company secretary has been trained in the related field</b>	Education <input type="radio"/> Accountancy <input type="radio"/> Law/Training <input checked="" type="radio"/> Training <input checked="" type="radio"/> CSP <input type="radio"/> FPCS/FCS <input checked="" type="radio"/> 2016 Annual Report page 34, 87 <input checked="" type="radio"/> 56-1 Form <input checked="" type="radio"/> Company Website <a href="http://www.irpc.co.th/th/about_management.php#nogo">http://www.irpc.co.th/th/about_management.php#nogo</a>
E.69	Is the Chairman of the board an independent director? <b>IRPC: No, but appointed due to knowledge, ability and experience in petroleum and petrochemical industries (Chairman : Mr. Tevin Vongvanich)</b>	<input checked="" type="radio"/> 2016 Annual Report page 12 <input checked="" type="radio"/> 56-1 Form <input checked="" type="radio"/> Company Website <a href="http://www.irpc.co.th/th/about_board.php#nogo">http://www.irpc.co.th/th/about_board.php#nogo</a>
E.70	Is the Chairman of the board also the CEO/President/Managing Director? <b>IRPC: No (President : Mr. Sukrit Surabotsopon)</b>	<input checked="" type="radio"/> 2016 Annual Report page 12, 21 <input checked="" type="radio"/> 56-1 Form <input checked="" type="radio"/> Company Website <a href="http://www.irpc.co.th/th/about_board.php#nogo">http://www.irpc.co.th/th/about_board.php#nogo</a>
E.71	Are the role and responsibilities of the Chairman of the board disclosed? <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 77 <input checked="" type="radio"/> 56-1 Form <input checked="" type="radio"/> Corporate Governance Handbook page 24
Does the board of directors appoint the Audit committee with independent members to carry out various critical responsibilities?		
E.72	Does the Audit Committee <u>exist</u> ? If yes, are the following items disclosed (73)-(77)? <b>IRPC: Yes</b>	2016 Annual Report page 78 56-1 Form
E.73	Charter/Role and responsibilities <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 78-79 <input checked="" type="radio"/> 56-1 Form
E.74	<u>Profile/Qualifications</u> <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 13, 19-20 <input checked="" type="radio"/> 56-1 Form
E.75	<u>Independence</u> <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 78 <input checked="" type="radio"/> 56-1 Form
E.76	Did the Audit Committee meet <u>at least four times during the year</u> ? <b>IRPC: Yes (12 times)</b>	<input checked="" type="radio"/> 2016 Annual Report page 83 <input checked="" type="radio"/> 56-1 Form
E.77	Is the <u>attendance</u> of members at the Audit Committee meetings disclosed? <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 83 <input checked="" type="radio"/> 56-1 Form
E.78	Does <u>at least one of the independent directors of the Audit Committee have accounting expertise</u> (accounting qualification or experience)? <b>IRPC: Yes (Mr. Jessada Promjart)</b>	<input checked="" type="radio"/> 2016 Annual Report page 19 <input checked="" type="radio"/> 56-1 Form
E.79	Does the Audit Committee have a primary responsibility for recommendation on the <u>appointment and removal of the external auditor</u> ? <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 78-79 <input checked="" type="radio"/> 56-1 Form
E.80	Does the <u>appointment and removal</u> of the internal auditor require the approval of the Audit Committee? <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 78-79 <input checked="" type="radio"/> 56-1 Form
Does the board of directors appoint the Remuneration Committee to carry out various critical responsibilities?		
E.81	Does the board <u>appoint</u> remuneration committee? <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 79 <input checked="" type="radio"/> 56-1 Form
E.82	<u>Charter/Role and responsibilities</u> <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 79 <input checked="" type="radio"/> 56-1 Form

No.	Rules and Guidelines	Information Sources
E.83	Is the Committee composed of a majority of independent directors? <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 79</li> <li>56-1 Form</li> <li>total 1 of 3 directors, accounted for 33.33%</li> </ul>
E.84	Is the <u>Chairman</u> of the Committee an <u>independent director</u> ? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 13, 79</li> <li>56-1 Form</li> </ul>
E.85	Did the Remuneration Committee meet <u>at least twice during the year</u> ? <b>IRPC: Yes (5 times)</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 83</li> <li>56-1 Form</li> </ul>
E.86	Is the <u>attendance</u> of members at Remuneration Committee meetings disclosed? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 83</li> <li>56-1 Form</li> </ul>
Does the board of directors appoint the Nomination Committee to carry out various critical responsibilities?		
E.87	Does the board <u>appoint</u> nomination committee? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 79</li> <li>56-1 Form</li> </ul>
E.88	<u>Charter/Role</u> and <u>responsibilities</u> <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 79</li> <li>56-1 Form</li> </ul>
E.89	Does the Nomination Committee comprise entirely of <u>independent directors</u> ? (Bonus) <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 79</li> <li>56-1 Form</li> </ul>
E.90	Is the Committee composed of a majority of <u>independent directors</u> ? <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 79</li> <li>56-1 Form</li> <li>total 1 of 3 directors accounted for 33.33 %</li> </ul>
E.91	Is the <u>Chairman</u> of the Committee an independent director? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 13, 79</li> <li>56-1 Form</li> </ul>
E.92	Did the nomination committee meet at <u>least twice</u> during in year? <b>IRPC: Yes (5 times)</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 83</li> <li>56-1 Form</li> </ul>
E.93	Is the <u>attendance</u> of members at the Nomination Committee meetings disclosed? <b>IRPC: Yes (5 times)</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 83</li> <li>56-1 Form</li> </ul>
E.94	Does the board of directors appoint the Corporate Governance Committee or other Board Committee overseeing the corporate governance functions? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 80</li> <li>56-1 Form</li> </ul>
E.95	Does the board of directors appoint the <u>Risk Management Committee</u> (either at the Board or management level)? <b>IRPC: Yes</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 81</li> <li>56-1 Form</li> </ul>
E.96	Does the board of director comprise <u>of at least five members and no more 12</u> members? <b>IRPC: No</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 72, 73</li> <li>56-1 Form</li> <li>15 persons</li> </ul>
E.97	Does the company have <u>at least one female independent director</u> ? (Bonus) <b>IRPC: Yes (Miss Ruenvadee Suwanmongkol)</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 72, 73</li> <li>56-1 Form</li> <li>1 female independent director</li> </ul>
E.98	How many board members are non executive directors? <b>IRPC: 14 out of 15 persons (93.33% of the board)</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 72, 73</li> <li>56-1 Form</li> <li>14 non-executive directors</li> </ul>
E.99	Among the board of directors, how many are <u>independent directors</u> ? <b>IRPC: Yes 8 out of 15 persons (53.33% of the board)</b>	<ul style="list-style-type: none"> <li>2016 Annual Report page 72, 73</li> <li>56-1 Form</li> <li>8 independent directors</li> </ul>

No.	Rules and Guidelines	Information Sources
E.100	Does the board of directors provide the <u>definition</u> of 'independence' for identifying independent directors in public communications? <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 74 <input checked="" type="radio"/> 56-1 Form
E.101	Are the independent directors <u>independent</u> of the management and major shareholders? <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 74 <input checked="" type="radio"/> 56-1 Form
E.102	Does the company have a separate board of director's report describing their responsibilities in reviewing the firm's financial statements? <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 75-76 <input checked="" type="radio"/> 56-1 Form
E.103	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>	In the 2015-2016 AGM /EGM <input type="radio"/> Approval <input type="radio"/> ESOP <input type="radio"/> JIP <input type="radio"/> warrant <input checked="" type="radio"/> No
E.104	Did the company sign the declaration of the Private Sector Collective Action Coalition Against Corruption? (Bonus) <b>IRPC: Yes</b>	
E.105	Did the company publish the Board Committee Report for each Board Committee (only at the Board level) in the company's annual report? (Bonus) <b>IRPC: Yes</b>	<input checked="" type="radio"/> 2016 Annual Report page 78-82 <input checked="" type="radio"/> 56-1 Form
E.106	Has the company had any non-compliance cases regarding fraud/ethics in the past year? (Penalty) <b>IRPC: No</b>	
E.107	Have there been any instances where nonexecutive directors have resigned and raised any issues of governance-related concerns? (Penalty) <b>IRPC: No</b>	
E.108	Have there been major corporate scandals that point to weak oversight by the board of directors? (Penalty) <b>IRPC: No</b>	

## COMPLIANCE WITH CORPORATE SOCIAL RESPONSIBILITIES

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IRPC Public Company Limited

555/2 Energy Complex Building B, 6th Floor,  
Vibhavadi-Rangsit Rd., Chatuchak, Bangkok 10900 Thailand

Tel. : 66 (0) 2649-7000, 66 (0) 2649-7777

Fax : 66 (0) 2649-7001

[www.irpc.co.th](http://www.irpc.co.th)

