



# 2016 Sustainability Report



Caring, Innovation and Sustainability



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# Editing Principles

## About this Report

Since CPC started publishing Corporate Sustainability Report (CSR) in 2007, 2016 CSR is the eighth edition of the report. From the perspectives of economy, environment and society, and with related data and detailed description, this report would show CPC's promise and effort on corporate social responsibility in 2015.

In this report, Chinese Petroleum Corporation, Taiwan would be simplified as CPC. All the critical wording, phrases, abbreviations, or proper nouns would be described in notes shown in the corresponding page.

## Scope of the Report and Statistics Basis

This report covers CPC's corporate social responsibility effort and results from Jan. 1, 2015 to Dec. 31, 2015. Some of the contents also cover information before and after 2015, and some of the contents related to later on policies, goals and plans are also mentioned. The data covers CPC headquarter and its related operation system and activities. For the data and items not presented in this report and the material provided in the report, please visit our official company website for more information.

Most of the statistic data for this report comes for CPC's internal data collection, research and inquisition. For the financial data, it is public information and it is audited and verified by Deloitte & Touche. Some of the statistic data is cited from public information from government websites, for example, Environmental Protection Administration, and Council of Labor Affairs, Executive Yuan. All the numbers are presented in common description. ISO 14064-1, Greenhouse gas emission data, ISO 14001, OHSAS 18001 are checked and verified by Bureau of Standards, Metrology and Inspections, Ministry of Economic Affairs. Compared to 2015 report, there is no information re-editing and no noticeable difference in the scope of the report.

## Referred Guidelines and Principles

- ▶ Global Reporting Initiative (GRI) Version 4
- ▶ Oil and Gas Industry Information Revelation Guidelines
- ▶ AA1000 Assurance Standard
- ▶ ISO26000 Social Responsibility Standard Guidelines
- ▶ UN Global Compact

## Verification of the Report

All the information in the report is verified by the renowned British Standard Institution (BSI). It meets GRI G4 Core and AA1000 Assurance Standard. BSI verification report can be seen in appendix and it is presented in international general index. If there is any estimation, it would be mentioned in the chapter notes.

## Publishing Schedule

CPC annually publish CSR

Latest English version: September, 2016

Previous version: July, 2015

Next version: Jun, 2017 (estimated)

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You are more than welcome to download the complete CSR in PDF format from the CPC official website, <http://new.cpc.com.tw/csr/report/>



## Hand in hand cherish the Earth

The report was printed with environmental friendly Soy ink



# Our Ultimate Commitment

## Transformation and Strengthening to Build Sustainable Competitiveness

**International** oil prices have fallen significantly since mid-2014, declining by up to 70%. CPC has consequently incurred huge losses due to its mandated practice of adjusting the price of gasoline at the pump accordingly on a weekly basis, the real cost not being reflected until much later. Refinery operations were severely impacted as various units in the Kaohsiung complex – closed by end-2015 in fulfillment of a pledge given to the government – were wound down. The resulting rise in refining costs had a severely negative effect on CPC's overall operational efficiency in 2015.

Despite numerous external challenges and the limitations of operating as a state-owned enterprise under government control, CPC is unwavering in its commitment to certain key aims: seeking overseas sources of oil and gas, upgrading its refinery operations and technology, diversifying the scope of business, implementing more efficient financial practices and optimizing the use of human capital. We would like to achieve a transformative breakthrough from the current situation, our aim being to boost our operational efficiency and develop new forms of energy that support sustainable development. Meanwhile, CPC has actively met duties and responsibilities to all the stakeholders.



In order to meet duties and responsibilities to all the stakeholders, CPC promised as the following content:

### Strengthening and Enforcing Workplace Safety Measures

Workplace safety is key to successfully sustainable operations. CPC will take a proactive approach in strengthening adherence to workplace safety disciplines and knowledge of emergency procedures, by means of a training program - for both company and contractor staff - offering classes, seminars and workshops for learning and experience-sharing. These educational sessions will strengthen both our workplace safety culture and our peoples' understanding of the key features of safety management across our many and varied activities - such as ongoing evaluation of safety rules and the human factor in hazard prevention - that will reduce the number of work-related accidents and occupational mishaps.

### Diversifying Overseas Energy Sources and Expanding Trade Networks

The current lower level of the price of oil has generated a prime opportunity for finding additional oil and gas suppliers and for acquiring new fields that fit with our strategy of investing in upstream oil exploration and locking in overseas sources. There is ongoing evaluation of new areas for expansion of our trading network following the establishment of oil and gas product trading offices in Singapore, Qatar and Dubai; we hope that this expansion will broaden the scope of our international operations.

### Diversify Operations and Revitalize Assets

CPC's diversification initiative has performed above expectation, with 2015 revenue exceeding NTD 1.1 billion. In it we are focused on expanding the range of services offered at the 618 CPC-owned gas stations (including 6 franchised sites) to include carwash, home cleaning products and tire changing. Achieving these and similar goals will revitalize our assets, greatly benefiting CPC as a whole. Further, by the end of 2015 we had resolved nine cases of under-utilized land, with nine more cases pending resolution. Royalties brought in NTD 3.5 billion, becoming one of our most stable revenue sources; and rent has also brought in hundreds of millions. We plan to continue reassessing the potential of the company's real estate holdings and evaluating other assets in need of reinvigoration.

### Focusing on R&D and Introducing New Products

CPC is currently developing high value-added petrochemical products in compliance with government policy for raising added value across industries. We will endeavor to organize both development and investment in niche markets, as well as working with domestic downstream companies to build high value-added production sites and seek opportunities to upgrade Taiwan's petrochemical industry. As an example, September 2015 saw CPC enter into collaboration with KHNC of Japan and Mega International Commercial Bank, as well as the jointly-established Ye-Yang Co., Ltd, to produce the environmentally-friendly plasticizer isononanol (INA)

### Energy Conservation and Carbon Reduction are Keys to Sustainable Development

In compliance with the global trend towards carbon reduction and calls for the regulation and management of greenhouse gases, we expect low-carbon natural gas to play a critical role during the transition to full carbon fuel reduction. As Taiwan's sole natural gas provider, we are responsible for ensuring a safe and stable supply of energy for all uses and especially generating electricity. We are active in seeking out diverse sourcing for our natural gas needs, as well as planning capacity expansion of the Taichung LNG receiving terminal, construction of Taiwan's third LNG receiving plant and building out the natural gas transportation and storage network. We aim to go on with reducing the carbon footprint of all our refinery units, focusing especially on reduction of CO<sub>2</sub> emissions. Establishment of the Green Technology Research Institute demonstrates our active involvement in researching new energy technologies in such areas as hydrogen, fuel cells, biofuels and photovoltaics. We aspire to establishing the core technology for green energy, develop green products and making a significant contribution to environmental protection.

## Knowledge Management and Retaining Professional Expertise

Knowledge management and building a body of retained professional and managerial expertise will be key priorities. Organizing job rotation mechanisms that enable people to accumulate cross-functional experience with a variety of successful business execution techniques will help facilitate the effective transmission of professional and technological know-how.

## Letting Society's Underprivileged Feel the Love

CPC's many CSR activities include regular beach cleaning sessions, blood donation drives and the successful planting of some 300,000 trees over the last seven years. We hope to be seen as an exemplar in this, leading other companies to be similarly engaged, and helping them to both build harmony with all stakeholders and spread the message that the corporate community cares.

Our efforts towards achieving sustainable management will be unwavering and we will work with all our stakeholders at coexisting with the environment and integrating into the community.

Chairperson of the Board

*Derek Chen*

President

*Paul L.W. Chen*





# Shouldering Responsibility

# 1

## 1.1 CPC Current Status

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# 2015 Operation Achievement



## 443

Rank 443 in 2016 by Fortune Global 500.



## AAA

Evaluation result from Fitch Ratings Taiwan in May 2016: long term foreign currency Issuer Default Rating: A+, Domestic long term rating: AAA.



## 1<sup>st</sup>

First place in service category for gas station, Next Magazine, 10th year in a row.



## 843.6 billion

In 2015, the revenue of CPC was approximately NTD 843.6 billion.



## 116.1 billion

Financial contribution to Taiwan government is NTD 116.1 billion.



## ↑ 7.55%

Sold natural gas of 18.9 billion m<sup>3</sup> in 2015, growth rate of 7.55% compared to 2014.



## 79.1%

CPC has a total of 1,978 gas stations in Taiwan, market share of 79.1%.



## 2.337 billion

CPC invested NTD 2.337 billion in R&D.



## 133 patents

Up to the end of 2015, CPC has owned 133 patents approved and 25 applied.



## 8.84%

In 2015, CPC has NTD 1.558 billion revenue from affiliated business and investment with 8.84% Return On Investment (ROI)



## 4,000 Person-times

In 2015, CPC held 27 promotions for being honest and clean with over 4,000 person-times participating.

# 1.1 CPC Current Status

## 1.1.1 Objectives and Visions



## 1.1.2 About CPC

Shouldering the responsibility of providing ample energy and striving for sustainable management

### CPC Corporation, Taiwan

Incorporated Date/	June 1, 1946
Identity/	Government owned (MOEA 100%)
Capital/	NTD130.1 billion
Revenue/	NTD843.6 billion, 2015
Chairperson/	Derek Chen
President/	Paul, Lie-Way Chen
Number of employees/	14,685 (2015/12/31)
HQ/	No.2, Zuonan Rd., Nazi District, Kaohsiung City 811, Taiwan(R.O.C)

### ► CPC Global Ranking in 2015

(Data source : Fortune Global 500, 2016)

CPC has stood firmly among international enterprises and ranked 443 in International Business Ranking in 2016. In the future, CPC will continue to innovate and cultivate, and devote to step into the groups of enterprises before 150 together.



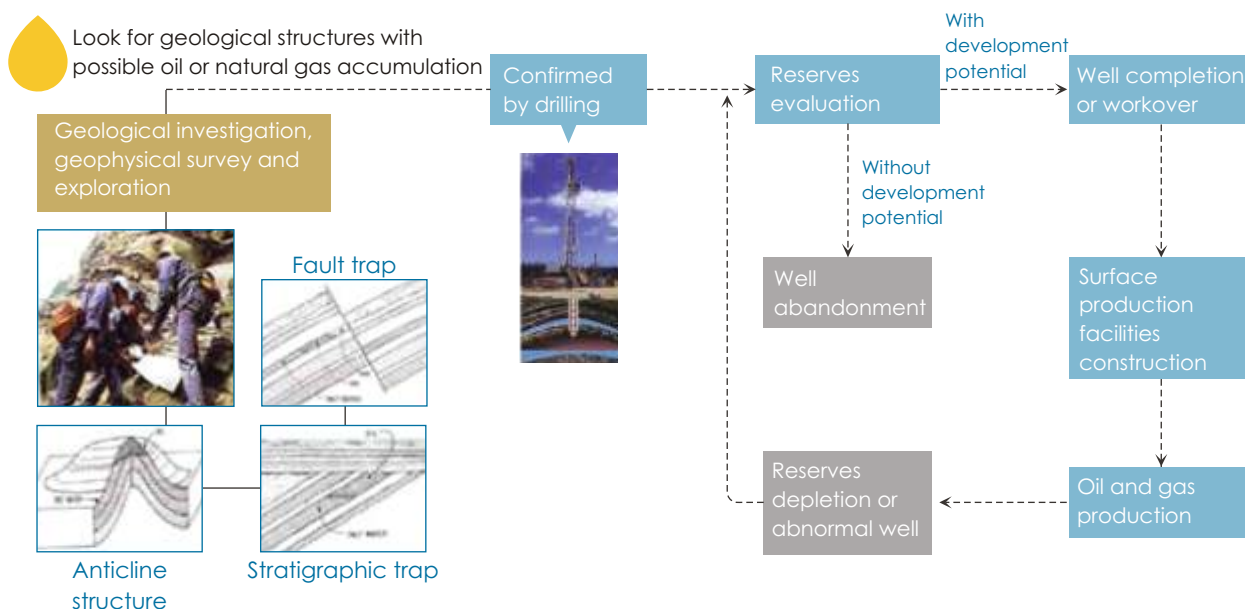
► Major Brands, Business, and Products



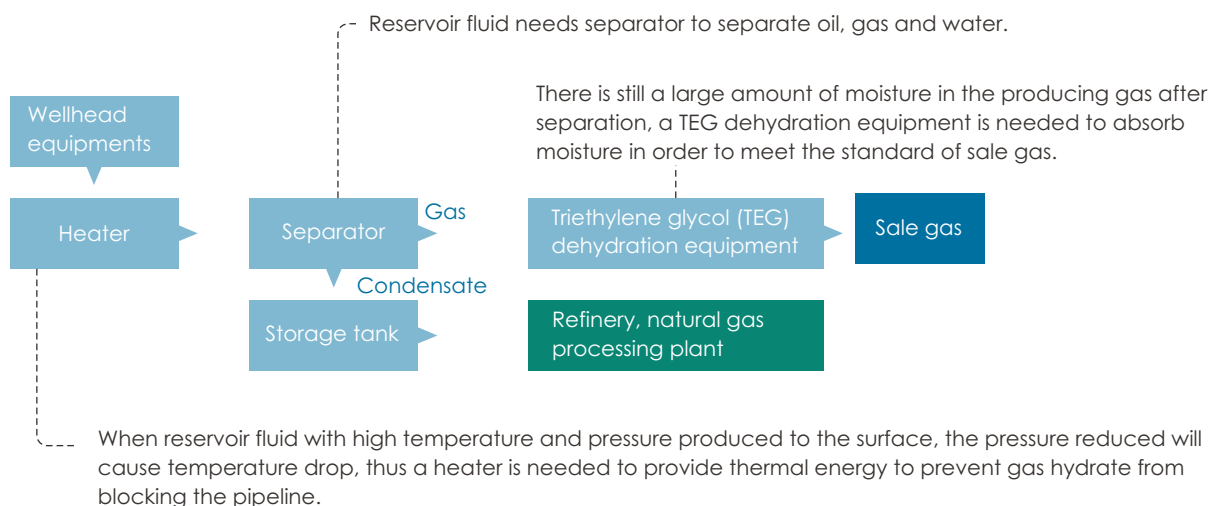
Upstream Business

Exploration and Development of Oil and Gas

Exploration and Production of Oil and Gas

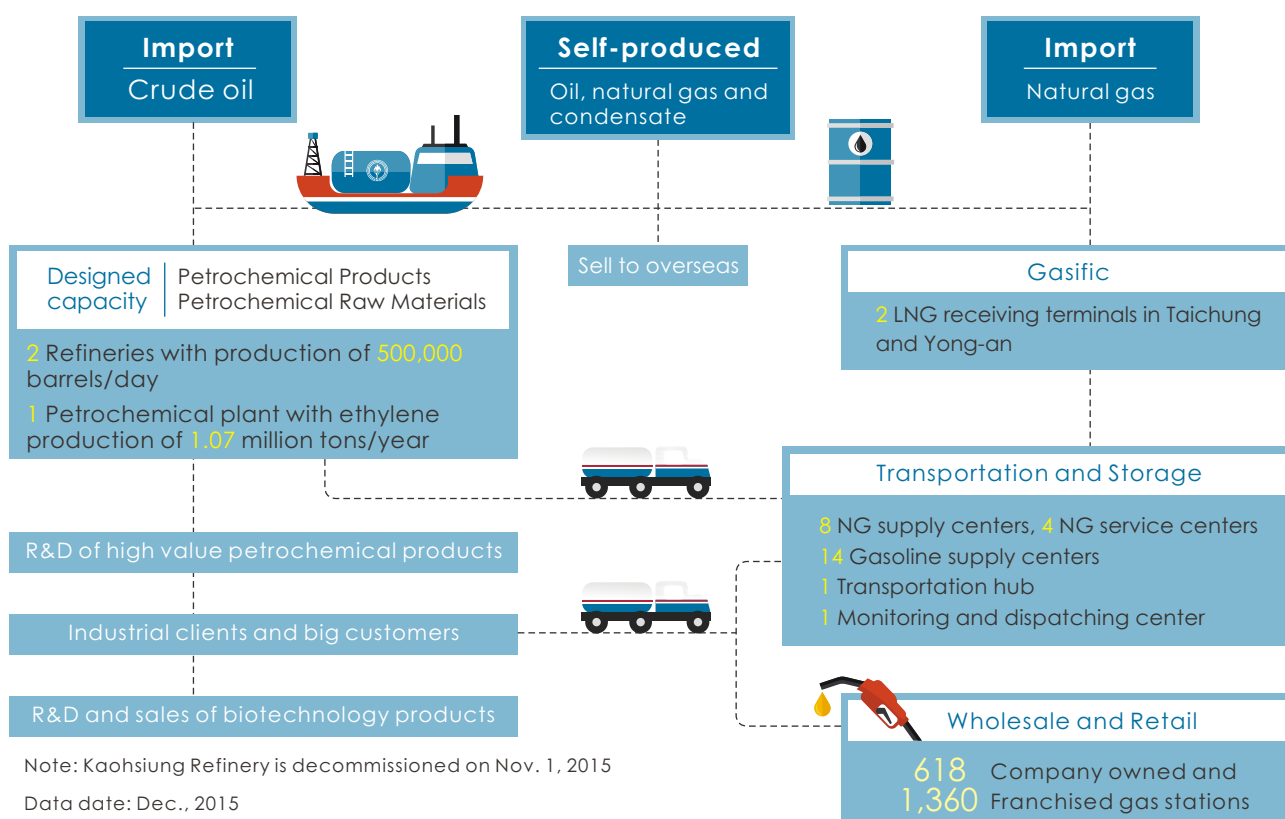


Production and Processing of Oil and Gas



## Downstream Business

Major Business	Major Products
Refinery, storage and transportation, and sales of oil and natural gas.	Oil products (gasoline, diesel, fuel oil, aviation oil), LPG (liquefied petroleum gas), household and industrial gas.
Manufacturing and supply of petrochemical raw materials.	Petrochemical raw materials like alkene (ethylene, propylene, 1, 3-butadiene) and aromatic hydrocarbons (benzene, p-xylene, o-xylene etc.), and solvent products.
R&D and sales of biotechnology dietary supplement.	Dietary supplement, biotechnology body care products and beverage, cleaning products and lubricants.



## Important Changes in Supply Chain and Organization in 2015

- ▶ Taiwan government promised to decommission Kaohsiung Refinery and thus the refinery task would be transferred to Dalin Refinery. With the increasing production of Dalin Refinery, the domestic oil supply has not been interrupted. The petrochemical production has been replaced by the new number 3 naphtha cracker in Linyuan Petrochemical Complex.
- ▶ Abide by government policy of decommissioning Kaohsiung Refinery and transferred all staff to other department internally.
- ▶ June 16th, 2015, the New Materials Trial Production & Certification Center was merged into Green Technology Research Institute. CPC'd like to actively integrate resources and work on the development for high value added petrochemical products and green energy products.

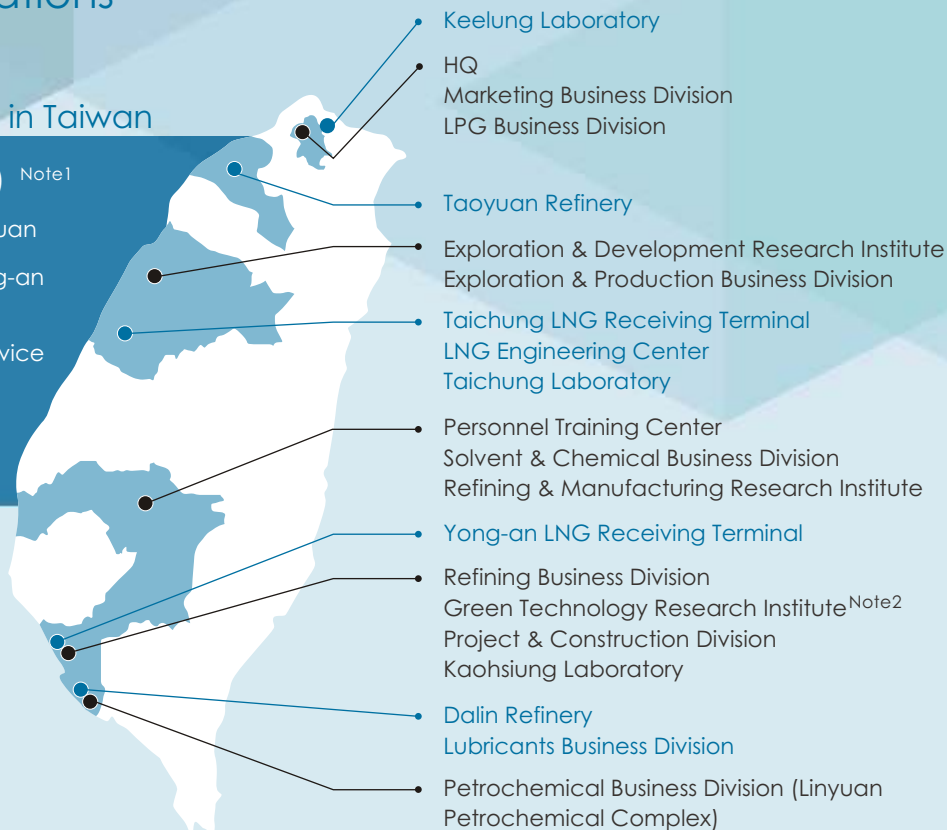
## 1.1.3 Operation Locations

### Major Operation Locations in Taiwan

- ▶ 2 refineries (in Taoyuan and Dalin) <sup>Note1</sup>
- ▶ 1 petrochemical Complex in Linyuan
- ▶ 2 LNG receiving terminals (Yong-an and Taichung)
- ▶ NG supply centers, 4 NG service centers, and 1 transportation hub
- ▶ 14 gasoline supply centers
- ▶ 1,978 gas stations

Note 1: Kaohsiung Refinery is decommissioned on Nov. 1, 2015

Note 2: New Materials Trial Production & Certification Center was merged into Green Technology Research Institute on June. 16, 2015



### CPC Major Oversea Operation Locations

Over years, under the name of Overseas Petroleum Investment Corporation, OPIC, CPC works with other government owned or international oil companies in oil exploration. Major overseas operation bases located in America, Ecuador, Niger, Chad, Qatar, Singapore, Indonesia, Vietnam and Shenzhen, China.

Asia-Pacific is CPC's major oil product market, for example, China, Korea, Hong Kong, Singapore, Indonesia, Malaysia, Vietnam and Philippines.



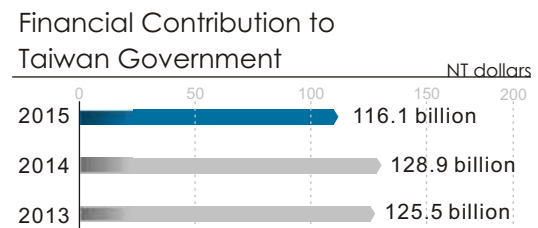
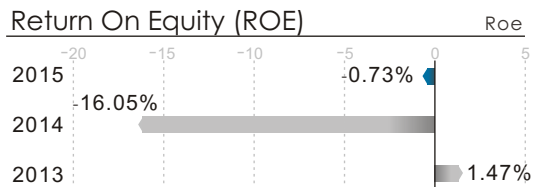
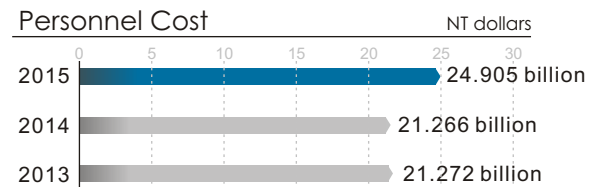
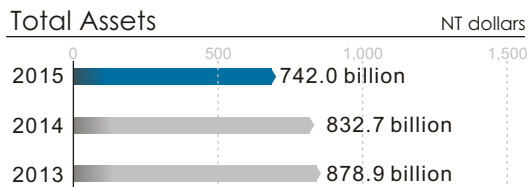
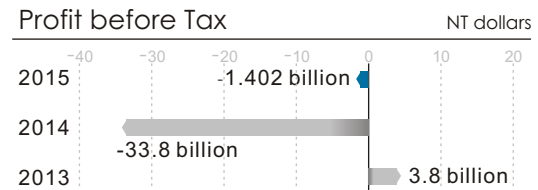
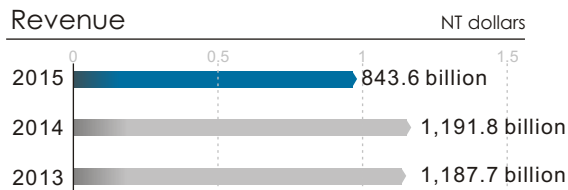
### CPC Global Operation Locations

- |  |   |
|--|---|
| 1/ <b>Taiwan</b> Headquarter, CPC, Taiwan                        | 7/ <b>Chad</b> Chad branch, OPIC                    |
| 2/ <b>Shenzhen</b> Taiwan-Chaoshan Petroleum Operating Co., Ltd. | 8/ <b>Niger</b> Niger branch, OPIC                  |
| 3/ <b>Vietnam</b> Dai Hai Petrol Corp.                           | 9/ <b>Libya</b> Libya branch, CPC                   |
| 4/ <b>Singapore</b> CPC International Trading Pte. Ltd           | 10/ <b>US</b> Opicoil America, Inc.                 |
| 5/ <b>Indonesia</b> Indonesian branch, OPIC                      | 11/ <b>Republic of Ecuador</b> Ecuador branch, OPIC |
| 6/ <b>Qatar</b> Qatar Fuel Additives Company Limited             |   |

# 1.2 Operation Achievement

## 1.2.1 Financial Achievement

### ► CPC Financial Performance Over the Years



### ► Government Financial Aids

Based on "Operation direction for oil and gas exploration and development, oil fund", CPC applied and is granted 453 million in 2015.








Note : CPC didn't get any government financial aids in 2015 and thus, investment tax credit is 0.

### Achivement in Increasing Operation Efficiency in 2015

- There is one land revitalization case, with area of 0.34 hectare. The case was obtained by Taishin Construction company.
- In 2013, CPC worked with PetroChina Company Limited, exploring Agadem oil field in Niger and obtained phase two oil reserve of 40.75 million barrels. Based on oil gained in 2015, CPC can get additional 12 million barrels.
- To get a better handle on the international oil price, CPC is adapting spot trading in order to dynamically purchase crude oil. It effectively reduces cost of purchasing oil.

## 1.2.2 Operation Overview

### Operation Achievement in 5 Core Businesses, 2015

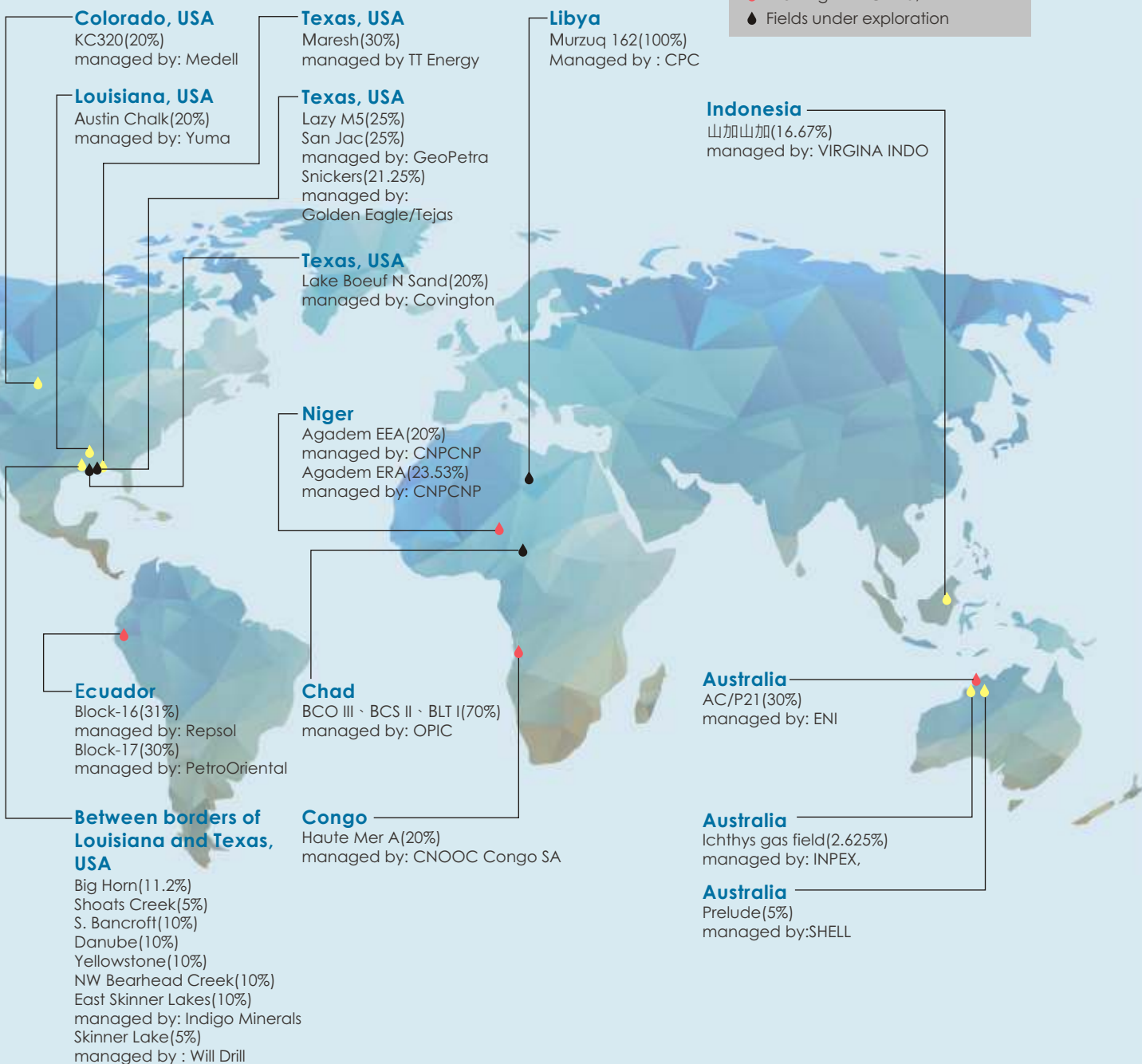
Item	Major Achievement
 <p>Exploration</p>	<ol style="list-style-type: none"> <li>1. Obtained three American oil fields, San Ja, Lazy M5, and Snickers in Texas.</li> <li>2. Implemented research projects of "oil sands field evaluation", "overseas non-traditional oil and gas field evaluation" and "northern Taiwan potential geothermal energy exploration and evaluation"</li> </ol>
 <p>Refinery</p>	<ol style="list-style-type: none"> <li>1. Followed the government policy of decommissioning Kaohsiung Refinery in 2015, and properly planned the decommissioning tasks and the related employee transfer.</li> <li>2. At the end of 2015, built two exhaust gas recycling systems in Dalin Refinery and one in Taoyuan Refinery.</li> <li>3. It is expected that the bottlenecks eliminating project for the residual crude hydrodesulphurization unit 3, Dalin Refinery and the related facilities will be done by end of March, 2017.</li> <li>4. The production expansion project for Dalin Refinery in response to production capacity lost due to the decommissioning of Kaohsiung Refinery would be done by end of June, 2017.</li> <li>5. The joint venture project with KHNC, Japan for the production of Isononyl alcohol (INA) is established in Oct. 2015, and CPC is working on building up for the basic design process and preparation for the factory construction.</li> </ol>
 <p>Petrochemical</p>	<ol style="list-style-type: none"> <li>1. Maintain the full production for and the number 4 Naphtha Cracker and the new number 3 Naphtha Cracker.</li> <li>2. Considering profitability, dynamically adjust the production line for Aromatic Hydrocarbon Unit.</li> <li>3. Keep pushing for high value added production project for petrochemical factory.</li> </ol>
 <p>Sales and Marketing of Oil Product</p>	<ol style="list-style-type: none"> <li>1. "Trusted Brands", Reader's Digest, for the 15<sup>th</sup> year in a row.</li> <li>2. Number one in "Best Service" gas station category, Next Magazine, for the 10<sup>th</sup> year in a row.</li> <li>3. Number one "Best Brand for Consumer", Management Magazine, for the 11<sup>th</sup> year in a row.</li> <li>4. Established Taiwan Occupational Safety and Health Management System (TOSHMS), and renewed in Dec. 2015.</li> </ol> <div style="display: flex; justify-content: space-around; align-items: center;"> <div data-bbox="683 1585 1002 1720" style="border: 1px dashed blue; padding: 5px; text-align: center;">  <p>Still Got "Trusted Brand Platinum Award" of Reader's Digest</p> </div> <div data-bbox="1029 1585 1401 1720" style="border: 1px dashed blue; padding: 5px; text-align: center;">  <p>Still Ranked First in "the Best Service Award" Categorized as Gas Station by Next Magazine</p> </div> </div>
 <p>NG</p>	<ol style="list-style-type: none"> <li>1. Sale of NG in 2015 is 18.95 billion m<sup>3</sup>, an increase of 7.55%, compared to 2014.</li> <li>2. Signed the Memorandum of Understanding with Tokyo Gas, Japan to expand the future natural gas business.</li> </ol>

## Pushing of Inter and Outer Country Gas Exploration and Production in 2015

- ▶ Acquired new exploration right for 3 new oil fields.
- ▶ Negotiating for the exploration right for three shale gas filed in H field, Chad, WA-274-P field, Australia and Permian Bsain field, USA.
- ▶ Working with international oil companies for the exploration of 25 fields in 8 countries.

### CPC's 25 Overseas Oil Fields Locations in 8 Countries

- 🔆 Developing/production fields,
- 🔴 Working with China,
- ⬛ Fields under exploration





## ► Sales and Marketing Achievement for Main Products

### Sales and Marketing Achievement for Main Products in 2015



Total Sales for  
Petro Products

33.45 million kl

Refined Crude Oil

20.53 million kl

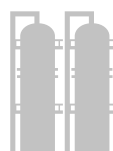
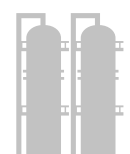


LPG Sales

670 thousand tons

Domestic NG  
Production

374 million m<sup>3</sup>

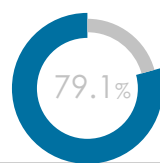


NG Sales

18.95 billion m<sup>3</sup>

Market Share for  
Gas Station

79.1 %



Gas Station

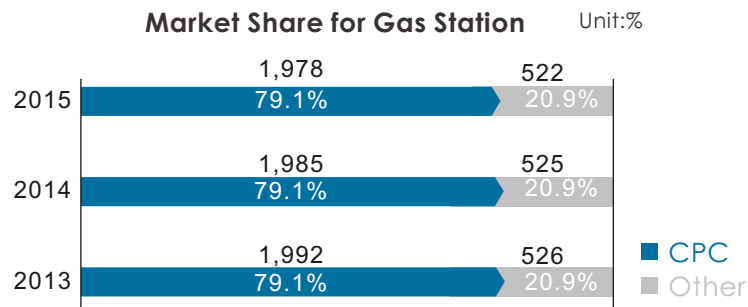
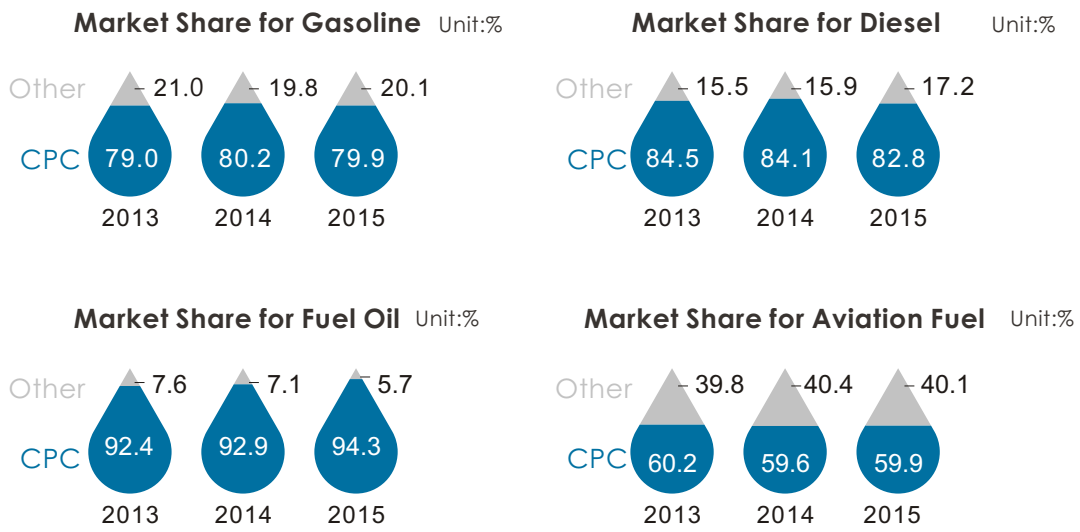
CPC  
owned

618

Franchised

1,360

## Market Share for Gasoline Products



### 1.2.3 Research and Development

There are 30 research and development projects in 2015. The benefits obtained from research and development which estimated at 3.296 billion NT dollars. There are 15 patents approved, 99 new technology introduced or created, and 284 articles published.

#### RD Strategy

- ▶ Improve exploration and refinery technology
- ▶ Establish self-owned key technology
- ▶ Elevate innovation capability
- ▶ Develop green energy, green products and green technology
- ▶ Strive for RD and pursue sustainable development



2015 RD Cost Funded NTD 2.337 billion

2016 RD Budget NTD 2.278 billion

## Major RD Items and Achievements

### Traditional and Non-traditional Oil and Gas Field Resource Evaluation

- ▶ Plan BCO III oil field, Chad development project.
- ▶ Evaluate production efficiency for oil fields in Chad.
- ▶ Simulate and observe that there is huge amount of oil and gas in Agadem field, Niger.
- ▶ Evaluate potential amount of oil and gas in fields in south-east area of Chaoshan.
- ▶ Evaluate the exploration possibility for potential geothermal energy in northern Taiwan.
- ▶ Complete research project for oil and gas field potential evaluation for Kaohisung-Pingtung area.
- ▶ Regularly check and test corrosion for existing oil and gas pipes and provide service and maintenance suggestion.

### Environmental Engineering Technology Application

- ▶ Assist gas stations, refinery and gasoline supply center to check, monitor and investigate pollution source, range of pollution, and hydrogeology.
- ▶ Help government to establish environmental protection regulation and the related inspection and checking technology.
- ▶ Evaluate feasibility of CO<sub>2</sub> capture and storage in anticlinal structure in Fengshan.
- ▶ Help complete the resolution provision in "environmental impact description statement for the facility replacement project of Dalin Refinery.
- ▶ Check and measure health risk of Volatile Organic Compounds.
- ▶ Build up waste water treatment and recycle technology.

### New Product Development

- ▶ Actively involve in new product, new technology and on-site technical service.
- ▶ Improve manufacturing process and develop new technology.
- ▶ Use extractive distillation to produce absolute alcohol and for BTX processing.
- ▶ Utilize infrared thermal imaging technology to strengthen safety check for pipes and equipment.
- ▶ Replace fire resisting materials and spray high radiation emissivity coating material to the inside surface of the heating furnace to increase the thermal conductivity.
- ▶ Develop high performance and high value added petrochemical derivatives.
- ▶ Develop high value added products with environmental protection consideration.

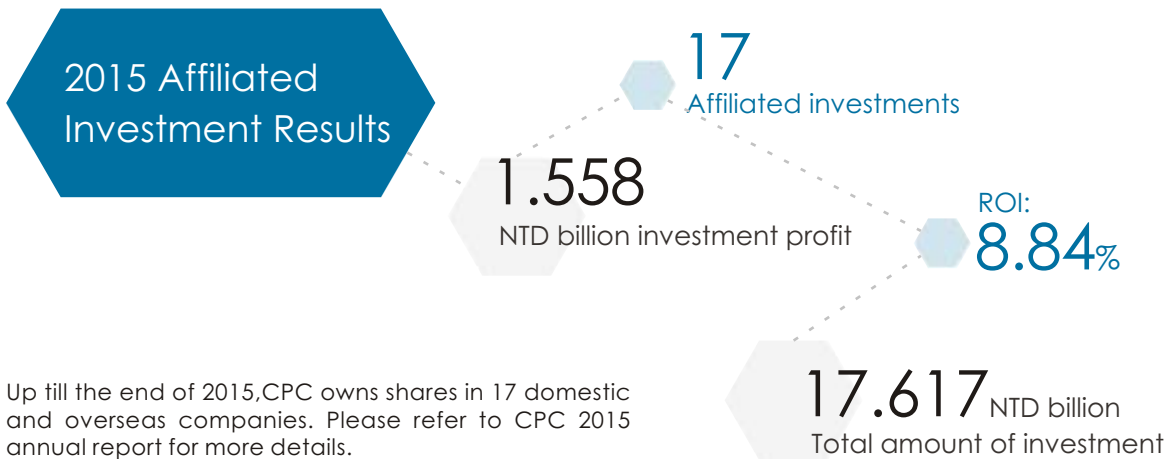
### Biomass Energy and Green Energy Research

- ▶ Work with pollution treatment plan to increase bio processing efficiency for polluted soil.
- ▶ Actively involve in green energy related technology development.
- ▶ Set up mobile hydrogen refueling stations to broaden and push hydrogen fuel cell application.
- ▶ Engage in liquid biofuels research and development.
- ▶ To develop biomass pyrolysis process and separation technology to produce high value added green biomass products.
- ▶ Utilize high temperature sintering technology to produce silicon carbide for effectively add value to agricultural wastes.

## RD Achievement in the last 3 Years

Year	2013	2014	2015
Financial Achievement(NTD)	3.571billion	3.120 billion	3.296 billion
Patent Approved	13	10	15
Research Papers Published	249	291	284
New Technology Introduced	96	109	99

### 1.2.4 Other Affiliated Investment



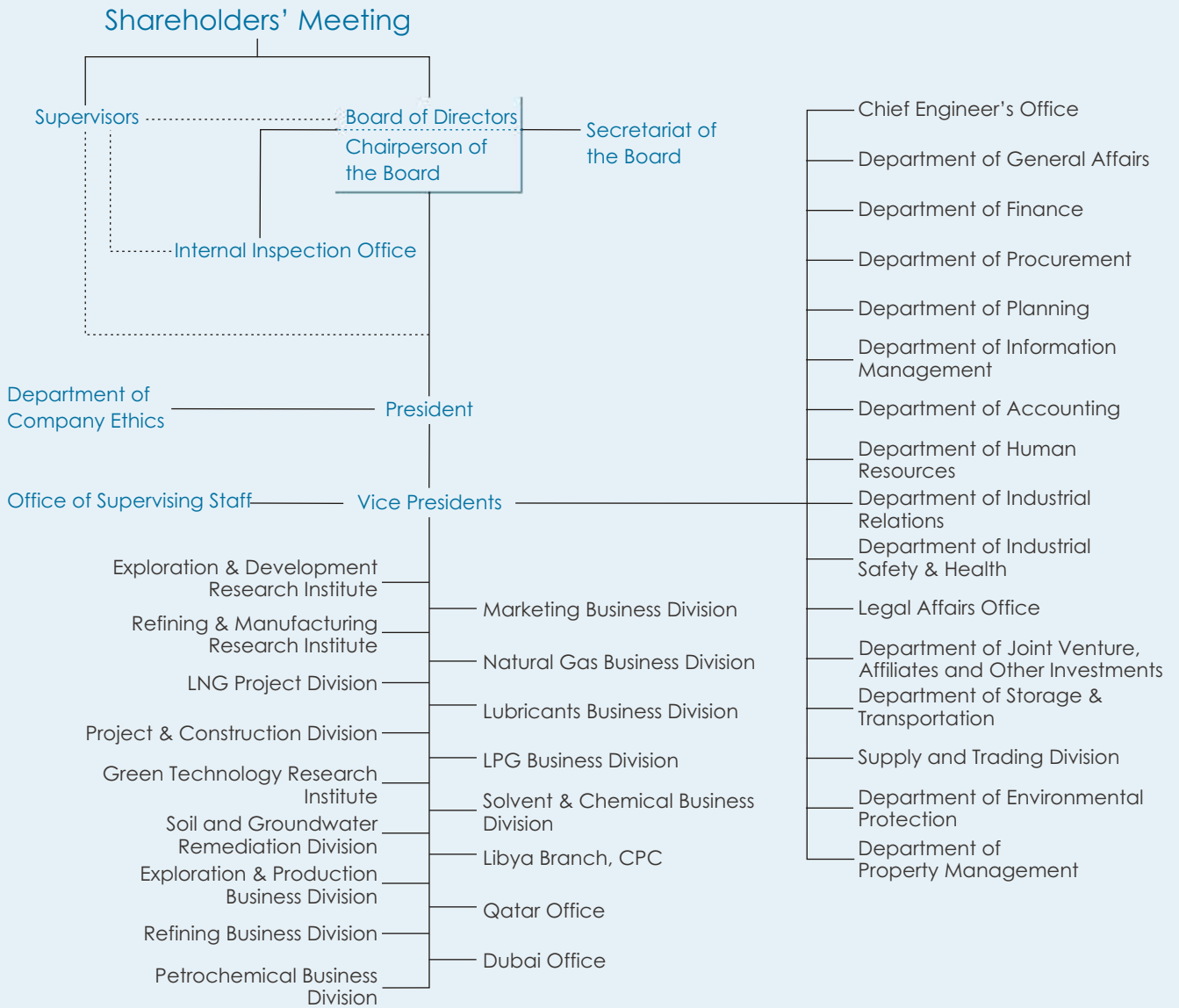
# 1.3 Company Management

Based on guidelines and policies, CPC follows related laws, regulations and management principles. CPC has accepted and taken "2015 company management evaluation mechanism, MOEA owned enterprises " to effectively enhance company competitiveness and risk management capability and to strengthen company operation.

Major Practice for Company Management	
Policy	Major Action and Achievement
Establish Effective Management Structure	<ul style="list-style-type: none"> <li>▶ Set up ethic guidelines for the whole company and regularly check those guidelines.</li> <li>▶ Implement government policy and publish the impact to company operation.</li> <li>▶ Regularly check for the rules or regulations ,which are unfavorable for business development.</li> </ul>
Ensure Share-Holders' Benefits	<ul style="list-style-type: none"> <li>▶ Board of directors (BOD) acts on behalf of shareholders' meeting.</li> <li>▶ Agenda and meeting record for BOD meetings are sent to MOEA and the business execution is based on the related regulations.</li> <li>▶ Record independent directors' actions and activity in the annual report.</li> <li>▶ Inform and send related documents to all directors and supervisors 7 days before the BOD meeting.</li> </ul>
Enhance BOD Function and Authority	<ul style="list-style-type: none"> <li>▶ Clearly provide selection procedures for directors and supervisors in articles of incorporation.</li> <li>▶ Number of non-government employee directors in BOD should be more than one half.</li> <li>▶ Directors from labor force should have the same power and authority as the general directors.</li> <li>▶ At least one member in the independent directors and supervisor with accounting and financial background.</li> <li>▶ At least once a year, evaluate the independency and suitability of hiring accountants.</li> <li>▶ If independent director has any objection or reservation, opinion, it would be clearly stated in the BOD meeting report.</li> </ul>
Strengthen Supervisor Function	<ul style="list-style-type: none"> <li>▶ When participating BOD meeting, supervisor meeting would be held for the discussion.</li> <li>▶ Proper interaction with accountants when they are working on financial report auditing and before they provide opinions and suggestions.</li> <li>▶ If needed, actively ask for management staff to provide reports or attend discussion if necessary.</li> </ul>
Respect Stakeholders Rights and Interests	<ul style="list-style-type: none"> <li>▶ Provide customer with transparent and effective complaint filing procedure to our product and service.</li> <li>▶ In 2015, there is no enforcement or punishment related to violations or incidents regarding to public announcement regulation.</li> <li>▶ In 2015, there is no enforcement or punishment related to consumer incidents.</li> </ul>
Enhance Information Transparency	<ul style="list-style-type: none"> <li>▶ Regularly publish financial report.</li> <li>▶ Set up an exclusive page in official website for stakeholders to disclose nonfinancial information.</li> <li>▶ In 2015, there is no CPC management staff working as managers in affiliated companies.</li> </ul>

## 1.3.1 Management Structure

### CPC Organization Chart



#### ► Board of Directors

There are 13 directors (including 2 independent directors) and 3 supervisors in CPC. Up till 9/12/2016, we have 11 directors (including 2 independent director) and 3 supervisors, and all of them are assigned by our single shareholder, MOEA, with two year term appointment from June 12, 2015 to June 11, 2016. Of the 10 directors, chairperson and president are the executive directors. There are 2 females in the 13 directors with the female percentage of 15%. Also, CPC's chairperson is not the company executive.

There are two regular board meetings in 2015 and the education and the number of training hours for CPC directors and supervisors satisfied the rules listed in "Directors and supervisors for public company training and education guidelines", with 6 hours of education and training. Please refer to CPC 2015 annual report for more details.

Age Range for the Board Members			
Age	41~50 years	51~60 years	61~70 years
Number	0	8	6

Note : The above table shows the statistical result ending on September, 12, 2016.



## Members of CPC Board of Directors

Date : September 12, 2016

Title	Name	Gender	Major Experience and Educational Background
Chairperson	Derek Chen	Male	Double Master in EMBA and Chemical Engineering, National Taiwan University Kaohsiung Deputy Mayor
President, Managing Director	Paul, Lie-Way Chen	Male	MBA, Thunderbird School of Global Management, USA Vice president CPC
Independent Director, Managing Director	Jing-Tang Yang	Male	Ph. D. in Mechanical Engineering, University of Wisconsin-Madison, USA Life Time Chair Professor, National Taiwan University
Independent Director	Chuh-Yung Chen	Male	Ph. D. in Chemical Engineering, National Cheng Kung University Deputy Director, Yen, Tjing-Ling Industrial Technology Research and Development Center
Director	Ching-Hua Lo	Male	Ph. D. in Geology & Geophysics, Princeton University, USA Executive Vice President for Academics & Research, National Taiwan University
Director	Peggy Lin	Female	EMBA, Tulane University, USA Partner in Charge, PCL TransAsia Law Offices
Director	Yaw-Chung Liao	Male	Ph. D. in Agricultural Economics, National Taiwan University Chief Secretary, Council for Economic Planning and Development, Executive Yuan
Director	Mei-Ying, Huang	Female	Ph.D. in Economics, University of Georgia, USA Dean, College of Social Science, National Taipei University
Labor Representative	Chi-Chang Chen	Male	National Kangshan Senior High School Staff in charge of Industrial Relations , General Affairs Office, Refining Business Division, CPC
Labor Representative	Chih-Wei Sun	Male	National Nantou Senior High School Technician, Marketing Business Division, CPC
Labor Representative	Jui-An Yeh	Male	Online College of Public Administration, National Chengchi University Technician, Tsuangukun Oil Field, Department of Oil Production, Exploration & Production Business Division, CPC
Supervisor	Ter-Shing Chen	Male	LL. D., Chinese Culture University Chairperson, Legal Affairs Committee and Advisor, Executive Yuan
Supervisor	Jui-Min Chen	Male	M.S. in Business and Management, Institute of Business & Management, National Chiao Tung University Deputy Minister, Directorate-General of Budget, Accounting and Statistics, Executive Yuan
Supervisor	Ching-Chien Wang	Male	B. S., Department of English Language and Literature, Chinese Culture University Director, Environmental Protection Administration, Executive Yuan

Note : There are still two vacancies in the Board waiting to be filled.

## ► Procedures of Negotiation between the Board and Stakeholders

### Flow Chart for Authorization of Important Negotiation

- (1)CPC listed "detail list of items need to report to the board" to classify the authority between the board and the management. The results of the resolutions proposed by the board must be reported to the board for future reference. If there is any difficulty or any needed adjustment, management should report to the board for permission before working on any actions
- (2)CPC listed "action guidelines for Important events to report to the board and supervisors", which included the definition and the reporting procedures for the variety, regularly needed, and important event.

### Important Negotiation Incidents Authorized by the Board in 2015

- 1 Implement polluted soil contamination control project in Shinkong community, Lingya District, Kaohsiung City with payment based on "land rental"and "pollution compensation" with agreement of following the needed actually needed treatment.
- 2 Prepay the related medical expenses and the relief payment for residents for the liquid resin leakage from Tiger Winter Chemical Carrier in Cianjhen Storage and Transportation Site, 62nd Port.
- 3 To resolve Taiping Creek flooding problem, Taitung county government implemented #1 levee lengthen project for Taitung right bank, which is part of the comprehensive river basin management plan. Taitung county government decided to purchase 8 chunks of land in Kungming section, Taitung and the compensation fee for demolishing three oil depots and the related facilities.
- 4 300 million compensation fee for fishing relief fund, Taoyuan District Fishermen's Association from Taoyuan Refinery was reported to MOEA and authorized by Executive Yuan.
- 5 Compensation fee of "road construction from Chingshuiyan Temple, Linyuan to Taiwan 17 road" from local compensation plan for number 3 Naphtha Cracker renovation was allocated to other 11 more emergent engineering projects in Linyuan District by Kaohsiung City government.
- 6 4 chunks of land owned by Refinery Business Division, with total area of 58,663 m<sup>2</sup>, in Shih-Jia section, Cianjhen District, Kaohsiung City have been lent to Kaohsiung City government to be used as public parking and green land.

## ► Avoiding Conflicts of Interest

In our company management guides, there are regulations related to conflict of interest avoidance. Whenever a Director has a conflict of interest in the voting of a proposition, he or she needs to excuse himself or herself from the voting, and cannot vote on behalf of other directors as well. For the related cases of conflict of interest avoidance in 2015, please refer to CPC's 2015 annual report.

## ► Superb Internal Inspecting

### CPC's Inspecting Mechanism

#### Internal Inspecting

- Setup inspecting office, directly report to the board, and establish annual internal inspecting plan based on company operation target risk evaluation.
- Regularly check and review pitfalls for internal control system and assess operation effectiveness and efficiency.
- Auditing office would provide weakness spotted and the improvement plan to management and keep tracking until it is corrected.

#### External Supervision

- Annually checked by Accountants and Financial Supervisory Commission, Executive Yuan.
- Supervised by State-owned Enterprises Commission, MOEA and National Audit Office.

## 1.3.2 Adhering to Honesty and Ethic Value

### ▶ Anti-corruption Committee

In 2010, CPC sets up anti-corruption committee to enhance and fulfill corruption prevention measures. For the business with higher risk of Taiping Creek flooding problem, it would properly propose resolutions to prevent any misbehavior from happening. Through preventive action, CPC would like to enhance the control and management efficiency to protect our image of honesty.

#### Implementation of Adhereing to Honesty

- ▶ Follow government policy of promoting honesty, and convey the idea to our employees through education and training
- ▶ Focus on corruption cases and check and push for "internal control mechanism for purchasing and the improvement measures"
- ▶ Properly set up related policy like corruption prevention and warning system
- ▶ Establish "monitoring and investigating guides with government ethic personnel" and "abnormal information reporting platform for purchasing and ethic department"



▲ CPC Anti-corruption Committee and the Honesty Promotion Activities, 2015

### ▶ Education and Training for Anti-corruption

All staffs need to take anti-corruption policy and procedure training, and anti-corruption promotion and training is also held annually to progressively promote the practice.

#### 2015 Anti-corruption Activities and Achievements

Planned to hold **6** "government employees apply small amount of money items" and "the difference between profiting and convenience service to the public" with over **700** employees attended.

Large scale Anti-corruption promotion: **27** times  
Staff participation: over **4,000** person-times

Held education and training our staffs for government employees property declaration act with **259** people who needed to declare their property tattended with **98.48%** achieving rate.

## 1.3.3 Sustainable Management and Production

### Sustainable Management Policy for CPC

Follow government regulations and comply with international agreements; Enforce clean production and environmental protection.

Use resources effectively and efficiently, and demand water and energy saving; Emphasize on social responsibility and expand service scope.

Establish environmental protection guides and clarify information revelation procedures; Strive for research and development, explore management paradigm.

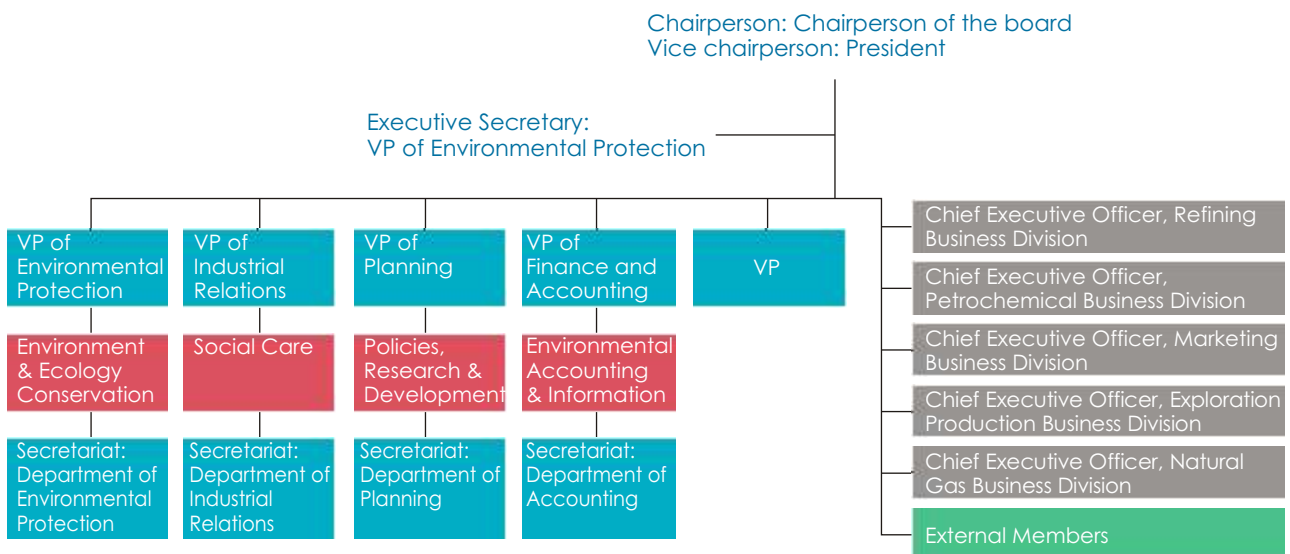
## ▶ Committee for Sustainable Management

Committee for sustainable management was established in 2005, focusing on driving for sustainable management, strategy planning, and goal setting, and divided further into four sub-committees.

### Actions for Committee for Sustainable Management

- ▶ CPC joined WBCSD (World Business Council for Sustainable Development) in 2006.
- ▶ Outside scholars and experts have been invited to be the members since Aug., 2008.
- ▶ External members were added to 6.

## CPC Committee for Sustainable Management Structure

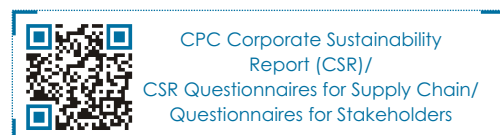


## 1.3.4 Transparency of Information Revelation

Besides following domestic regulations on transparency of information revelation, CPC institute "CPC spokesperson and deputy spokesperson operating procedure" to enhance the transparency and accuracy of information revelation. Important information are posted real time on company web site. All the stakeholder concerned issues are revealed domestically and internationally both in Chinese and in English. It provides stakeholders complete and real time financial and business information.

### Actual Actions for Transparent Information Revelation

- ▶ Regularly update information on the web site
- ▶ Publish annual report
- ▶ Regularly publish CSR
- ▶ Real time information published on the web site and released to the media
- ▶ CPC FB fans and realtime APP

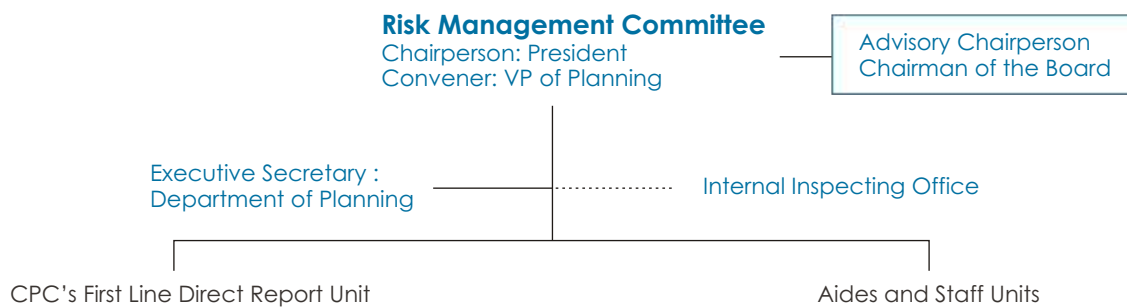


## 1.3.5 Risk Management

### ► Risk management committee

The president is in charge of the Risk Management Committee, and president is the chairperson, and all the top level managers are the directors with Department of Planning being the secretary unit. The committee is in charge of the policy, standard, procedure, and the related issues of risk management for the whole company. The Internal Inspecting office helps the committee check the suitability and effectiveness of CPC's risk management control system.

### CPC Risk Management Organization Structure



### ► Risk Management Operation

In 2015, CPC identified 7 risk items, and all of them are significantly improved with risk value being well within tolerable level.

Identified Risk Items in 2015		
Risk Item	Corresponding Strategies	Effectiveness
Risk of Oil Price Adjustment	<ul style="list-style-type: none"> <li>Establish two way communication platform with the data related to the price change being opened to the public to effectively reduce the doubt about the adjustment.</li> </ul>	<ul style="list-style-type: none"> <li>Follow the adjusting mechanism to change the prices and the information is published in CPC's website to prevent any false reports from misleading the public.</li> <li>Provide CPC's APP for downloading and let consumers check the latest price and gas service information.</li> <li>Promote the gas and diesel price adjusting mechanism 4 times.</li> </ul>
Shortage On Supply of Oil and Gas	<ul style="list-style-type: none"> <li>Diversify oil and gas supply sources and enhance control on the safety amount of storage.</li> <li>Choose politically stable country to work with for oil and gas exploration and production and merger.</li> <li>Promote the investment project of the third LNG receiving terminal.</li> <li>When Taichung LNG Receiving Terminal Phase II Expansion Project is completed, it will be enhanced the day of turnover effectively.</li> <li>To constitute a mutual backup system, the new 35.8-kilometer of 36-inch onshore gas pipeline from Taichung Harbor to Tongxiao is planned and it is estimated to be done by end of 2020.</li> </ul>	<ul style="list-style-type: none"> <li>Actively try to diversify oil sources. CPC are now purchasing oil from Middle East, Africa, Europe, Asia, central Asia and Australia.</li> <li>In 2015, worked on overseas exploration or production development with 25 oil fields in 8 countries and 160,263 kl of oil produced.</li> </ul>

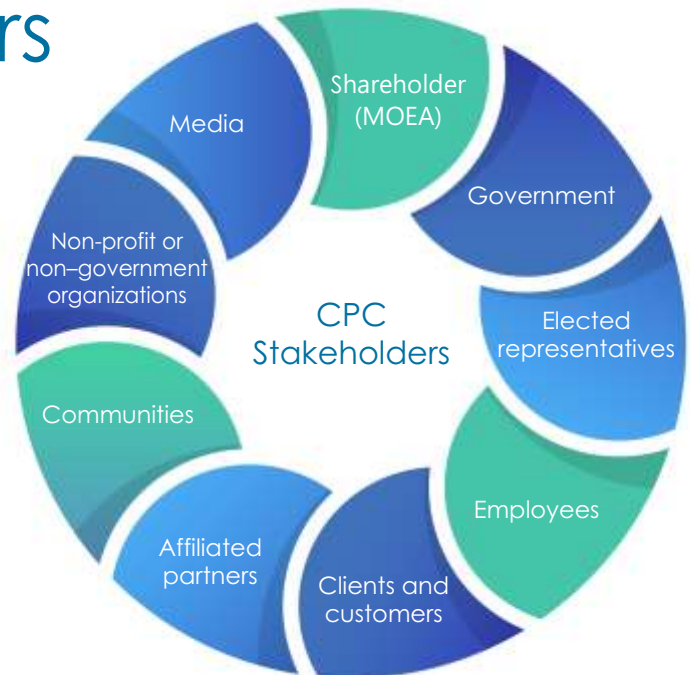
Risk Item	Corresponding Strategies	Effectiveness
Financial Risk	<ul style="list-style-type: none"> <li>▶ Maintain normal operation and rationalize oil and gas price adjustment to avoid operation loss.</li> <li>▶ Focus on risk prevention on the difference between exporting oil price and the oil cost to reduce the oil pricing impact.</li> <li>▶ Increase ratio of long term debt to improve financial stability.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Maintain the long term foreign currency Issuer Default Rating: A+, and Domestic long term rating: AAA. Reduce the debt raising risk.</li> <li>▶ In 2015, issued 13.3 billion long term corporate bonds. Long term debt ratio increased from 64% to 71%.</li> <li>▶ Push for reasonable fuel oil pricing program to make domestic fuel pricing into a more reasonable level and adhering to market price.</li> </ul>
Strengthen Market Shares	<ul style="list-style-type: none"> <li>▶ Elaborating service and enhance service quality to increase customer satisfaction. Focus on customer complaint handling, operation efficiency improving, and marketing and customer problem collecting and analyzing, and provide the information to the related department.</li> <li>▶ Establish better customer relation, push on the customer service management system building and list in details for customer incidents to check, categorize and send to related department for execution. Keep following up to effectively track the handling procedures and the final results.</li> </ul>	<p>2015 Market shares :</p> <p>Gasoline 79.9%</p> <p>Diesel 82.8%</p> <p>Fuel oil 94.3%</p> <p>Aviation oil 59.9%</p>
Safe Work Place Risk	<ul style="list-style-type: none"> <li>▶ Set up the group to check and analyze the risk beforehand.</li> <li>▶ Enforce work place self-checking and outside auditing.</li> <li>▶ Enhance work place safety training, work on emergency response mechanism and strengthen work safety idea to employees.</li> <li>▶ Strengthen contractor self-management and auditing for each level.</li> </ul>	<ul style="list-style-type: none"> <li>▶ The risk index is 1.64 in 2015, greatly reduced from 9.84 in 2014 and 13.35 in 2013.</li> <li>▶ Check for the reasons for work safety hazard events and the handling procedures. If necessary, add or modify the SOP and provide education and training to the staff to enhance work safety management.</li> </ul>
Negative Public Opinion	<ul style="list-style-type: none"> <li>▶ Carefully responding to negative public opinion, and work on real-time clarification to reduce the impact.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Respond on the same day when negative public opinion occurs. Reply in real time to prevent any false information from spreading.</li> </ul>
Employee Aging and Talent Gaping and Shortage	<ul style="list-style-type: none"> <li>▶ Work early and continuously to supplement core staff, and establish the mechanism of passing down the core technology expertise and experience.</li> <li>▶ Enhance management measures and arrange internal education and training to get skillful young employees ready for succession.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Held high level management training 3 times with 115 person-times participating.</li> <li>▶ Held program manager cultivating class with 33 person-times joined.</li> <li>▶ Actively train outstanding young professionals for succession with 3,145 classes held. 71% of them are for expertise training.</li> </ul>





# 1.4 Communicating with Stakeholders

According to AA1000 stakeholder identification criteria, CPC classified that the stakeholders can be clarified as: shareholder(MOEA), government, elected representatives, employees, clients and customers, affiliated partners, communities, non-profit or non-government organizations and media.



## 1.4.1 Communicating with Stakeholders

With transparent and bilateral communication channels, CPC tries to understand the issues that stakeholders are concerned about and actively respond to the requests and use them as the reference to solidify our push for social responsibility.

### Stakeholder Communication Channels

Stakeholders	Communication Channels	
Shareholders (MOEA)	<ul style="list-style-type: none"> <li>▶ Shareholder meetings or extraordinary shareholder meetings (according to the Company Act, the BOD is acting as shareholder)</li> </ul>	<ul style="list-style-type: none"> <li>▶ Public policy meeting participation</li> <li>▶ Official documents communication</li> </ul>
Government	<ul style="list-style-type: none"> <li>▶ Charity events</li> <li>▶ Community communication meetings</li> </ul>	<ul style="list-style-type: none"> <li>▶ Donation and visiting</li> <li>▶ Participating stakeholders' charity events and activities</li> </ul>
Elected Representatives	<ul style="list-style-type: none"> <li>▶ Project/Program reports</li> <li>▶ Coordination or negotiation meetings</li> </ul>	<ul style="list-style-type: none"> <li>▶ On site checking and inspection</li> <li>▶ Personal visits</li> </ul>
Employees	<ul style="list-style-type: none"> <li>▶ Labor union representatives in the Board</li> <li>▶ Listening to and communicating with labor union</li> <li>▶ Oil Communication published monthly</li> </ul>	<ul style="list-style-type: none"> <li>▶ Website to appeal cases and reporting hotlines</li> <li>▶ Mail boxes for the chairperson and the president</li> </ul>
Clients and Customers	<ul style="list-style-type: none"> <li>▶ Annual customer service and satisfaction survey</li> <li>▶ Product quality reports</li> </ul>	<ul style="list-style-type: none"> <li>▶ Website to report pricing mechanism and product service</li> <li>▶ Customer service hotline (1912)</li> </ul>
Affiliated Partners	<ul style="list-style-type: none"> <li>▶ Building related management systems</li> <li>▶ Meeting with suppliers (convened as needed)</li> </ul>	<ul style="list-style-type: none"> <li>▶ Meeting with contractors (convened as needed)</li> </ul>
Communities	<ul style="list-style-type: none"> <li>▶ Holding community activities</li> </ul>	<ul style="list-style-type: none"> <li>▶ Holding communication meetings, and charity activities</li> </ul>
Non-profit or Non-government Organizations	<ul style="list-style-type: none"> <li>▶ Participation with external clubs.</li> <li>▶ Invitation to environmental protection groups for environmental or ecology seminars.</li> <li>▶ Participating environmental group's symposiums or forums, listening to external voices with good communication.</li> </ul>	
Media	<ul style="list-style-type: none"> <li>▶ Through real time press releases, and press conference to reply to media</li> </ul>	

## ► 2015 Real Time Communication Events

Based on the principles of "honestly facing, actively checking and aggressively examining and improving", CPC would issue real time press release to clarify and explain the negative reports from media or events which publics are concerning about or questioning with. Reveal, respond or explain at the first moment. The following lists all the 2015 CPC reported events, and please visit CPC web site for more information. [Http://www.cpc.com.tw](http://www.cpc.com.tw).

Immediately Responded Events in 2015	
Month	Brief Description on the Event
Jan.	▶ Assured CPC B2 biodiesel meets national quality regulation.
Mar.	▶ Explained domestic LPG pricing adjustment. ▶ Restated CPC doesn't offer free towing service on highways.
Sep.	▶ CPC seriously considers gas station safety and would be a good neighbor ▶ Clarified performance review appealing process ▶ Clarified food cost
Oct.	▶ Explained handling process to the pipes in Chunglin Road, Xiaogang District, Kaohsiung City
Nov.	▶ Explained the pipe leakage in Sijhih area

## ► Appealing and Communicating Channels

CPC would take a proactive action to communicate with and reply to outside voice through channels of media, website, union, related meetings and Oil Communication magazine.

## 1.4.2 Major Issue Analysis

### Major Event Handling Process

#### Identify Stakeholders

Through discussion within CSR report editing group and reference to classification from similar business, CPC identifies various stakeholder groups. After discussing with each department head, 9 categories of stakeholders are named.

#### Collect Topics Related Sustainable Management

Based on G4 Sustainability Reporting Guidelines published from GRI and combined with internationally concerned topics and standards, a list of concerned topics are aggregated. Stakeholder representative groups would then screen and choose the initial list of topics.

#### Analyze Critical Topics

Questionnaires and survey are sent to different stakeholders. 261 questionnaires and surveys were done in 2015.

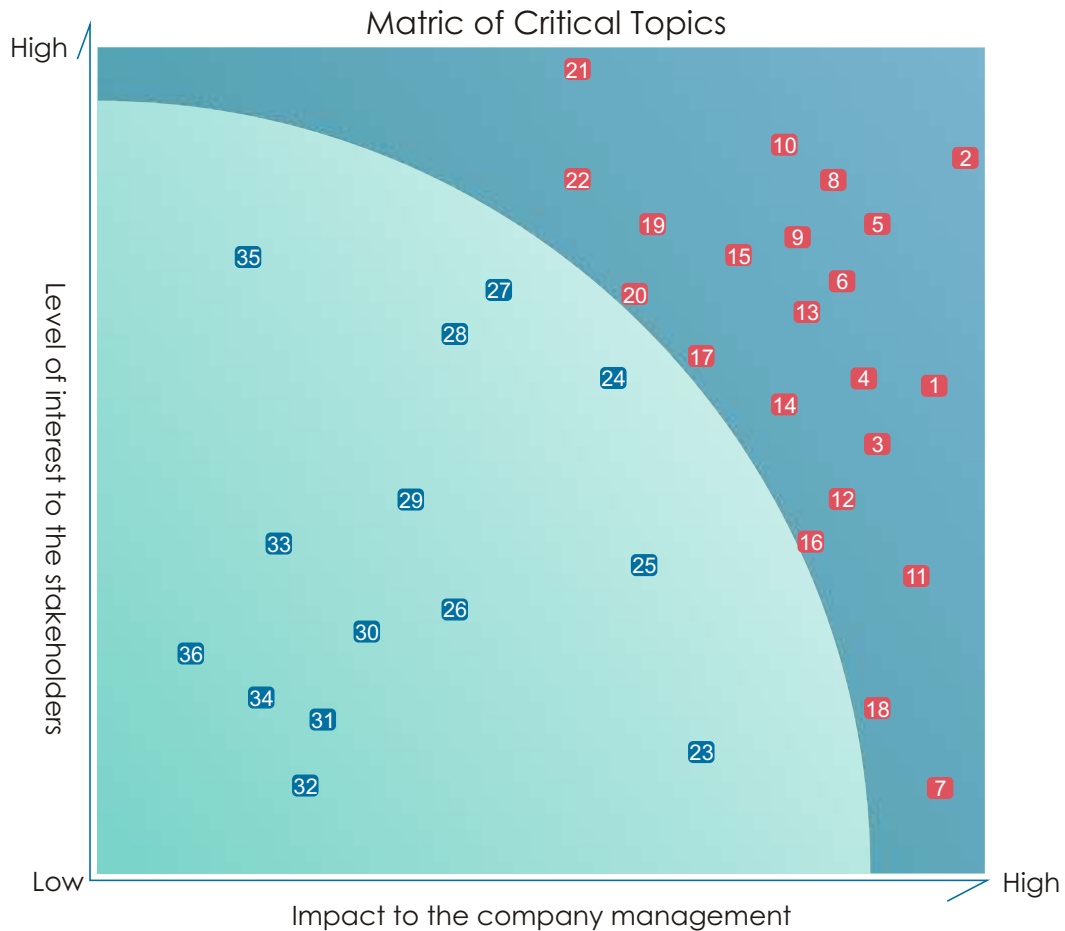
#### Set the Priority for Critical Topics

After further analysis and discussion, 24 critical topics are identified. Considering the weights and scores for each topic under different evaluation guides and the impact to sustainable operation from management point of view, the priority is set and the perspectives for GRI G4 are decided.

#### Check, Examine and Discuss

Based on the priority, the proper CSR chapter for the response and boundary analysis, CPC would enhance the management and reveal the information in our CSR in the future. The critical topics would be reported in details in this report, and the lower priority ones would also be mentioned.

## ► Priority for the Critical Topics Based on Our Analysis



### The Most Critical Topics

- |   |   |
|---|---|
| 1 Customer health and safety                                    | 17 Supplier management                          |
| 2 Labeling of products and service                              | 18 Overall environment protection situation     |
| 3 Products following regulations                                | 19 Appealing mechanism for environment problems |
| 4 Energy management   | 20 Anti-corruption                              |
| 5 Air pollution management                                      | 21 Work health and safety                       |
| 6 Water resources and waste water treatment and release control | 22 Product quality/R&D                          |
| 7 Green product design and service                              |   |
| 8 Greenhouse gas release  |   |
| 9 Waste material management                                     |   |
| 10 Indirect economy impact                                      |   |
| 11 Customer privacy   |   |
| 12 Marketing communication                                      |   |
| 13 Bio-diversity and habitat preservation                       |   |
| 14 Economy achievement  |   |
| 15 Following environmental protection                           |   |
| 16 Local community  |   |

### Concerned Topics

- 23 Public policy
- 24 Education and training
- 25 Market image
- 26 Raw material usage
- 27 Relationship between company and employees
- 28 Employee diversity and equality
- 29 Involuntary and forced labor
- 30 Gender salary equality
- 31 Child labor
- 32 Establishment of employee appealing mechanism
- 33 Anti-competitive actions
- 34 Anti-discrimination
- 35 Supplier evaluation
- 36 Indigenous people right

# 1.5 Outlook of CPC

Despite of the severe change of external environment, CPC lays stress on a balanced development of economic, environment and society. We shall grasp economic, political and energy trend in the light of the strategies of efficient management, international development and competitiveness. Furthermore, we will practically seize the existing oil and petroleum products, petrochemical and nature gas market and keep expanding overseas sales and business scope through joint ventures, toward "a safe, clean and internationally-competitive integrated energy enterprise". We aim to be a sustainable and high quality energy corporation.

## Future Development Strategies and Goals

Strategies and Goals	Description
Seize oil sources by expanding on exploration cooperation	<ul style="list-style-type: none"> <li>▶ Focus on core oil field and expand overseas exploration</li> <li>▶ Aggressively merge oil and gas resources to increase owned reserves</li> <li>▶ Cooperate with private funding broaden exploration and production investment</li> <li>▶ Stabilized domestic production and keep onshore and offshore exploration</li> </ul>
Diversify oil and gas sources to ensure stable supply	<ul style="list-style-type: none"> <li>▶ Simplify oil variety and diversify sources</li> <li>▶ Modify refinery structure to increase productivity</li> <li>▶ Strengthen infrastructure and improve oil and gas transportation network</li> </ul>
Promote integration of refinery and petrochemical and develop high value added products	<ul style="list-style-type: none"> <li>▶ Improve refinery and production structure and extend industry value</li> <li>▶ Invest in joint venture and expand overseas markets</li> <li>▶ Promote high value added investment and strengthen existing petrochemical domain</li> <li>▶ Expand petrochemical base and increase competitiveness</li> </ul>
Exploit brand value and broaden divestment	<ul style="list-style-type: none"> <li>▶ Utilize the logistic advantage and expand to compound business</li> <li>▶ Increase investment in emerging businesses and develop into blue ocean markets</li> <li>▶ Revitalize company assets to increase non-operating income</li> </ul>
Integrate production, marketing, storage and transportation to gain business opportunities	<ul style="list-style-type: none"> <li>▶ Enhance capacity in storage and transportation and increase the dispatching efficiency</li> <li>▶ Increase logistic value and expand diverse trading</li> <li>▶ Seize low carbon trend and promote clean energy</li> </ul>
Strive for innovation, research and development and pursue sustainable development	<ul style="list-style-type: none"> <li>▶ Develop key technologies to support core business</li> <li>▶ Raise R&amp;D capacity and develop owned technologies</li> <li>▶ Develop human resources and cultivate professional talents</li> <li>▶ Integrate remediation resources and build service niche</li> </ul>



# Working Together to Cherish the Earth

# 2

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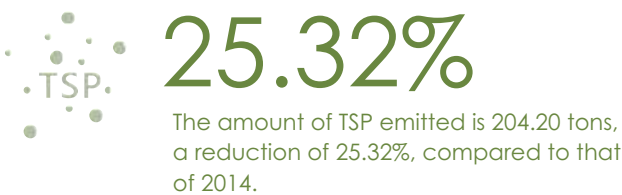
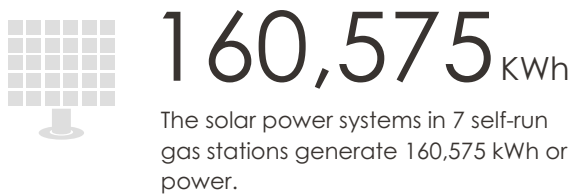
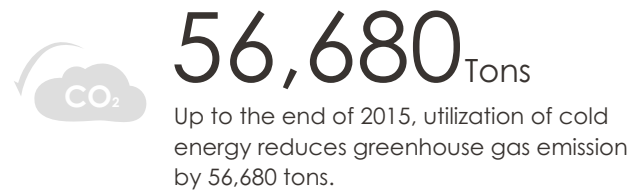
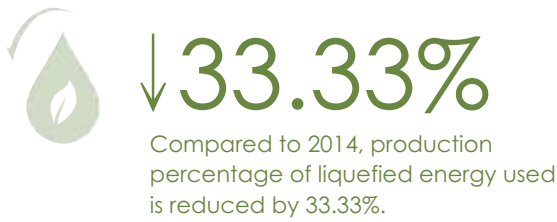
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# 2015 Environmental Achievement





## 2.1 Green Management

### ► Implementation of Environmental Protection Policy

CPC has been actively improving petroleum product quality, pushing for energy saving and carbon reduction, emphasizing on pollution prevention, source reduction and management, strictly abiding by environmental protection regulations, establishing environment checking and monitoring system, working on education and training for environment protection and aggressively researching on technology for environment protection. We pay special attention to corporate responsibility on environment protection and sustainable management and communication with the public. We are striving for becoming an international energy conglomerate that takes account of environment and ecology.

#### CPC Environment Protection Policy

- Adhere to regulation
- Pollution prevention
- Keep advancing and improving
- Social responsibility
- Gear up to international standard
- Energy conservation and waste reduction
- Participate by all employee
- Sustainable development

### ► Green Management Review and Improvement

#### Environmental Violations and Legal Penalties in the Last 3 Years

Year	2013	2014	2015
Controlled value <sup>Note 1</sup>	<17	<19	<23
Number of cases <sup>Note 2</sup>	40	28	22
Amount of fine(NTD)	7.396 million	5.96 million	4.14 million

Note 1 : The controlled value is lower than the average value of middle three of previous five years.

Note 2 : The numbers and the amounts are the ones reported to State-owned Enterprise Commission and it does not include those under appeal

The amount of air pollution violation tickets in 2015 was significantly lower than the amount in 2014. All departments need to emphasize on VOC equipment inspection, maintenance and repair, following up on violation responsibility and achievements evaluation. CPC has to thoroughly investigate the reasons of violations and establish and execute the improvement plans.

#### Continue Environment Improvement Measures

- Quarterly meeting for environmental protection.
- Act on violation responsibility finding and related improvement evaluation.
- Implement continuously on reinforcing the fulfillment of environment protection regulations.
- Emphasize on following waste water emission control action guides.
- Enforce on VOC inspection, maintenance and repair on all equipment.
- Follow on environment protection checking and auditing for each level.

## 2.1.1 Pushing for Green Management

Up to 2015, CPC, which has 21 departments or divisions, have been awarded ISO 14001 certificate for environmental management system and have passed annual checkup by The Bureau of Standards, Metrology and Inspection (BSMI), MOEA.

### Key Points in Pushing for Green Management

#### Environment Protection Auditing

- ▶ Establish environment protection auditing group.
- ▶ Chaired by Director, Department of Environmental Protection.
- ▶ Consists of one representative from each of the following unit: Department of Environmental Protection, Marketing Business Division, Exploration & Production Business Division, Taoyuan Refinery, Dalin Refinery, Linyuan Petrochemical Complex and Refining & Manufacturing Research Institute.

#### Expand Environment Education Activities

- ▶ Expand environment education activities to internal staff and general public.
- ▶ Design the education activities for the elementary school students.

#### Develop Clean Energy

- ▶ Proactively supply environmental friendly gasoline products.
- ▶ Abide by domestic energy related policies.

#### Establish Environment Protection Education and Training

- ▶ Plant the idea of environment protection into education and training.
- ▶ Ask internal staff to take on job training for environment protection and the related professional training.

## 2.1.2 Environment Cost and Benefits

### 2015 Environmental Protection Cost

Item	Dollar amount (million)	Percentage (%)
Company operation cost	27.32	44.84
Suppliers and clients related cost	0.17	0.28
Management activity cost	2.35	3.86
R&D cost	1.07	1.76
Society activity cost	1.31	2.15
Losses and compensation cost	0.02	0.03
Fee and tax	28.68	47.08
Total	60.93	100.00

Because of the added operation from #10 sulfur unit in Dalin Refinery and the new #3 Naphtha Cracker in Linyuan Petrochemical Complex, the electricity usage in 2015 was more than that of 2014.

The increase of waste materials in 2015 was caused by the decommission of Kaohsiung Refinery, of which the catalysts, molecular sieves, clay and sulfur were all dumped out as wastes. The extra amount of waste oil mixture from Taoyuan Refinery also added to the waste amount.

The amount of gasified energy needed is production related, so it would not be analyzed and would not be listed here. All the other raw materials needed and the amounts of wastes discharge in 2015 were better than those of 2014.

## Efficiency Index to the Environment

	Name	2014	2015	Percentage changed (%)
1	Petrochemical raw material intensity petrochemical raw materials used(kl) <sup>Note 1</sup> /petrochemical production amount(kl) <sup>Note 1</sup>	0.083	0.074	↓ 10.84
2	Production percentage of crude oil needed crude oil needed(kl)/ EDC equivalent distillation capacity for refinery(kl) <sup>Note 2</sup>	0.203	0.194	↓ 4.43
3	Production percentage of liquefied energy needed liquidized energy needed(kl) <sup>Note 3</sup> /(equivalent distillation capacity for refinery+ petrochemical production amount)(kl)	0.003	0.002	↓ 33.33
4	Production percentage of gasified energy needed gasified energy needed(km <sup>3</sup> ) <sup>Note 4</sup> /(equivalent distillation capacity for refinery+ petrochemical production amount)(kl)	0.017	0.020	↑ 17.65
5	Production percentage of water amount used water amount used(km <sup>3</sup> )/(equivalent distillation capacity for refinery+ petrochemical production amount)(kl)	0.246	0.221	↓ 10.16
6	Production percentage of electricity used electricity used(kWh)/(equivalent distillation capacity for refinery+ petrochemical production amount)(kl)	10.652	11.157	↑ 4.74
7	Production percentage of greenhouse gas discharged equivalent CO <sub>2</sub> amount discharged(ton)/(equivalent distillation capacity for refinery+ petrochemical production amount)(kl)	0.049	0.045	↓ 8.16
8	Production percentage of waste material amount generated waste material amount(kg)/(equivalent distillation capacity for refinery+ petrochemical production amount)(kl)	0.273	0.318	↑ 16.48
9	Production percentage of waste water discharged wastewater discharged(ton)/(equivalent distillation capacity for refinery+ petrochemical production amount)(kl)	0.09	0.074	↓ 17.78
10	Reduction percentage of wastewater pollutant generated wastewater pollutant generated(kg) <sup>Note 5</sup> /(equivalent distillation capacity for refinery+ petrochemical production amount)(kl)	0.005	0.004	↓ 20.00
11	Production percentage of VOC emitted VOC emitted(kg)/(equivalent distillation capacity for refinery+ petrochemical production amount)(kl)	0.026	0.021	↓ 19.23
12	Production percentage of air pollutant emitted air pollutant emitted(kg)/(equivalent distillation capacity for refinery+ petrochemical production amount)(kl)	0.044	0.039	↓ 11.36

Note 1 : Petrochemical raw materials used=( naphtha+ reformat+ xylene mixture) used, petrochemical production amount is the production amount of ethylene, propane, butadiene and benzene converted into equivalent distillation capacity

Note 2 : EDC(Equivalent Distillation Capacity) To be able to apply to different refinery process, Equivalent Distillation Capacity is used

Note 3 : Liquefied energy needed=( gasoline+ diesel+ fuel oil) needed

Note 4 : Gasified energy needed=( NG+ fuel gas) needed

Note 5 : Wastewater pollutant generated= (COD for the wastewater)+ (SS)+ (Oil) air pollutant emitted= (SOx)+ (NOx)+ (TSP)

# 2.2 Fulfilling Environment Protection

## 2.2.1 Climate Change Risks and Response

### Climate Change Risks to CPC

- 1 Greenhouse gas emission reduction regulations and the corresponding rules, energy tax, carbon tax, and related policies to the greenhouse gas control and management are all impacting management and operation in energy and petrochemical industry.
- 2 Sea level rising caused by greenhouse effect and climate change is affecting operation location, production, transportation and storage, operation management.
- 3 Risks related to new investment and the needed extra load for transportation and storage facility.
- 4 The trend of carbon reduction would stimulate the need for low carbon energy.

### CPC Strategies in Adapting to Climate Change

#### Establish Energy Saving Organization

- ▶ Setup energy saving group to provide the necessary consulting and service to all divisions and departments.
- ▶ Introduce and research on new energy saving technology.
- ▶ Establish energy consumption index, setup improvement goals and enhance achievement monitoring and tracking.

#### Promote Energy Saving and Carbon Reduction

- ▶ Strengthen staff the idea of energy saving and implement energy management for factory energy consumption.
- ▶ Hold checkups for vehicles and for the gas efficiency and promote energy saving behaviors.
- ▶ Promote tree planting and send out seedlings.
- ▶ Promote green building authentication for gas stations.

#### Participate in Government Program on Energy Saving, Carbon Reduction and Climate Change Adaptation

- ▶ Work on expansion of Taichung LNG receiving terminal and start investment plan for construction of the third LNG receiving terminal.
- ▶ Engage in preliminary trial plan on CCS (Carbon Capture and Storage).
- ▶ Check the company greenhouse emission amount annually.

#### Improve Refinery Structure

- ▶ Adopt Best Available Control Technology (BACT) to improve refinery structure, increase energy efficiency and reduce the impact to the environment.
- ▶ Introduce advanced energy saving technology and the latest refinery processing equipment, and enhance the recycling of fuel gas, mid-to-low pressure vapor and water resources.

#### Complement and Integrate with Regional Energy and Resource

- ▶ Work with factories in the nearby area to support each other on wasted heat energy recycling and purchase the steam produced by China Steel to reduce energy usage.

### Boost Research on Green Energy Related Technology

- ▶ Invest in renewable and green energy related technology research and development, for example, photovoltaic, biomass energy, LED lighting, biomass material.

### Exchange Ideas with International Organizations

- ▶ Be a member of World Business Council for Sustainable Development (WBCSD).
- ▶ Participate Conferences of the Parties (COP) to learn climate change impact and carbon reduction solutions and act on carbon reduction plans.

### Increase NG Transportation and Storage Capacity

- ▶ Expand the transportation and storage facilities in Yong-an and Taichung LNG harbors.
- ▶ Add land based NG pipes.

### Promote Biofuel Usage

- ▶ Have done the research for biofuel generated from waste cooking oil and have started on adding the generated biofuel to fuel oil since Jan. 2015.
- ▶ Keep supplying and promoting E3 alcohol gasoline in 14 gas stations in Taipei and Kaohsiung City.

## 2.2.2 Energy and Electricity Saving

### Energy and Electricity Saving Measures

- ▶ Enhance energy efficiency monitoring and control for all production units and all power hungry facilities.
- ▶ Push for energy saving plan for all factories.
- ▶ Regularly hold energy saving achievement tracking meeting for the new Residue Fluid Catalytic Cracking (RFCC), alkylation and units in the new #3 Naphtha Cracker.
- ▶ Actively engage in R&D energy saving technology and introduce new energy saving technology for Refining & Manufacturing Research Institute and Green Technology Research Institute, for example, heat preservation for heating furnaces, furnace tubes cleaning, anti-radiation materials painting on heating furnaces and crackers, and energy saving for heating tubes, permanent-magnet motors and big compressors.
- ▶ Follow the "Energy saving goal setting and implementation plan" from Bureau of Energy, MOEA, and ask for those who with power consumption bigger than 800 KW to achieve the energy saving goal of more than 1% and total energy saving of 4% starting from 2015.

### Major Achievement on Energy Saving

Major Energy Saving Measures	Energy Saved (equivalent oil amount in kl)	Money Saved (in 10 thousands)	CO <sub>2</sub> Emission Reduced (in ton)
Renewal of Manufacturing Equipment	241,712	339,892	732,991
Facility Refurbished or Improvement	129,593	188,488	392,074
Recycling the Heat and Fuel Gas in Manufacturing	166,894	276,158	506,360
Refinement of Manufacturing Process	71,570	211,633	215,554
Improvement of Energy Management	150,412	89,607	418,361
Total	760,181	1,105,777	2,265,341

## Major Energy Saving Program

Major Energy Saving Program Item	Achievement (equivalent oil amount in kl )
Recycle the exhaust heat from fuel gas in heating furnace, naphtha cracker, and boiler.	85,920
Recycle the exhaust heat from crude oil distillation unit, cracking unit, refining unit and boiler to be used as fuel gas.	81,232
Maintain and repair the wall and radiation coating of the heating furnace and naphtha cracker, replace fire-retardant fabrics, remove tar and coat with high-temperature paints.	76,755
Replace the expander for the residue oil conversion unit	52,445
Replace heat exchangers	36,994
Integrate and improve mid-to-low pressure vapor for the factory	32,391
Replace high performance catalyst	26,842
Clean pipes for heating furnaces and boilers	24,455
Improve the turbine motor operation for power unit catalytic reforming unit and cracker	15,791

### ► Energy Consumption and Consumption Level of the 4 Factories

Energy Consumption for the Last 3 Years		unit: GJ=10 <sup>9</sup> J			
Year	2013	2014	2015		
Direct energy Consumption	Natural gas	2.33*10 <sup>7</sup>	1.54*10 <sup>7</sup>	1.47*10 <sup>7</sup>	
	Fuel gas	4.86*10 <sup>7</sup>	5.50*10 <sup>7</sup>	5.47*10 <sup>7</sup>	
	Low BTU fuel gas	6.73*10 <sup>6</sup>	5.18*10 <sup>6</sup>	5.76*10 <sup>6</sup>	
	LPG	0.63*10 <sup>3</sup>	0.92*10 <sup>6</sup>	1.00*10 <sup>6</sup>	
	NC bottom oil	2.93*10 <sup>6</sup>	1.16*10 <sup>6</sup>	1.69*10 <sup>3</sup>	
	Low sulfur fuel oil (0.5 wt% <sub>s</sub> )	1.50*10 <sup>7</sup>	0.89*10 <sup>7</sup>	0.65*10 <sup>7</sup>	
	Carbon residue	1.68*10 <sup>7</sup>	2.10*10 <sup>7</sup>	1.56*10 <sup>7</sup>	
	Total heating value	1.13*10 <sup>8</sup>	1.07*10 <sup>8</sup>	0.98*10 <sup>8</sup>	
Indirect Consumption	Electricity purchased	1.51*10 <sup>7</sup>	1.50*10 <sup>7</sup>	1.55*10 <sup>7</sup>	
	Steam purchased	1.53*10 <sup>6</sup>	1.61*10 <sup>6</sup>	0.76*10 <sup>6</sup>	
	Total heating value purchased	1.66*10 <sup>7</sup>	1.67*10 <sup>7</sup>	1.62*10 <sup>7</sup>	
Total	1.30*10 <sup>8</sup>	1.24*10 <sup>8</sup>	1.14*10 <sup>8</sup>		

Note 1: Energy consumed = fuel used \* per unit thermal value of the fuel

Note 2: Per unit thermal value for fuel: (1) NG 8,900 Kkcal/KS (2) Fuel gas 9,000 Kkcal/KS (3) Low BTU fuel gas 6,000 Kkcal/KS (4) LPG 6,635Kkcal/KL (5) NC bottom oil 9,700Kkcal/KL (6) Low sulfur fuel oil (0.5wt%<sub>s</sub>) 9,200Kkcal/KL (7) Carbon residue 9,580Kkcal/TON (8) Electricity purchased 2,180Kkcal/MWH (9) Steam purchased 724Kkcal/TON

Note 3: 1 kcal=4,184 joule



### Energy Consumption Percentage for the Last 3 Years – Refinery

Year	2013	2014	2015
Amount of Heat (GJ)	1.03*10 <sup>8</sup>	0.87*10 <sup>8</sup>	0.72*10 <sup>8</sup>
Refinery Amount (KL)	1.45*10 <sup>8</sup>	1.20*10 <sup>8</sup>	1.06*10 <sup>8</sup>
Energy Consumption Percentage -Refinery(GJ/KL)	0.710	0.721	0.683

Note : Refinery amount is equivalent distillation capacity (EDC)

### Energy Consumption Percentage for the Last 3 Years - Petrochemical

Year	2013	2014	2015
Amount of Heat (GJ)	0.27*10 <sup>8</sup>	0.37*10 <sup>8</sup>	0.40*10 <sup>8</sup>
Total Production Amount (TON)	1.34*10 <sup>6</sup>	1.93*10 <sup>6</sup>	2.20*10 <sup>6</sup>
Energy Consumption Percentage (GJ/KL))	20.3	19.4	18.3

Note : Total production amount is the total amount produced for ethylene, propylene, butadiene, benzene, para-xylene and ortho-xylene.

## 2.2.3 Greenhouse Gas Reduction Management and Achievement

CPC annually implements the inventory and registry on the "Taiwan National Greenhouse Registry" platform of greenhouse gas emission within the operational boundary. To make our greenhouse gas emission result public, CPC discloses our greenhouse gas emission situation over the years in our annual CSR report.

### Scope 1

#### Directly Greenhouse Gas Emission

- ▶ Electricity, heat, steam or any other emitted greenhouse gas from petrochemical production.
- ▶ CPC owned or controlled direct emission sources such as stack emission, process emissions and transportation emissions.

### Scope 2

#### Energy Indirect Greenhouse Gas Emission

- ▶ Purchased electricity, heat, and steam or other indirectly emission from greenhouse gas.



The Amount of Greenhouse Gas Emitted for the Last 3 Years		Unit: ten thousand tons		
Year	2013	2014	2015	
Scope 1	796	802	697	
Scope 2	113	113	112	

Note : Factors for greenhouse gas emission:(1)Electricity: 2013 emission factors (Bureau of Energy);(2)Fuel gas, glare gas: examination and analysis results from all units;(3) Fuel oil, diesel, LPG, gasoline, biodiesel and NG: IPCC 2006 + thermal value (Bureau of Energy);(4) Septic tank: IPC 2006 + characteristics of Taiwan waste water;(5)acetylene: calculated by mass balance;(6) sludge: analysis of the carbon content in sludge.

Greenhouse Gas Reduction Achievement for the Last 3 Years			
Year	2013	2014	2015
Number of Projects	21	17	21
Amount Reduced (thousand tons/year)	20.8	32.3	19.2

Note 1 : The reduction results listed are the equivalent CO<sub>2</sub> amount converted from the Global-Warming Potential (GWP) of the Second Assessment Report – IPCC (1995)

Note 2 : GWPs: It is a relative measurement of how much heat does a greenhouse gas trap compared to CO<sub>2</sub> on the base of the same mass in the atmosphere.

## Future Carbon Reduction Actions

- ▶ To comply with the “Greenhouse Gas Reduction and Management Act” of R.O.C. and Taiwan’s “Intended National Determined Contributions, INDC”, CPC has planned the energy-efficiency promoting programs for our refineries and petrochemical plant.
- ▶ Taoyuan Refinery, Dalin Refinery, Linyuan Petrochemical Complex have passed Bureau of Standards, Metrology and Inspection (BSMI), MOEA, ISO 14064-1 certification.
- ▶ Both Taoyuan Refinery’s heating furnaces promoting plan and Dalin Refinery’s high radiation interior surface coating of heating furnaces have passed ISO 14064-2 certification.



## 2.2.4 Air Pollution Prevention

The major air pollutants from CPC are sulfur oxides, nitrogen oxides, particles and volatile organic compounds. The emitting sources are flare, storage tanks, equipment component and loading operations. To comply with the law and the regulation of Environmental Protection Administration, CPC establishes "The fugitive emission of equipment improvement group." CPC would like to keep track of achievement and effectiveness through air pollution control meetings and to get ahold of the actual improvement situation for every factory and facility.

### Air Pollution Prevention and Control Measures

#### Choose Cleaner Fuel

- ▶ Choose fuel gas (clean fuel) for new processing units.
- ▶ Increase gaseous fuel usage percentage for existing units, including NG, hydrogen, LPG and fuel gas to reduce the making and emission of pollutants.

#### Improve Operation

- ▶ Improve combustion technology and increase combustion efficiency through all kinds of practice.
- ▶ Adjust process parameters and control the system under optimal control parameters.

#### Improve End-of-Pipe Treatment

- ▶ Particles: Add Electrostatic precipitators or cyclone collectors.
- ▶ Sulfur oxides (SO<sub>x</sub>): Install Flue Gas Desulfurization (FGD) equipment.
- ▶ Nitrogen oxide (NO<sub>x</sub>): Use selective catalytic reduction (SCR).
- ▶ VOC: Institute non-leakage devices with condensation, absorption and membrane separation treatment.

#### Set up Advanced Technology and Equipment

- ▶ Employ advanced technology and high efficiency heat exchange equipment and systems for new reactors.
- ▶ Introduce latest processing integration and control systems.
- ▶ Apply high elimination rate facilities and low leakage equipment.

#### Waste Gas Recycle

- ▶ Check, maintain and repair all pressure control valves and safety valves.
- ▶ Utilize Flare Gas Recovery System (FGRS) in the future.

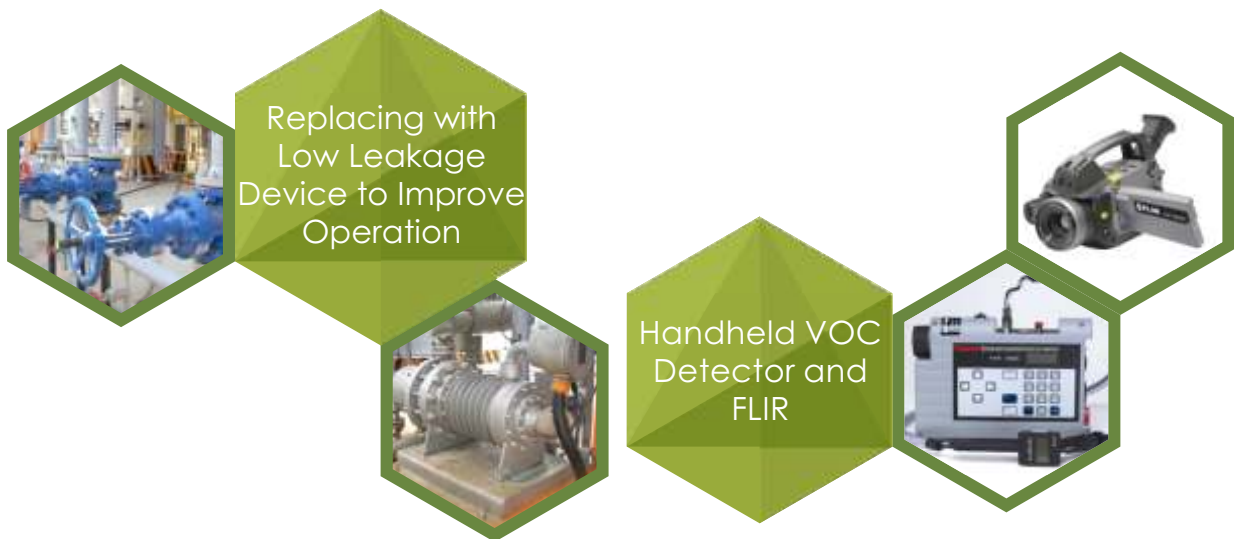
Air Pollutants Emission for the Last 3 Years			Unit: ton
Year	2013	2014	2015
Total Suspended Particles (TSP)	472.20	273.45	204.20
Oxysulfide (SO <sub>x</sub> )	3,624.90	2,559.82	2,842.90
Nitrogen oxide (NO <sub>x</sub> )	6,168.23	5,487.21	3,892.95
VOC	3,083.66	3,326.44	2,642.68

Flue Gas Emission Quality			
	Emitted Particles	Quality in 2015	National Standard
SOx(ppm)	Gaseous Fuel	<50	100
	Liquid Fuel	<250	300
NOx(ppm)	Gaseous Fuel	<100	150
	Liquid Fuel	<200	250
TSP(mg/Nm <sup>3</sup> )	Depends on Amount Displaced	5-100	<25-500

### ► Hydrocarbon Burning and Fugitive Emission

The fugitive emission of VOC isn't easy to control for petrochemical industry, and thus Department of Environmental Protection sets "VOC checking, monitoring and management procedures" for our devices and equipment. All factories would follow the procedures to carry out improvement for their facilities, hold quarterly meeting to check and review the results. All units are asked to fulfill the needed jobs of checking, monitoring, maintaining and repairing.

1. Perform checking according to VOC leakage probing procedures published by Environmental Protection Administration and use FLIR to help with the leakage checking.
2. Use handheld VOC detector to actively check for leakage right after changing operation, repair and replacement of the equipment.
3. Repair, replace or remove the leakage component and increase the service and maintenance ratio.



### ► Control the Emission for Flare Burner

To reduce flare burner emission and to abide by the regulations, CPC actively works on the following measures for refineries and petrochemical factories.

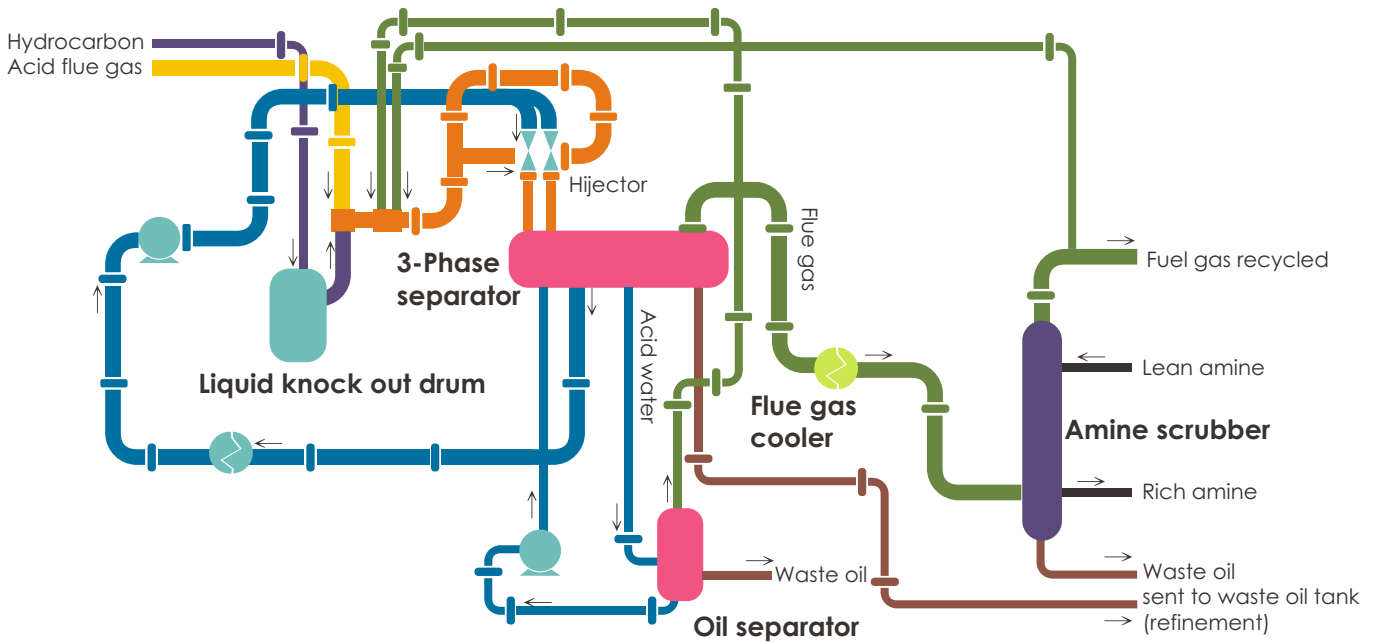
#### Engineering

Purchase equipment to improve flare gas emission, and install recycling devices to reduce emission. From July 1, 2014, unless approved by higher authority, under normal operation, waste gas would not be allowed to be treated by flare burners.

#### Operation

Factories would need to establish self-control mechanism through checking, investigating and adjustment. If there is any anomaly, it needs to be immediately checked and fixed. Control from the source is to reduce emission.

## Flow Diagram of Flare Recycling System



## 2.2.5 Water Resources Management

CPC is actively pushing for industrial water recycling and has already implemented several water saving and waste water recycling improvement measures. Water for Taoyuan, Dalin and Kaohsiung refineries comes from Fengshan Reservoir and Shimen Reservoir of Taiwan Water Corporation. Water usage for all four factories needs to be evaluated and authorized by Taiwan Water Corporation for usage impact before it is sent to CPC. Since the usage impact is analyzed beforehand, CPC's water usage would not have any effects.

### ► Water Resource Usage

Amount of Water Used for the 4 Factories in the Last 3 Years									Unit: km <sup>3</sup>
	2013			2014			2015		
	Daliao pumping station	Purchased	Total	Daliao pumping station	Purchased	Total	Daliao pumping station	Purchased	Total
Total	16,472	29,782	46,254	10,767	32,841	43,608	7,028	32,022	39,050

Note: The four factories are Taoyuan, Dalin and kaohsiung refineries and Linyuan petrochemical complex.



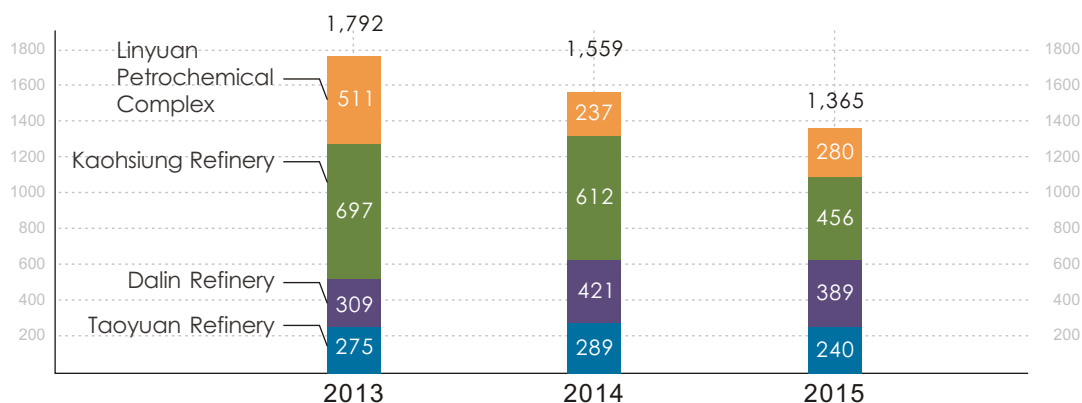
## 2.2.6 Waste Water Prevention and Treatment

CPC established waste water prevention and treatment measures for facilities in Taoyuan, Dalin, Kaohsiung, and Linyuan to prevent the waste water generated from production from impacting the environment.

Prevention and Treatment Measure	
Factory	Measures
Taoyuan Refinery	<ul style="list-style-type: none"> <li>Special waste water, oily waste water, mineral salt waste water and domestic sewage are sent to waste water treatment plant and then released to Nankan River after being processed.</li> <li>The assimilative capacity of the river can absorb the treated water and the water fits the national standard effluent quality.</li> </ul>
Dalin Refinery	<ul style="list-style-type: none"> <li>Special waste water, oily waste water, mineral salt waste water and domestic sewage are sent to oil separator and then to secondary waste water treatment plant. After that, it is released to ocean through the drainage pipes of Combined Wastewater Treatment Plant in Linhai Industrial Zone.</li> </ul>
Kaohsiung Refinery	<ul style="list-style-type: none"> <li>Special waste water, oily waste water, mineral salt waste water and domestic sewage is sent to waste water treatment plant.</li> <li>After being properly processed, it would be released to drainage pipes set up by Industrial Development Bureau at Oyster Village and then sent to the ocean.</li> <li>There are two 50,000 kiloliters surge tanks to buffer the excessive rain whenever there are thunderstorms to prevent the excessive rain water from being directly released to Houjin River.</li> </ul>
Linyuan Petrochemical Complex	<ul style="list-style-type: none"> <li>Special waste water, oily waste water, mineral salt waste water and domestic sewage is sent to primary waste water treatment plant and some of it is then sent to secondary biological treatment.</li> <li>The primary treated waste water and some of the secondary biological and high level treated waste water which meets the national effluent standard is recycled back to the factory.</li> <li>The secondary biological treated waste water which meets the national standard effluent standard is sent to waste water treatment plant in Linyuan Industrial Zone and then released to the ocean.</li> <li>Set up high level biological treatment and recycling facilities which can process 6,000 tons every day and produce 3,000 tons of recycled water. After meeting the national effluent standard, it is recycled back to the factory.</li> </ul>

### Waste Water Effluent Amount for the 4 Factories in the Last 3 Years

Unit: ten thousand tons



## Measures for Water Saving and Waste Water Recycle and Reuse

### Reduce the Loss of Cooling Water

- ▶ Renew water tray and honeycomb water deflector to decrease the cooling water lost in evaporation from 0.1% to 0.003%.

### Improve Water Usage for Furnace

- ▶ Use water purifier to generate pure water and increase water amount generated every cycle and also reduce the amount of waste water.
- ▶ Setup electro dialysis reversal (EDR) equipment for raw water to improve the water quality and increase the amount of processed water from ion-exchange resin.

### Improve Firefighting Water Usage

- ▶ Use firewater to smash the water surface to control the fungus growth.

### Reduce Water Usage in Manufacturing

- ▶ Set up monitor and control systems for cooling water and deflector to check the quality of condensate.
- ▶ Utilize electromagnetic valves to control the recycling and the recycled water is used as replenished water for the water towers.
- ▶ Use the deaeration tank to recycle low pressure steam and recycle the heat and condensate.

### Recycle and Reuse Drainage Water

- ▶ Waste water from manufacturing is sent to joint sewage treatment plant in the Industrial Zone. Some of it can be recycled and reused for sludge dehydrator or incineration plant.
- ▶ Public waste water goes through sedimentation and sand filter and then some of it can be used to wash gutters or tanks.

## Achievement of Recycling Waste Water from Manufacturing

Year	2013	2014	2015
Raw water replenished (in 10 thousand tons)	4,362	3,284	5,248
Amount of water recycled	4,523	6,208	6,744
Recycle percentage(NTD) <sup>Note1</sup>	50.91	65.40	40.75 <sup>Note2</sup>

Note 1 : Recycle percentage = amount of water recycled ÷ (raw water replenished + water recycled)

Note 2 : 2015 recycle percentage is lower than that of 2014. The main reason is during the 2015 water rationing period, water used to support outside usage is dramatically increased , causing the reduction of recycled water

## 2.2.7 The Prevention and Remediation of Soil and Groundwater Pollution

### Improvement Solution for Polluted Sites

#### Controlled or regulated listing sites

- ▶ Require related department to propose response measure, control and remediation plans.
- ▶ Investigate and remedy the contaminated sites, according to the plans authorized by competent authorities, scholars and experts.

#### Non-controlled sites

- ▶ Enhance the monitoring function of groundwater, monitoring wells and soil vapor monitoring wells.
- ▶ Require all departments to follow "soil and groundwater pollution prevention and improvement procedures" in CPC and implement the procedures.
- ▶ If there is any soil and groundwater contamination found in the field domains, the related departments will set up plan immediately and prepare budget for contamination remediation.

### Controlled sites in 2015

Type	Site
Response Measure Sites	▶ CPC Chengkung site, Kaohsiung, Siwei gas station and Xiangshan gas station.
Pollution Control Sites	▶ Lingyaliao 7 site, Shinkong community, the northern product warehouse of lubricants business division (the polluter: China Petrochemical Development Corp.), Kaohsiung Port Terminal, sites outside of east gate in Kaohsiung refinery (includes 6 areas in Houjin), Wucailin landfill site, factory area of Kaohsiung refinery, 53.5km in 15 provincial highway, Beipu and Hsinchu oil depot and gas stations in Wugu, Neihu, Zhongxiao E. road, Linsen N, road Longgang, Luzhu and Guangming.
Pollution Remediation Sites	▶ Lingyaliao Temauernan, Linyuan petrochemical factory, 9 sites in Kaohsiung refinery, Land number 837 in Kaohsiung refinery, and area F in Dalin refinery.

### Cancellation of the Controlled or Regulatory Listing Sites in 2015

Type	Cancellation Controlled or Regulated Listing Sites
Response Measure Sites	9 <sup>th</sup> road of area B in Dalin refinery, Yuli and Tsautun gas stations.
Control Needed Sites	▶ The Panacea God temple outside of Kaohsiung refinery.
Pollution Remediation Sites	▶ Changrong Road gas station in Xinying District, Tainan.

## 2.2.8 Waste Material Management

Amount of Drilling Mud Treatment in 2015			Unit: ton
Oil field	Type drilling mud	Amount treated	
Domestic Onshore Well Workover	well 147 in Tshuangkun	Water-based drilling mud	120.65
	well 134 in Tshuangkun		150.63
	well 106 in Tshuangkun		281.60
Domestic Onshore Drilling	well 2 in Tahoti	Water-based drilling mud	1,947.56
Domestic Onshore Oil-based Well Workover	well 1 in Beiliao	Oil-based drilling mud	129.87
	well 112 in Tshuangkun		

Note 1 : The drilling mud listed here are from Exploration & Production Business Division and doesn't include the one from the 4 factories

Note 2 : Drilling dusts and mud containing oil from drilling are coded as D-0903 waste material, not oil ones are coded as D-0499 and all of them are appointed to qualified treatment company to be processed with incineration or landfilling

### Amount of Treated Wastes for 4 Factories in 2015

#### Hazardous Wastes

Treatment Method	Solidification	Incinerated	Physically treated	Others
Amount(ton)	61.14	872.329	0	0.084
Percentage	0.10%	1.48%	0.00%	<0.01%

#### General Wastes

Treatment Method	Chemically treated	Physically treated	Landfill	Incinerated	Recycled	Others
Amount(ton)	3,076.71	890.08	6,588.82	27,707.92	9,840.51	9,952.8
Percentage	5.22%	1.51%	11.17%	46.97%	16.68%	16.87%

### Achievement for Recycling Wastes for the 4 Factories

Year	2013	2014	2015
Amount of Wastes Treated (ton)	56,628.6	62,498.1	58,990.4
Amount of Wastes Recycled (ton)	20,767.6	21,310.9	9,840.5
Recycle Percentage (%)	36.67%	34.10%	16.68%

Note : Waste recycle percentage = amount of wastes recycled ÷ amount of wastes treated

## Recycled Wastes

Category	Recycled Material	Recycled Percentage
Nickel from Nickel-on-alumina Catalyst (LD 241) Waste	Nickel sulfate related products	100%
Catalyst Waste	Replacement products for pottery, ceramic tiles, cement or hearthstone ashes	100%
Waste carbon	Activated carbon	100%

## 2.2.9 Hazardous Material Management

### ► Poisonous Chemical Material Management

#### Poisonous Chemical Material Management Methods

- ▶ For category one to three hazardous materials, when the amount is larger than mass amount operation, the emergency handling plan needs to be sent to authority.
- ▶ The plan needs to include the forming of emergency task force, commanding system and inform and communication mechanism and prepare the emergency response equipment.
- ▶ There must be two uninformed tests and for overall practice or drill annually for each plan.
- ▶ Work with local environmental protection department for emergency response drill.

#### The Implementation of Drill for Emergency Response of Toxic Substance



## 2.2.10 Emphasizing on Bio-diversity

Under the idea of co-existing with greening, CPC has been emphasized on biodiversity and is doing tree planting and green manufacturing as well as environmental and bio monitoring to take care of humanity, natural environment and sustainable corporation development at the same time.

### ► Biodiversity for Undersea Pipes

Kuansin algal reef seashore was designated as wild animal protection area by Taoyuan city government. CPC's ashore area for the undersea pipes is assigned as buffer zone and would keep working on and ensure the ecological environment protection for areas around the pipes.



## The Impact to the Algal Reef Caused by the Construction of the Pipes

Forestry Section, Department of Agriculture, Taoyuan, went to inspect Kuansin algal reef in Sep., 2015 and found that the construction has damaged algal reef and coral reef. After evaluation, it's really tough to get the hermatypic coral to grow along with the original algal reef and coral reef.

## Follow on Measures

- ▶ CPC convened coordination meeting and expressed sorry for the damage caused by the design and construction.
- ▶ For this accident, CPC promised the following
  - Promised to inform related department of city government whenever there is any construction and communicate with local groups.
  - CPC would send daily patrol to check in the nearby area and would inform Taoyuan City government if any algal reef sabotage activity is found.
  - Continue on supporting the algal reef research and promote reef conservation.

## ▶ Thorough Monitoring System for Water Quality

In Dalin refinery and Taoyuan refinery, for area around the undersea pipe and buoy, CPC built water quality monitoring system. Oil leakage monitoring systems are also built for land pipes. There is no abnormal situation in 2015.

## Protection Measures for Waters Around Factories

- ▶ CPC has kept bio-monitoring for Yongan north levee construction, the 3<sup>rd</sup> LNG receiving terminal construction, storage tank expansion for Kinmen and Matsu sales and marketing centers, and downstream area of White Dragon creek.
- ▶ Youn-an factory would keep quarterly monitoring and checking for bio-environment inside and outside Yong-an harbor.
- ▶ Taichung factory would keep quarterly checking and monitoring for bio-environment and fishing resources in south turning basin, north and south navigation channels and two areas of 500 meters away from effluent in Taichung harbor.
- ▶ Monitor and check bio-environment in areas around undersea NG pipe from Taichung to Tatan.

## ▶ Tree Planting and Home Greening

### Tree Planting Achievement

- ▶ Total of 300 thousand trees are planted in Gaoping special zone park, Fenghuang mountain, and Kaohsiung Metropolitan Park, Kaohsiung City, vacant areas around gas stations, areas around Penghu factory and CPC factories.
- ▶ The total area for tree planting since 2008 has been over 140 hectares.



CPC Held Afforestation and Greening Homeland Activities in March 2015

## 2.2.11 Enhancing Environment Evaluation

CPC regularly invite professional institution and academic groups to do environmental quality survey and investigation to evaluate the environment pollution caused by our business activities. CPC would like to minimize the impact and provide a clean surrounding area to the local community.

2015 Environment Evaluation			
Environment Evaluation	Impact	Prevention Measure	Action to Ease Up
Soil and Terrain	<ul style="list-style-type: none"> <li>▶ Land subsidence caused by ground-water pumping</li> <li>▶ Soil contaminated by oil</li> </ul>	<ul style="list-style-type: none"> <li>▶ Improve factory gutter.</li> <li>▶ Use common underground pipes for new ones and move underground pipe up to the ground.</li> <li>▶ Abolish oil pit and build sealed storage tanks.</li> <li>▶ Set up groundwater monitoring systems.</li> <li>▶ Monitor and evaluate land substance in Daliao water source station Kaohsiung.</li> </ul>	Reduce Groundwater pollution
Hydrology and Water Quality	Produced Water Contamination	<ul style="list-style-type: none"> <li>▶ Modernize and rebuild sewage treatment plant</li> <li>▶ Move underground pipes up</li> <li>▶ Complete oil recycling system</li> <li>▶ Build more groundwater monitoring systems</li> <li>▶ Treat sewage pipes with anti-leakage cement</li> </ul>	<ul style="list-style-type: none"> <li>▶ Improve separation efficiency on oil and water separation pool</li> <li>▶ Recycle and reuse waste water</li> <li>▶ Set up torrential rain pollution prevention system</li> <li>▶ Build rain and sewage water separation system</li> <li>▶ Adopt the care of Houjin Creek</li> </ul>
Air Quality	Fix the total amount of suspended particles(TSP), oxysulfide (SOx), nitrogen oxide (NOx), and volatile organic compounds (VOC)	<ul style="list-style-type: none"> <li>▶ Fit furnaces with Low NOx Burner</li> <li>▶ Use low carbon, low sulfur fuel</li> <li>▶ Replace cone top tanks with floating roof tanks</li> <li>▶ Add oil/gas recycle device to filling and packaging equipment</li> <li>▶ Enhance checking and monitoring of the equipment and device</li> <li>▶ Use sealed and sealed sampling system for API/CPI, and replace with double axis sealed to pumps</li> </ul>	<ul style="list-style-type: none"> <li>▶ Add electrostatic dust collector</li> <li>▶ Improve denitrification and desulfurization equipment</li> <li>▶ Set up washing tower</li> <li>▶ Improve service and maintenance on equipment</li> </ul>
Noise and Vibration	Operation from rotating machines, noise and vibration from steam pipes, and exhaust burning towers	<ul style="list-style-type: none"> <li>▶ Add noise reduction device to high noise equipment</li> </ul>	<ul style="list-style-type: none"> <li>▶ Move exhaust burning tower</li> <li>▶ Set up acoustic barrier</li> </ul>
Waste	Catalyst waste and oil sludge	<ul style="list-style-type: none"> <li>▶ Set up oil sludge incineration plant and close landfill sites</li> <li>▶ Categorize, sort and separate waste</li> </ul>	<ul style="list-style-type: none"> <li>▶ Request EPA certified company to do recycling for catalyst waste</li> </ul>

Environment Evaluation	Impact	Prevention Measure	Action to Ease Up
Transportation	Tankers, transportation and construction trucks, and commute buses affecting traffic	<ul style="list-style-type: none"> <li>▶ Hold or sponsor local traffic safety education activity</li> </ul>	▶ Help direct traffic with security guards
Industrial Safety	Oil or gas leakage, fire, explosion that would impact community and cause demonstration and defiance by the residents	<ul style="list-style-type: none"> <li>▶ Set up refinery equipment according to domestic and international standard and regulation</li> <li>▶ Work on hazard and operability study (HAZOP) for manufacturing production</li> <li>▶ Hold work safety and equipment inspection seminar and study</li> <li>▶ Prevent accidental work stoppage with operation training and regular checking</li> <li>▶ Set up emergency procedure and regularly hold emergency training</li> </ul>	



# 2.3 Achievement on Greening

## 2.3.1 Green Office

CPC is actively promoting activities of "energy and resource conservation" and "total waste sorting and no trash". We also set up energy saving measures for offices to comply with eco-environment and increase our enterprise added value.

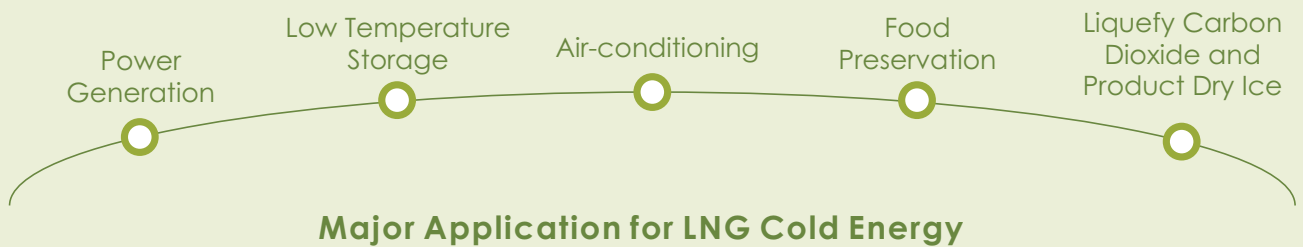
Achievement of 4 Office Saving Measures				
Year	Power Usage for Existing Building (million kWh)	Daily Water Usage for Employees (million m <sup>3</sup> )	Gasoline for Vehicles(kl)	Paper Copied (package)
<b>Baseline</b>				
2011	82.7	1.701	3,152	53,442
2012	78.3	1.568	2,941	48,160
2013	74.7	1.440	2,800	42,477
2014	71.9	1.394	2,677	40,583
2015	67.4	1.340	2,663	40,530
Accumulated Saving Percentage from 2012 to 2015	18.50%	21.23%	15.51%	24.16%

## 2.3.2 Cold Energy Utilization

The cold energy is the energy released from converting the super low temperature, -162°C, LNG from liquid to gas. It would be ashamed if not utilized. Using LNG cold energy can not only increase economic benefits, but also contribute to energy saving and carbon reduction.





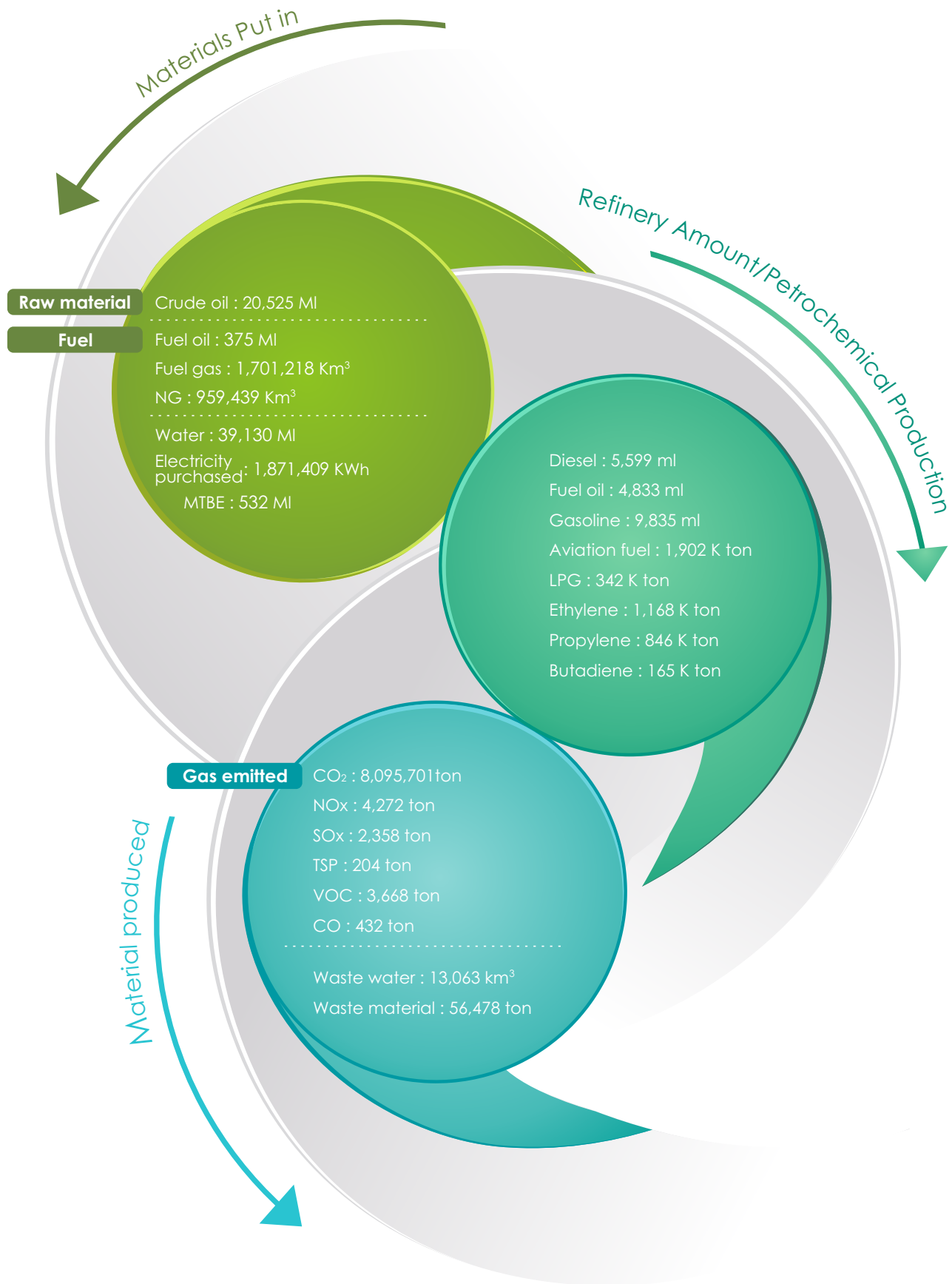


### Cold Energy Utilization for 2015

Cold Energy Provider	Cold Energy User	Achievement
<div style="border: 1px solid #ccc; border-radius: 50%; width: 100px; height: 100px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">                     Yong-an Factory                 </div>	<div style="border: 1px solid #ccc; border-radius: 50%; width: 100px; height: 100px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">                     Far East Industrial Gases Co., Ltd. and Yong-an Factory                 </div>	<div style="border: 1px solid #ccc; border-radius: 50%; width: 100px; height: 100px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">                     Up to end of 2015, <b>18,993</b> tons of greenhouse gas emission has been reduced.                 </div>
<div style="border: 1px solid #ccc; border-radius: 50%; width: 100px; height: 100px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">                     Taichung Factory                 </div>	<div style="border: 1px solid #ccc; border-radius: 50%; width: 100px; height: 100px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">                     Blue Sea Industrial Gases Co., Ltd. and Taichung Factory                 </div>	<div style="border: 1px solid #ccc; border-radius: 50%; width: 100px; height: 100px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">                     Up to end of 2015, <b>37,687</b> tons of greenhouse gas emission has been reduced.                 </div>



### 2.3.3 2015 Environment Footprint



## 2.4 Green Products

The manufacturing process, quality and transportation of CPC products all follow domestic and international environmental regulations and Safety Data Sheet (SDS) is provided for our products to ensure safety. There are no cases of product violating health, safety, information, labeling and no violation of voluntarily regulated cases.

### ► Crude Oil Recycled for Refinery

To reduce crude oil resource usage, CPC has been working hard on the research of recycling crude oil for refinery. Up to the end of 2015, CPC has reached crude oil recycled for refinery percentage of 0.379%, with total 77,870 KI amount of crude oil recycled.

	Item	Unit	2013	2014	2015
Incoming	Crude oil (including cycle oil)	KI	22,648,022	22,380,439	20,525,008
Recycled for Refinery	Waste oil or Not-qualified oil	KI	14,770	27,075	77,870
	Percentage of Recycled Oil	%	0.065	0.121	0.379

### ► NG for Cars

NG for cars has the characteristics of high combustion efficiency and low pollution. To adhere to environmental protection policy, various countries have encouraged NG as replacement for gasoline for cars. In Taiwan, CPC sets up 60 NG stations, mostly in northern, central, and southern metro areas.

#### Comparison of Environmental Impact for NG and Gasoline

	CO <sub>2</sub>	CO	Hydrocarbon
Average emission reduction compared to gasoline	14% to 17%	71%	89.3%

### ► Energy Saving Bulbs

CPC has developed energy saving bulbs and has applied them to lightening for offices.

#### Achievement for Energy Saving Bulbs

- ▶ Average luminance for ground level is increased 5 times from 42 Lux to 210 Lux, with 60% of electricity saved.
- ▶ Average luminance for underground parking lots in CPC HQ buildings is increased by 30%, and 70% of electricity saved.
- ▶ Canopy light and CIS light are applied to all company owned gas stations and 10 to 20 thousand dollars is saved for electricity with CO<sub>2</sub> emission reduction of 2,440 to 4,880 Kg.

**Carbon emission reduction achievement for energy saving light bulbs =**

**Energy saving efficiency (KWh/a) X Carbon emission factor for electricity (Kg-CO<sub>2</sub>/KWh) publish in 2015 by Bureau of Energy.**

# 2.5 Green Energy

In 2012, Green Technology Research Institute (GTRI) was established to actively engage in research for environmental friendly process, raw material production changes and carbon reduction technology. Hydrogen energy and fuel cell, biomass fuels and photovoltaic technology are the main research topics. CPC would like to work on research for clean energy development, carbon reduction and biomass fuels.

## 2.5.1 Solar Energy

CPC utilizes the vacant area on the gas station roof top and sets up photovoltaic system. So far, there are 7 solar power generators with 6 of them in the cloud based monitoring system. The total accumulated power is sold to Taiwan Power company to push for the development of renewable energy.

7 Solar Power Generators							
	Kenting, Pingtung	Linluong, Pingtung	Shetou, Changhua	Erhshui, Changhua	Makuang, Yunlin	Nanhuan Road, Yunlin	Military Academy Rd., Kaohsiung
Location	Pingtung	Pingtung	Changhua	Changhua	Yunlin	Yunlin	Kaohsiung
Capacity (KWP)	24.84	23.04	33.6	10.08	18.24	18.72	26.27
System Type	Polycrystalline silicon	Polycrystalline silicon	Polycrystalline silicon	CIGS thin film	CIGS thin film	CIGS thin film	Polycrystalline silicon
2015 Power generated (KWh)	28,368	30,500	44,106	13,147	21,216	22,328	910
2015 Carbon Emission Reduced (Kg)	14,779	15,890	22,979	6,849	11,053	11,632	474

Note 1 : Carbon emission reduced amount is calculated based on the carbon emission factor for electricity published in 2015 by Bureau of Energy. The number is 0.521 kg-CO<sub>2</sub>/kWh.

Note 3 : The Guiren high speed railway gas station is not in the table since electricity generated from the station is for its own use, not sold to Taiwan Power Company.

Note 2 : System in Military Academy Rd., station starts in Dec., 2015.

## 2.5.2 Biomass Energy

Following government's "Push for renewable energy, and develop green industry", CPC keeps working on biomass energy research and strives for renovated technology development and patent application. We would like to establish domestic bio refinery model and develop green energy industry.

### Biomass Energy Research Achievement in 2015

- ▶ R&D on Biodiesel and biochemical processing technology.
- ▶ R&D on green diesel and bio aviation fuel processing technology.
- ▶ R&D on bio cracking processing technology and the related products.
- ▶ Build microalgae cultivating and algal biofuel technology platform with outdoor photobioreactor (PBR) and outdoor raceway trial unit.
- ▶ Added 20 KI fatty acid methyl esters to biofuel oil for industrial usage and reduced greenhouse gas emission of 60 K ton.

## 2.5.3 Hydrogen Energy

Hydrogen and fuel cell produces energy by utilizing the chemical reaction between hydrogen and oxygen to generate electricity and heat. As long as there is hydrogen and oxygen provided, endless power would be generated, and the final product is clean water.

### Hydrogen and Fuel Cell Technology Research Achievement in 2015

- ▶ Develop small 1~5 kW natural gas Reformer.
- ▶ Develop small 1 kW palladium membrane hydrogen separation bio-ethanol reforming technology.
- ▶ Set up the high temperature solid oxide fuel cell testing system.
- ▶ Establish technology for setting up hydrogen refueling station.

Special Edition 1

# The Green Vanguard- CPC's Green Building Gas Stations





## Environment Friendly and Efficient Use of Resources

With the building materials and construction style being based on four goals of "ecology, energy saving, carbon reducing and health", Green Building possesses characteristics of environmental friendly and efficient usage of resources. It emphasizes on ecology, material recycling, energy efficiency enhancing and energy saving.

### CPC's Green Building Gas Stations

The 600 company owned gas stations around Taiwan would not only strive for better product quality, but also adding various innovative and delicate services. To further advancing our idea of green environment protection, and enhancing the service quality, CPC would keep pushing company owned gas stations toward green building ones. (From here on, they would be called green stations.) The new ones or refurbished ones would abide by the green building standard.

Taiwan Green Building Label covers 4 areas of ecology, energy saving, waste reduction and health (EEWH) and it includes gas station built with green materials and solar energy lightening systems. In order to reduce ambient temperature and insulate heat, it also encourages cultivating green plants on the walls to not only build a greener environment but also reduce carbon admission. In terms of water recycling, the station would construct rain water collection facility to recycle rain and waste water to be used for plant watering, and floor cleaning. The car washing station would also add waste water recycling system. Gas vapor recovery system is also established to reduce the emission of volatile organic compounds(VOCs) for cleaner air and to reduce the health impact to human body.

Since CPC started green station project in 2013 and there have been 7 green stations certified for the label and 11 additional ones applying for the label, which leads our competitors.





## A Park with the Breathing Forest- Guiren High Speed Railway Gas Station

The polysilicon solar panel based solar power system built in Guiren high speed railway gas station is estimated to be able to generate 3,750 kilowatt-hour (kWh) of electricity, which reduces 1,953.75 kg carbon emissions, and really helps with energy saving and reduces the impact to the environment.

### Carbon Reduction Benefit of Solar Power System

Amount of carbon reduction from solar power system = Annual power generated X Emission factor for power generation  
 = 3,750 kWh × 0.521 kg CO<sub>2</sub>e/kWh  
 = 1,953.75 kg CO<sub>2</sub>e

Note : Based on the latest data from Bureau of Energy, Ministry of Economic Affairs, the power generation emission factor 2014 is 0.521 kg CO<sub>2</sub> per kWh.

There are **18** green stations for CPC.

- ▶ 11 Applying
- ▶ 7 Certified

Badu liquefied petroleum gas (LPG) filling station, Guishan and Sinjhuangzih are certified as diamond class.

Guiren high speed railway station is gold class.

Muzha station, Luchou station and Tingzhou road station are also certified.



Note : Taiwan Green Building Label rating system defines five classes of greenbuilding design, including Certified, Bronze, Silver, Gold, and Diamond.



Mark of Intelligent Green Building in Taiwan

Guiren high speed railway gas station combines the ideas of green operation, culture and creative industry and mutual prosperity with the community to create a green station for the new generation. An environment education pavilion is constructed to children learning to use water bottles made from CPC to build windmills and to decorate the lawns around the station. With education with playing, CPC can teach community more about the value of green stations and help with the community development.

Guiren high speed railway station combines friendly ecology, humanity and environment. With trees like royal Poinciana, Bauhinia, and Taiwanese rain tree planted around the station and lawn spreading out, it looks more like a breathing forest park with colorful surrounding and wind breezing.



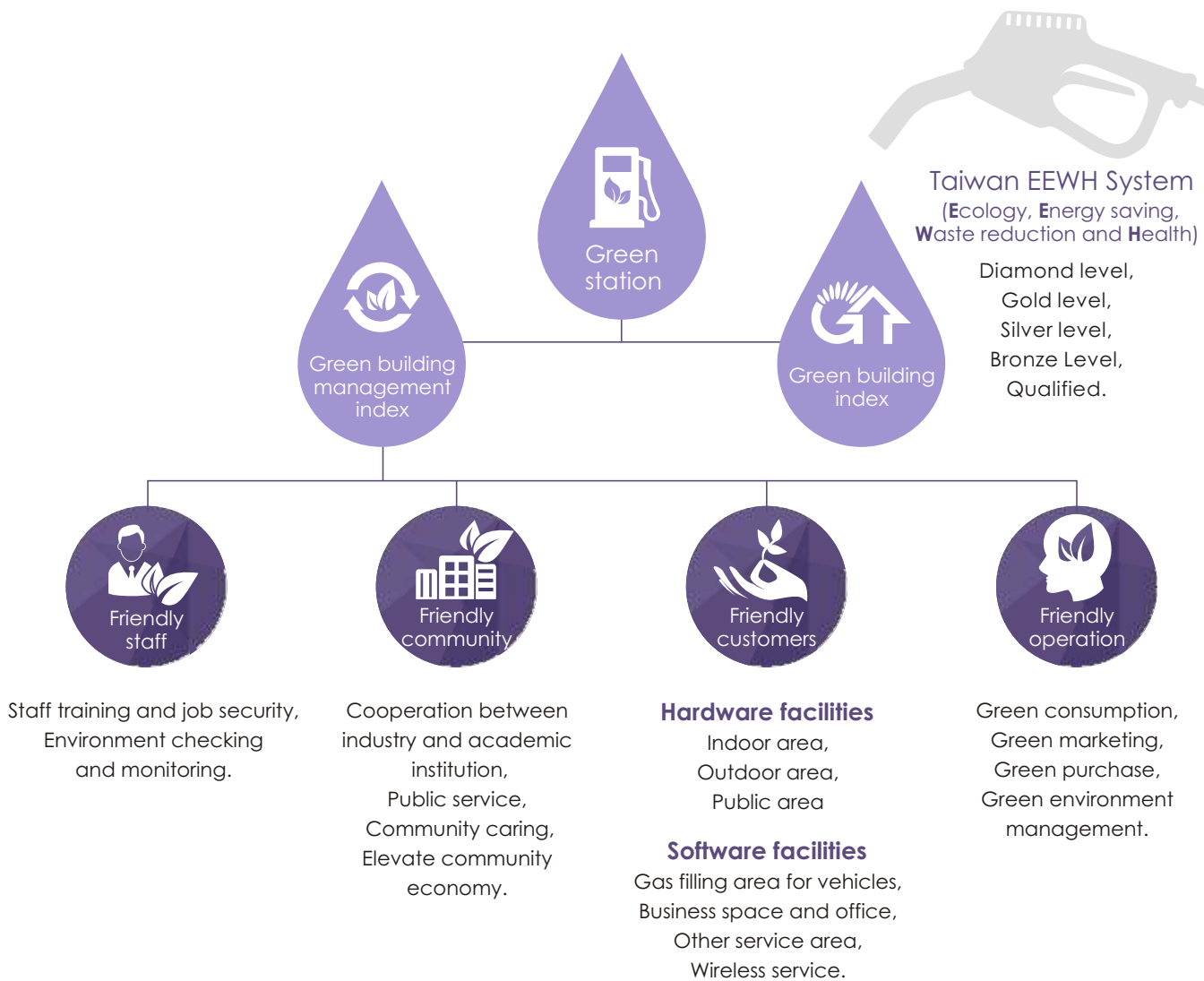
## Toward the New Era of Green Stations

With the world working on carbon reduction to save the Earth, CPC held "Declaring New Era of Green Station" in Guiren high speed railway station on Dec. 4<sup>th</sup>, 2015 to respond to the universal value of carbon reduction and demonstrate our effort and achievement. CPC official announced that based on the existing high quality gas products and service, CPC would like to surpass competitors' vision, perception and actively pushing for green stations. CPC would like to spread the green seeds around Taiwan and progressively develop the idea of environment friendly construction and sustainable environment design.

In the future, CPC would keep build the 4F green management: friendly operation, friendly treatment to our customers, friendly to community and friendly staff and transform CPC green stations to zero carbon service. While using green energy, CPC can build a harmony and beautiful living environment.

## Green Station Certification Structure

There are two items in CPC green station certification program, namely, green building index and green management index. As the following figure shows that for the two items, there are certification badges and steps are gradually pushed to build gas stations with 4 friendly genes (4F).





Special Edition 2

# Glorious Hero- Kaohsiung Refinery New Beginning, New Outlook

Chronicle Events of Kaohsiung Refinery

## Previously

Japan's No.6 Navy Fuel Depot.  
Bombarded during World War II, it was severely damaged and completely ruined. Our brave staff fought against all odds to not only repair the equipment but also expand it.

## Built

1946  
No.2, Zuonan Rd., Nanzi Dist., Kaohsiung City (foot hill of Ban-Ping Mountain, Tsoying).

## Heyday

46 Units  
Oil refinery amount of 270,000 barrels per day.  
Annual ethylene production of 500,000 tons.  
Supply close to half of Taiwan's gasoline and the need for downstream factories in Renda and Linyuan Industrial Zones.

## Economic Contribution

Annual production revenue of 200 billion.  
Oil refinery and production of petrochemical raw materials.  
Integrated transport, storage, refining, and petrochemical production  
Steadily provide materials to downstream companies.  
Lead Taiwan economy to leap forward and prosper.

## Glory

Once a top 10 refinery in the world.



## The Driving Force of Taiwan Economy

To ensure ample supply for domestic energy need, CPC built Kaohsiung Refinery for distilling and catalytic cracking and as a naphtha cracking units to supply petrochemical materials. During the heyday, there were 46 units with oil refinery daily production of 270,000 barrels, and annual ethylene production of 500,000 tons, and it provided almost half of the notational oil supply and materials to down-stream companies in Renda and Linyuan Industrial Parks. It played an irreplaceable role in Taiwan economy development, ensuring uninterrupted oil supply. In addition to oil refinery and petrochemical production, it's also an important storage and transportation pivot, and a vital link in domestic People's livelihood and defense supply. It was once a top 10 refinery in the world and creates an era of Taiwan's economy miracle. It has been the spirit and soul of the oil industry and staff.

## Environment Protection and Community Caring

Besides enormous economy impact, Kaohsiung Refinery also strived for environment sustainability and maintained ecology around Ban-Ping Mountain with plenty tree planting and tree protection, with CPC's staff helping cleaning the environment.

Its Hongnan dormitory was chosen by Department of Cultural Affairs, Kaohsiung City as a cultural attraction in 2015 and its dormitory landscape and scene has been a hot spot for wedding portraits and photographs. It was also a shooting scene for a renowned TV show.



## Relocation Commitment and Transformational Renewal

CPC have started the decommission of the 46 units in Kaohsiung Refinery in three stages since 1991 and the hardware equipment of the plant would also be dismantled and moved in three stages.

## Monitoring and Treatment of Soil and Groundwater Pollution

- (1)Set up groundwater monitoring wells and intercepting systems: CPC has established and kept sampling 93 monitoring wells and the intercepting systems to block pollutants and prevent any overflow.
- (2)Completed treatment for P-37 oil tank area contamination: The treatment plan was authorized by Environmental Protection Bureau, Kaohsiung City Government. Chin Wei Inc., was in charge of the whole process in Nov., 2008, and in 2012, Environmental Protection Administration, Executive Yuan removed the site from pollution watch list on Feb. 20, 2012.
- (3)Overall monitoring and improving task: CPC has established "soil and groundwater overall monitoring and improving plan for Kaohsiung Refinery". CPC has built soil and groundwater pollution monitoring sites and followed plans approved by authorities for environment pollution improvement.

## Gracefully Decommissioned and the Memory of All Oilers

At the end of 2015, Kaohsiung Refinery stopped operation of the final 6 units and oil production was transferred to the newly built refinery unit of Dalin Refinery and the petrochemical production was replaced by the new number 3 naphtha cracker in Linyuan Petrochemical Complex.

Over the years, Kaohsiung Refinery has been properly maintained and operated smoothly. To utilize the existing facilities and take advantage of the maximum benefits, CPC is trying to explore opportunity to cooperate with other companies to work on relocation and seeking investment into other nation's oil and petrochemical production market. CPC'd like to exploit and maximize the production Kaohsiung Refinery and establish overseas petrochemical production. All the employees with Kaohsiung Refinery were already transferred internally to other departments within CPC. Staff reduction was also implemented to encourage early retirement to reduce human resources expanse.



## Employee Relocation and Transference for Kaohsiung Refinery Decommission

### 01

#### Set up a special task force to plan for the employee relocation

On Mar. 13, 2013, CPC set up the "cross section employee relocation planning" task force. It invited related business division and union members to discuss and draft the Kaohsiung Refinery employee relocation guidelines to gradually transfer and properly place the staff.

### 02

#### Continuing staff transfer

(1) Since Apr. 1, 2013, Kaohsiung Refinery has gradually halted works and checked for the available work force. Up to May 1, 2016, there are 1,201 employees transferred to Refining Business Division, Soil and Groundwater Treatment Department and other business units with the others retiring.

(2) There are still 472 employees. Some of them would be retiring or not in suitable physical condition to work and all the others would be transfer to Refining Business Division and other business units.

### 03

#### Work force needed for decommissioning and after decommission

There are total 289 employees needed for the soil and groundwater treatment, environmental protection, oil material transportation, waste material treatment, storage and public facility maintenance and for keeping the equipment in working condition, and to have necessary staff for work safety and decommissioning job.

Although Kaohsiung Refinery was decommissioned and the epic story it created ended officially, its 70-year glorious days and great history would still be remembered. CPC hopes that someday CPC can continue its epic journey and continue its brilliant story.



Lights out of  
Kaohsiung Refinery





## Integration of Monitoring, Improving Resources and Develop Our Service Niche

- (1) Planning on a by stage and by area checking of Kaohsiung Refinery pollution, and the control and removal, CPC would like to reduce the pollution to under the requirement of regulation. It is estimated 17 years would be needed to clear the groundwater pollution. CPC would like the land to be released from construction restriction and to work on future development for the area.
- (2) Considering the uncertainty of on-site pollution removal, CPC is actively working on the authorization of off-site soil processing. CPC would like to add some soil remediation facilities, including soil washing, low-temperature thermal desorption and bioremediation, groundwater remediation and secondary pollution treatment and prevention equipment to facilitate the overall project.
- (3) Soil and groundwater pollution remediation is a highly professional and technical industry. CPC would like to integrate our refinery expertise and soil and groundwater pollution remediation technique and experience to develop our own remediation business. CPC could also work with renowned company or in a joint venture style model to create a soil and groundwater pollution remediation management and consulting firm to gradually build up the reputation and the leadership and to expand our service business.

## New Business Starting and New Future Creating

There are 253 hectares for the decommissioned Kaohsiung Refinery. With even and leveled field, comprehensive public facilities and perfect location in the urban area, it is full of potential development possibility to be revitalized. Considering the need for new R&D business development, industrial transition and land revitalization, CPC has ask for a professional consulting firm to do a comprehensive plan to advance our capability of value-added product development, build the foundation for new business, expand our operation scope and business scale. CPC would like to transform the Kaohsiung Refinery land into a green industry park and becoming a junction and hub of CPC's transformation.

### Possible Consideration for Land Usage Planning

Non-polluted Area  
(76.29 hectares)

- ▶ Setup historical architecture preservation area.
- ▶ Build CPC operation center and product sales and marketing center.
- ▶ Establish multifunction research and development park for R&D, incubation, trial production for logistic, business service and low carbon and energy saving industries.

Polluted Area  
(176.70 hectares)

Since a long remediation time is needed, the development project would be on hold for now. When the remediation is completed, CPC would then look at the condition at that time for the practical development.





# Refueling for the Love of Taiwan

# 3

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# 2015 Social Achievement



**450**

In 2015, CPC gas stations have hired 450 physically or mentally challenged people to work on gas filling or car washing jobs.



**595**

By the end of 2015, there are 595 CPC owned gas stations equip with accessible rest rooms.



**92.7**

Customer satisfaction score is 92.7 for CPC owned gas stations.



**100%**

100% of new suppliers qualify the selection criteria.



**31** units

31 departments or units set up and are authenticated for Taiwan Occupational Safety and Health Management System(TOSHMS).



**90%**

Percentage of employee propose cases for Occupational Safety and Health committee is 90%.



**289**

Hold 289 practices of disaster prevention and response operation.



**26.53** million

In 2015, total employee health check fee is 26.53 million.



**↑90%**

94.72% of male employees and 92.56% of female employees are evaluated for their performance.



**397** million

In 2015, CPC spent NTD 397 million on social care.

## 3.1 Customers and Us

With CPC's clients and customers spreading all over Taiwan, CPC has been working hard on building customer-focused service network system. In terms of products and service, we always adhere to the principle of providing safe and diversified products. Continuously progressing and looking for innovative and superb gas stations have kept us in winning best service awards consecutively. It's the promise to CPC's customers and also the best recognition CPC can get.

### 3.1.1 Providing Clean and Diversified Products

All of CPC's products are marked with our logo to prevent any confusion from customers and to protect company benefits. CPC strictly abide by domestic rules and regulations in providing products and service as well as marketing advertisement. In 2015, there is no product, service, advertisement or marketing related regulation violation, nor with any fine.

CPC implemented "CPC enhancing corporation image advertising campaign" and the achievement is listed in the following.

Type	Promotion Method	Number of Times
Advertisement	▶ Magazine    ▶ Activity Pamphlet	80
Broadcasting Cases	▶ TV    ▶ Radio    ▶ Outdoor Media	42
Others	▶ Follow important occasion and invite media to for opportunity of interview	38

Note : No violation of communication regulations or self-imposed rules.

#### ▶ Service for Fuel Related Products

For fuel related products, CPC identifies ingredient and danger associates with it in detail on the label. CPC also list the "Product Regulation", "Safety Data Sheet", "Hazard Identification Data" and "Ingredient Identification Data" in "Product and Service" section of our company website for consumers to check. In 2015, CPC didn't have any violation for regulation or self-imposed rules.

#### ▶ Green Biotechnology Products

Based on our core technology advantage, CPC actively broaden R&D scope into biotech area and CPC now own various green biotech products like, biotechnology products, bio-body care products and bio-beverage. To abide by the idea of safe and effective to the environment and customers, we edited "biotechnology product research and development management handbook". Double inspection is also implemented with both CPC and the contract factory doing checking and inspection separately. It would be acceptable only when both reports are passed. If you need more information regarding to CPC's biotechnology product, please go to See Clean FB fans page: [www.facebook.com/SeeClean](http://www.facebook.com/SeeClean).





## 3.1.2 Leading and Innovative Gas Stations

CPC sincerely hope gas stations can not only be places for consumers to refuel their cars, but also places to provide a more intimate, more convenient, more delicate and much better gas stations to our customers.

### Various Types of Innovative Gas Stations



#### Gas Stations with Love

- ▶ Based on the idea of "CPC with love and service without barrier", CPC promotes gas stations with love and provides job opportunity to physically or mentally challenged persons.
- ▶ Up to 2015, 450 physically or mentally challenged people have been hired to work on gas filling or car washing jobs.



#### Gas Stations with Charity Carwash

- ▶ Work with local special education schools and provide job opportunity to under-privileged students and families and give them a chance to connect to the society.



#### Gas stations with Diversified Service

- ▶ Provide car washing, convenience stores, quick service and maintenance, eTag depositing service, and toll paying, as well as poster reporting missing children.



#### Self-service Gas Stations

- ▶ Employ with credit card machine with operation similar to that of ATM. Combined with audio service, it offers faster and more convenient gas refueling service.



#### Gas Stations with Accessible Restrooms

- ▶ Up to 2015, 595 CPC owned gas stations have installed accessible restrooms.





### 3.1.3 Customer Satisfaction

#### ▶ Customer Satisfaction Survey

CPC does customer satisfaction survey for our customers annually and focus on the items with low scores to make more improvement.

Customer Satisfaction Scores				
		2013	2014	2015
Company Owned Gas Station		89.9	91.2	92.7
NG Supply Service		98.2	98.9	98.9
Product Sales and Service	Solvent	90.5	90.9	92.0
	Lubricant	93.6	93.4	92.9

#### ▶ Customer Privacy

CPC has established mechanism to protect customer privacy and increases education and training for employee awareness, especially gas station operators, in privacy protection and personal data safety. In 2015, there is one personal data breach case.

#### Customer Data Protection Measures

- ▶ Establish security operation center and enhance information safety management system.
- ▶ Categorize CPC information safety into A, B, C and D levels and work on information safety checking and auditing.
- ▶ Hold 4 seminars in information safety protection to increase employee's awareness.
- ▶ 4 A category and 15 B category information units have passed third party auditing for ISO 27001 information safety management systems and completed the system setup and transfer.

#### Customer Data Breaching Case Summary

##### Background

- ▶ A part-time worker took advantage of a customer applying for membership card and added the phone number to his own friend-list. The customer asked for investigation and response to the case.

##### Investigation and Improvement

- ▶ After verifying with the worker, CPC fired him and the manager confirmed that the number was deleted and gained the customer's understanding.
- ▶ Request all managers and supervisors to actively advocate the case and prevent any similar incident from happening.

## 3.2 Affiliated Partners

Stable supply is the iron rule of CPC management. Lately, CPC have been working hard on overseas exploration and investment and partnership with suppliers. CPC affiliated partners include suppliers and engineering and labor contractors. CPC establish superb partner management mechanism to maintain the partnership.

### 3.2.1 Characteristics of Overseas Procurement

99% of the crude oil for CPC is imported. For the crude oil, we need to consider it has to be suitable for refinery. Stable supply is also our priority in terms of procurement strategy. Thus, long term contracts with Middle East are the major cases, but to follow the request of environmental friendly low sulfur oil, a fixed percentage of procurement is for the low sulfur oil from West Africa and other countries.

#### Crude Oil

- ▶ Purchasing strategy is based on stable supply and refinery efficiency.
- ▶ There are over 80 oil sources from more than 20 countries that are suitable for our refineries, and mostly from Middle East, West Africa, Australia and Southeast Asia.
- ▶ In 2015, to increase flexibility and efficiency, we reduced the number of long term oil purchasing contracts and adjust for some oil sources with higher benefit.

#### Natural Gas

- ▶ Import is mostly from Qatar, Malaysia, Indonesia and Papua New Guinea.
- ▶ To continue diversifying natural gas source in order to respond to sudden surge of demand, CPC signed purchasing contracts with 22 suppliers in midterm and in stock. Possible sources are from Nigeria, Trinidad, Equatorial Guinea, Australia and other African countries.

### 3.2.2 Contracts for Affiliated Partners

Importing crude oil or LNG from overseas suppliers, CPC always sign procurement contracts, which states the suppliers should abide by their local regulations including labor right related ones. Suppliers, at the same time, need to provide the definite source of the oil or LNG, and CPC can filter through it and make sure there are no violations on international regulation or involvement with commonly known wrongful oil or LNG supply sources.

#### Management Mechanism for LNG Suppliers

- ▶ Set up "procurement operation procedures for LNG import".
- ▶ Establish "review and advisory committee for LNG purchasing plans".
- ▶ Filter and select the suppliers based on qualification and contract fulfilling capability.

#### Management Mechanism for Engineering and Labor Tasks

- ▶ Follow the domestic procurement rules and regulations.
- ▶ Ask suppliers to abide by government rules and regulations in hiring employees.
- ▶ Regularly check and audit suppliers.

### 3.2.3 Management of Important Investment Authority

All the investments must be reviewed by "Investment Plan Review and Advisory Meeting" and "High Level Management Business Committee" and passed by BOD first and then report to and be approved by higher level authority before any execution. In 2015, there is no new fixed asset investment plan, and there are 5 on going ones.

To adhere to gender equality and basic human rights, CPC always follow regulations from authority. For any over 10 billion dollars fixed asset investment, we always follow Government Procurement Act for all the engineering and labor purchasing operation. Also, when signing contracts or agreements, CPC would specifically state that the contractor must abide by government regulations in hiring labors and workers, and the regulations include "Labor Standard Law", "Labor Safety and Health Law", and all the other related enforcement rules and regulations.

### 3.2.4 Social Responsibility Management of Supply Chain

#### ▶ Selecting New Suppliers

When selecting suppliers or contractors, CPC not only ask them to follow procurement act, but also abide by labor, environment, human right and other related laws and regulations. CPC hope to request suppliers and contractors to enforce corporate social responsibility. In 2015, all of the new suppliers are qualified for our selection criteria.

#### New Supplier Selection Conditions

- ▶ Tenders must follow procurement act.
- ▶ All documents must declare that tenderers would follow fair trade principles, environmental protection regulations, labor standard law, and labor safety and health law.
- ▶ Suppliers must follow local government's regulations on environmental protection related laws and regulations, like air pollution prevention, water pollution prevention, and waste material and resource management. If there is any violations, improvement plan must be proposed.
- ▶ Suppliers must abide by People with Disabilities Rights Protection Act, Aborigine Employment Rights Protection Act, and Procurement Act to hire physically or mentally challenged people and aborigines.

#### ▶ Risk and Impact Evaluation Mechanism

#### Risk and Impact Evaluation Mechanism

##### **Risk prevention**

1. Build long term strategic collaboration partnership with the suppliers and regularly check and coordinate with them for spare parts preparation mechanism.
2. Establish safety stock according to spare part preparation schedule to ensure fluent and stable operation for the supply chain.

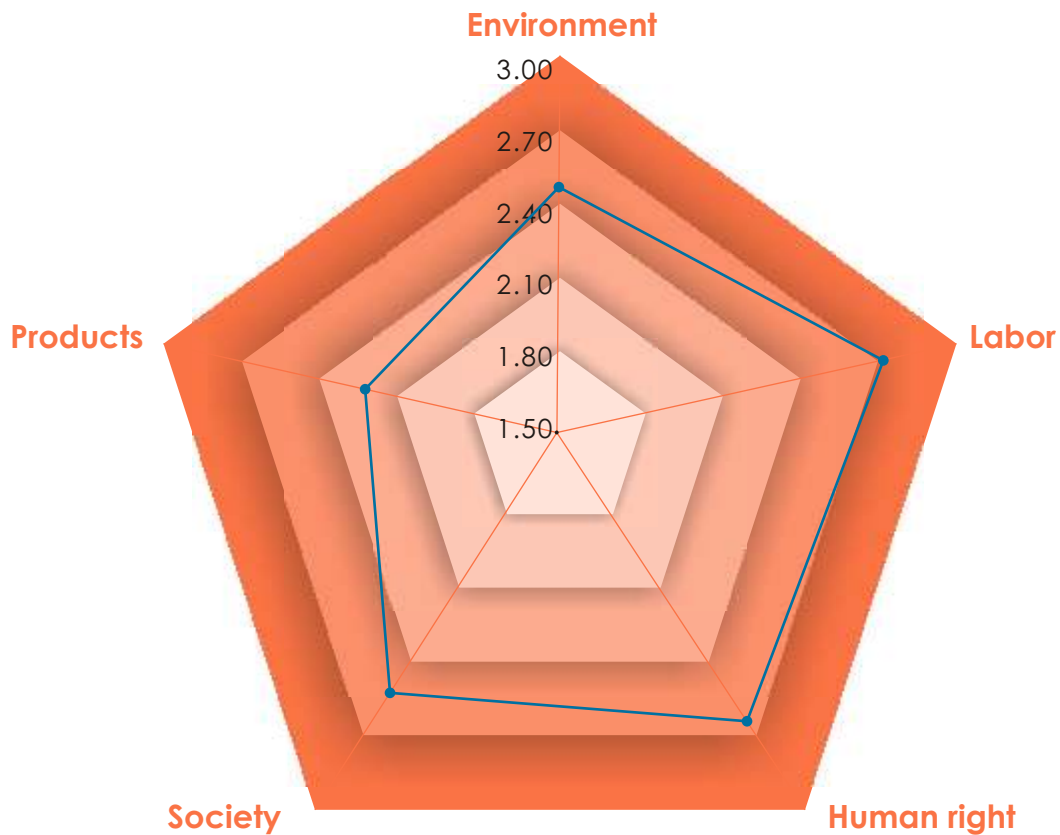
##### **Post-accident damage control**

1. Investigate damage to supplier's facilities, staff, up-stream material supplies, and transportation for finished products right after accident happens and summarize the results and provide it to related department for proper response.
2. Convene emergency meeting after realizing damage situation and adjust suppliers accordingly. Follow the development and evaluate new suppliers for supply chain support if needed.

#### ▶ Supplier Evaluation

There are three major types of suppliers for CPC, namely, commodity or raw material suppliers, financial or property suppliers and labor force suppliers. To broaden social responsibility to supply chain management, CPC introduced supply chain self-evaluation questionnaires focusing on five areas of environment, labor condition, human right, society and products to assess and understand suppliers' performance on social responsibility.

## Important Social Responsibility Topics to Suppliers



Note : There are 53 suppliers responded to our 2016 questionnaire.

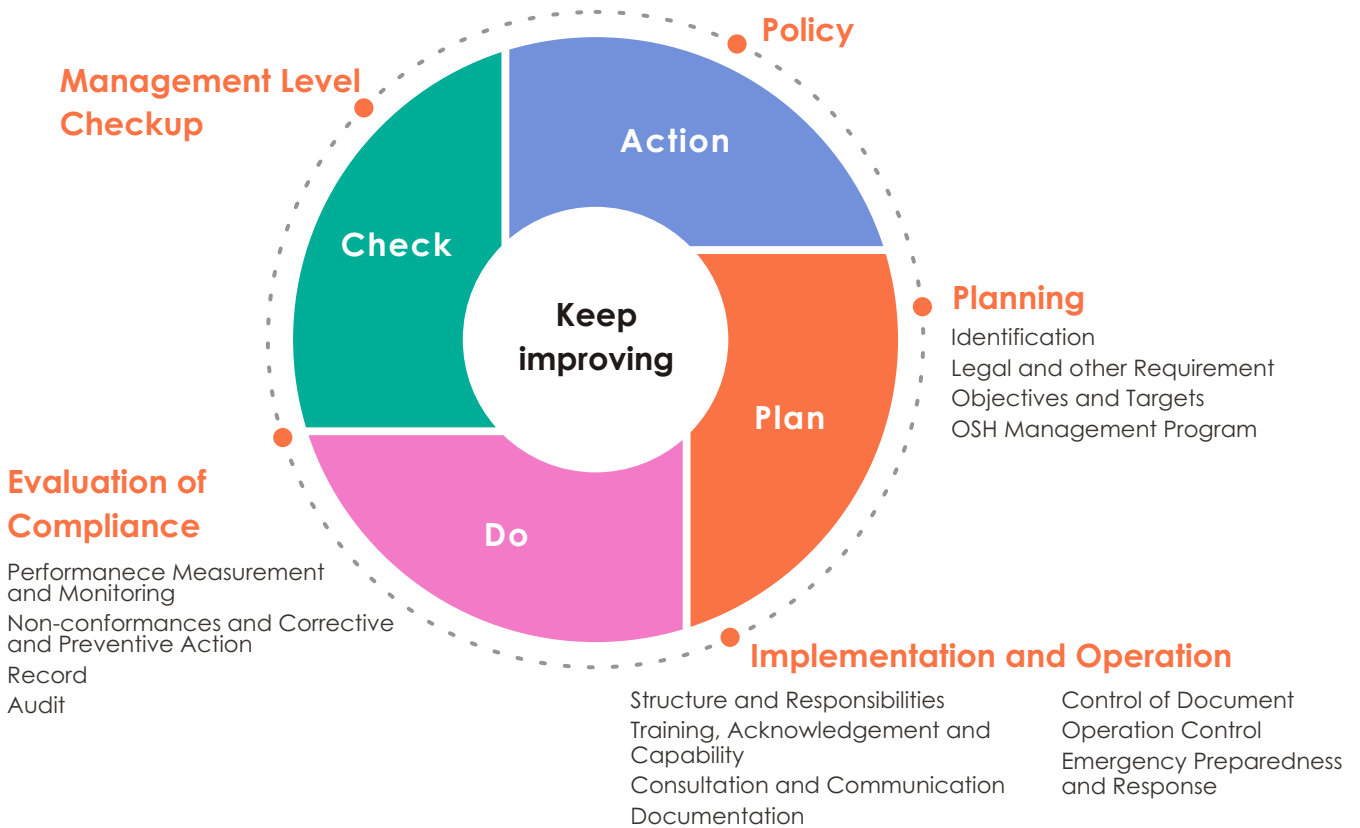
The self-evaluation results show that for our suppliers, their social responsibility performance is better in terms of labor, human right, and society.

### ► Supplier Management Mechanism

CPC also expect labors hired by contractors obtain and enjoy respect they deserved. To reduce the workplace accidents and maintain the safety of the labors, CPC actively check and help the contractor and promote workplace safety to enhance the workplace safety conscious to the contractors. If there are any major violations on procurement contract, labor standard law, or labor safety and health law, CPC would release them off the contract or stop the contract completely.

# 3.3 Sustainable Workplace

To reduce the accident rate and to prevent occupational injury in workplace, CPC established TOSHMS (Taiwan Occupational Safety and Health Management System) for risk management and control. Through education and training, seminars and certification programs, CPC would like to spread the work place safety culture and share the experience to increase staff and contractors 'alertness on operation and work place safety.



## 3.3.1 Workplace Safety Policies and Goals

CPC Safety and Health Policy	
Discipline on safety; thorough checking	Risk management; systemic operation
Health promotion; responsible care	Full participation; continuous improvement

To achieve our goal of "100% Occupational Safety for Zero Industrial Accidents", the "Advisory Committee for CPC Safety and Health Strategy" is set up.

- ### Advisory Committee for CPC Safety and Health Strategy
- ▶ Invite experts in industry, government and academic institute to join and convene semiannually.
  - ▶ 2 meetings are held in 2015, topics discussed include "Enhancing the effectiveness of contractor safety management", "Strengthening safety disciplines", "Pushing for safety leadership on all levels of management", and "Building effective workplace safety mechanism".
  - ▶ CPC has further investigates and studied feasible action guides, like editing contractor management regulations, promoting implementation principles and adding achievement evaluation into performance index. We would like to take safety management into the next level.



## 3.3.2 Occupational Safety and Health Management

Besides Occupational Health and Safety Assessment Series 18001 (OHSAS18001), CPC set up Taiwan Occupational Safety and Health Management System (TOSHMS) in 2008 to reduce the risk of workplace accidents. Up to the end of 2015, CPC had total of 31 business units establishing and achieving TOSHMS certification.

### ▶ Occupational Safety and Health Committee

The Occupational Safety and Health Committee is in charge of promoting workplace safety, preventing accidents, improving working conditions and employees' health, with the president as the chairperson of the committee. There are 25 commissioners coming from related departments, including one chairperson and 24 commissioners. There are 9 commissioners from the labor union, accounting for 36% of all the commissioners, over the requirement in the regulation. CPC holds quarterly meetings for the Occupational Safety and Health Committee. In 2015, labor union members submitted 18 proposals which accounted for 90% of the issues for discussion.

### ▶ Promotion of Issues concerning Employee Safety

Issues concerning work environment, labor conditions and health and safety improvement are brought up and discussed with the employer's representatives in the monthly labor-management meeting, and the responsible divisions would propose a solution or brief the handling process. The issues brought up in the labor-management meeting will be continuously tracked until the problem is solved, and such case would be treated as a formal agreement.

### ▶ Management of Contractors' Safety

In 2015, CPC has conducted 17 times of inspection and auditing of our contractors.

#### Contractor Management Mechanism

- ▶ Set up "Regulation of contractor safety management" and "Guidelines on permit to work". The rules are the same as the ones applied to CPC employees.
- ▶ The contractor injury accidents are seen the same as the ones for the employees, and would be investigated and the causes would be recorded and tracked.
- ▶ Establish "Safety construction auditing group" to visit construction sites regular but unscheduled safety audits.
- ▶ Enforce contractors' self-consciousness on safety and strictly request contractors to follow Standard Operating Procedures.

### ▶ Safety Management for Security Guards

Our security guard staff and contracted security companies are responsible for the access control and security of CPC owned plants, factories and CPC office buildings.

#### Management Measures for Security Guards

- ▶ All security guards need to take our safety and health seminar for 3 hours and pass the test to be qualified to work.
- ▶ Security guards hired by contractors need to take 4 hours of on-job training monthly.
- ▶ 20 minutes pre-service education should be held weekly.
- ▶ Read "security guard operation emergency handling procedure" daily and keep recording it in the work logs to ensure operation safety.
- ▶ Promotion on body protection training: when searching for illegal items, ask for the person's cooperation and don't touch the body.
- ▶ Personal data protection: Documents recording persons coming to factory need to be saved properly and destroyed when expires.
- ▶ Check the monthly salary, labor and health insurance fee according to the contract to prevent any harsh treatment and ensure workers' benefit.

### ▶ Emergency Response Drills

In 2015, CPC has held various emergency response drills to strengthen contingency and disaster prevention capacity, with a total of 289 disaster prevention drills, 6 emergency response drills without warning, and 4 large-scale emergency drills.



### 3.3.3 Workplace Safety Education, Training and Advocating

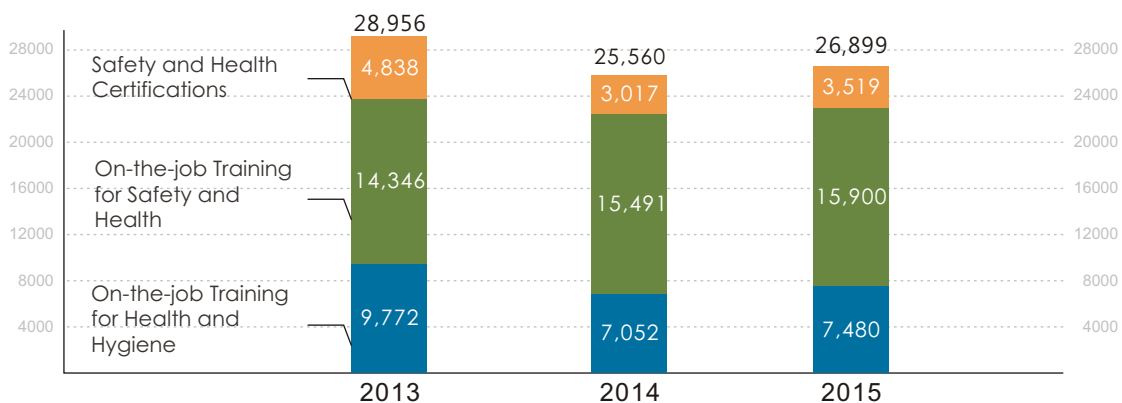
To elevate the workplace safety and environmental protection functions of all employees at CPC, we set up series of workplace safety education, training and advocating to build workplace safety consciousness to the employees. In 2015, CPC holds certificated courses, credited classes and on-the-job training for workplace safety and health training.

#### Workplace Safety Education, Training and Advocating

- ▶ CPC established the "principles of employees' education and training for Environmental Health & Safety (EHS) protection" to regulate the certification, training credits and on-the-job training required for each job position and it stipulates that at the end of each year.
- ▶ Plan various training, exchanges and promotion of EHS-related training.
- ▶ High level executives like chairperson and president have been leading the promotion of the work place safety to various units and departments.

#### Workplace Safety Education and Training Summary for the Last 3 Years

unit: person-time



## 2015 Work Safety and Health Conference

2015 "work safety and health conference" was held in Oct. With Petrochemical Business Division in charge. Domestic and China guests joined to exchange and learn more about workplace safety and health. The 7 themes included Process Safety Technology, Disaster and Emergency Response, Cases of Occupational Accidents, Equipment Inspection, Occupational Health and Health Promotion, Engineering Safety Management and Occupational Safety and Health Act, with a total of 311 participants.



"CPC Health and Safety Seminar" in Chiayi



Photo of China guests, CPC former chairperson and staffs

### 3.3.4 Workplace Safety Performance

#### International Labor Organization (ILO) Statistics of Code of Conduct for "Record and Report of Occupational Accidents and Diseases"

	Male	Female	Total
Injury Rate (IR) <sup>Note1</sup>	0.04	0.00	0.04
Occupational Disease Rate (ODR) <sup>Note2</sup>	0.00	0.00	0.00
Lost Day Rate (LDR)(percentage) <sup>Note3</sup>	0.41	0.00	0.41
Absentee Rate (AR) <sup>Note4</sup>	0.49	1.21	0.58

Note 1 : IR=(Number of recorded injuries/Number of hours worked)×200,000

Note 2 : ODR=(Number of recorded diseases/ Number of hours worked)×200,000

Note 3 : LDR=(Number of day cases/ Number of hours worked)×200,000

Note 4 : AR=(Total absent hours/[Employee number\*annual work days\*8 hours])×100%

#### ► Accident Cases

In 2015, there are 1 fire cases and 6 workplace injury cases. The result of disabling injury severity rate is 2, serious disabling injury frequency rate is 0.18, and lost day rate is 66.

## Description of Fire Accident in 2015

Location	Major Cause of Fire	Improvement Action
Nov. 11, 2015, residue fluid catalytic cracking unit, Dalin Refinery, Refining Business Division	The connector between flue gas level 3 separator and level 4 separator cracked.	<ol style="list-style-type: none"> <li>1. Review and add items to the check list and make it more complete.</li> <li>2. Use equipment check list before starting it.</li> <li>3. Fully inspect blinding nitrogen pipes.</li> <li>4. Enforce employees' operation discipline.</li> </ol>

## ► Total Cost of Occupational Safety

Occupational Safety Cost			unit: NTD thousand
Year	2013	2014	2015
Company Operation Cost	1,270,154	1,188,292	1,247,208
Suppliers and Clients Related Cost	184,062	241,894	204,344
Management Activity Cost	423,946	415,622	501,318
R&D Cost	35,381	29,795	33
Social Activity Cost	515	118	13,617
Loss and Compensation Cost	60	300	300
Total	1,914,118	1,876,021	1,966,820

## 3.3.5 Healthy Work Environment

CPC arranges annually health related promotion and learning activities to provide a healthy environment for the employees and to improve their health.

## Major Methods of Cherishing Employees' Health

- Establish clinics to provide convenience for employee's doctor visit.
- Arrange health checkups including general and special ones for all employees.
- Checking work environment regularly.
- Based on health checkup data, annually analyze top five abnormal items.
- Hold various on job health and occupational hygiene related activities and provide the updated health and body care information and on-site health service monthly.

## Regular Health Examination

Year	2013	2014	2015
Number of employees receiving health exams(person)	16,770	13,028	13,894
Total cost(NTD thousand)	28,760,260	26,244,871	26,526,105

Note : Employees who need special checkups include those who work in noisy, dusty, organic solvents, special chemicals, ionizing radiation, and abnormal air pressure environment.



Office human factor in accident prevention workshop



Emergency personnel training

## Statistical Analysis of CPC Employee Health Checkup

Order	Abnormal Items in 2013	Abnormal Rate(%)	Abnormal Items in 2014	Abnormal Rate(%)	Abnormal Items in 2015	Abnormal Rate(%)
1	Weight	58.08	Weight	52.52	Weight	53.09
2	Cholesterol Levels (CHOL)	37.38	Cholesterol Levels (CHOL)	35.76	Chest X-ray	36.96
3	Chest X-ray	35.16	Chest X-ray	33.94	Cholesterol Levels (CHOL)	33.43
4	Systolic Blood Pressure	26.83	Low Density Lipoprotein Cholesterol (LDL)	34.89	Low Density Lipoprotein Cholesterol (LDL)	30.83
5	Diastolic Blood Pressure	24.53	Systolic Blood Pressure	23.97	Systolic Blood Pressure	22.53

### ► Overall Expenditure on Occupational Health

Overall Expenditure on Occupational Health				unit: NTD thousand
Year	2013	2014	2015	
Direct Costs	98,162	68,406	90,331	
Indirect Costs	15,688	14,525	16,104	
Management Costs	12,763	13,141	13,522	
R&D Costs	0	0	0	
Social Costs	3,845	2,151	2,212	
Losses and Compensation Costs	0	0	5,204	
<b>Total</b>	<b>130,458</b>	<b>98,223</b>	<b>127,373</b>	



## 3.4 So Good to Have You

CPC has been striving for employee training and education, and offers various benefits, a talent and expertise development system, and a superb working environment. CPC keep hiring aboriginal and physically or mentally challenged people. Through caring, treasuring and experience passing, CPC would like to expect every employee to be able to work happily and without worries. The employees would then be able to lead CPC onto the road of sustainable operation.

### 3.4.1 Respecting Human Rights

Besides following Labor Standards Act and other related regulations, CPC also establish "CPC work rules", and no-enforce labor is the highest principle. CPC abides by Labor Standards Act and other regulations to inform employees about layoff in advance to ensure the being laid off employees have enough safeguard time. In 2015, CPC doesn't have any human right related appealing case.

#### The Minimum Advance Notice Time for Major Company Operation Change

1. Those who have worked for more than 3 months but less than 1 year would have 10 day advance notice.
2. Those who have worked for more than 1 year but less than 3 year would have 20 day advance notice.
3. Those who have worked for more than 3 years would have 30 day advance notice.

#### ► Hire and care for Underprivileged Groups

Till the end of 2015, CPC hires 790 physically or mentally challenged people, which is 5% of total staff, over the percentage required by the regulation and law. CPC also hires 23 aboriginal people as regular employees. Affiliated gas stations in mountain, indigenous and regular townships within Marketing Business Division hire another 134 aboriginal part time workers and contractors. In 2015, CPC has no discrimination cases.

#### ► Promotion Gender Equality

For employees hired through MOEA joint examine for government-owned enterprises, all are coming in as 1<sup>st</sup> level of 2<sup>nd</sup> grade, male or female. CPC hired ones are coming in as 1<sup>st</sup> level of 5<sup>th</sup> grade, again, male or female. The starting salary of new employee is always higher than the local minimum wage.

CPC also provides friendly work environment for female staff. Up till 2015, there is no sexual harassment case in CPC.

#### Friendly Work Environment for Female Staff

- Set up high quality and certified breastfeeding rooms.
- Hold education and training for gender mainstreaming, with 19 classes in 2015, total of 2,283 person-time participating.
- During the classes, movies and short films about work place anti-discrimination and Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) were played to properly train and inform trainees.
- Set up sexual discrimination grievance mediation committee to handle the sexual harassment case.
- Inform sexual discrimination prevention and appeal filing mechanism to new employees.
- Set up sexual discrimination web page in company official website and a sexual discrimination grievance hotline (02)8725-8422.
- Carry out sexual discrimination prevention training for managers and employees.



CPC's Complaints  
of Sexual Harassment  
Review Committee  
Website

Reinstate Rate for Unpaid Parental Leaves in 2015			
	Number of Applicants	Number of Person Reinstated	Reinstate Rate <sup>Note2</sup>
Female	4	3	75%
Male	2	2	100%

Note 1: Reinstate rate for 2015 are those who applied in 2013-2015 and the unpaid leave expired in 2015.

Note 2: Reinstate percentage = (actually reinstated in 2015 ÷ total eligible to be reinstated) × 100%.

Staying Rate for Unpaid Parental Leaves in 2015			
	Number of Reinstated Person in 2014	Reinstated in 2014 and Still Working in 2015	Staying Rate <sup>Note</sup>
Female	7	7	100%
Male	7	7	100%

Note : Percentage of staying = (reinstated in the 2014 and still working in 2015 ÷ reinstated in 2014) × 100%.

### ► Salary Equality

Average Salary for Male and Female		
Level	Female	Male
Management <sup>Note</sup>	1	0.9878
Employee	1	1.0009

Note : Management means those who have commanding, supervising and evaluating authority.



### ► Employee Retirement System

- From the total salary of part-time or contracted employees and regular employees, 15% and 2%, respectively, are set aside as retirement fund, and are sent to CPC employee (contracted and formal) pension fund management committee and Labor Pension Fund Benefits Section, Trust Department, Bank of Taiwan for the funding management.
- Based on regulations on Labor Pension Act, CPC set aside 6% of the salary as retirement fund and it is sent to employee's personal account in Bureau of Labor Insurance.

### ► Labor Union and Group Agreement

To maintain a good labor and management relationship, CPC actively communicates with Taiwan Petroleum Worker Union about employee right and benefits and sets up agreement to apply to all employees. CPC would like to improve the harmony between the labor and the management to effectively solve disputed cases through common ground and understanding.



## 3.4.2 Hiring Employees

Rules Regarding to Employee Hiring		
Type of Employee	Related Rules and Guidelines	Limitation
Regular Employee	New employee examination for MOEA owned company	Junior college or higher
Contracted	Open examination by CPC entrusted company/organization	High school or higher
Part-time	Management guidelines for gas station part time workers, Marketing Business Division, CPC	must be 16 or older

After hiring, CPC provides the same salary to the same jobs, and for salary, CPC never has other consideration criteria like race, belief, religion, political party, originated place, birth place, gender, sexuality, marriage, face, handicapped or union member. CPC also ensure freedom of association for the employees, and encourage them to join clubs and cooperate with other companies that follow the same principles. During 2015, there is no human right violation or discrimination case for newly hired employees and company operation is not impacted by human rights.

Newly Hired Employees in 2015				
	Female		Male	
	Number	Percentage (%)	Number	Percentage (%)
Under 30	87	66.41	271	42.48
30 to 49	44	33.59	351	55.02
Over 50	0	0	16	2.5
Total	131	100	638	100

**Newly Hired: 769 persons (5.2%)**

Note : Including 214 contracted and 555 regular.

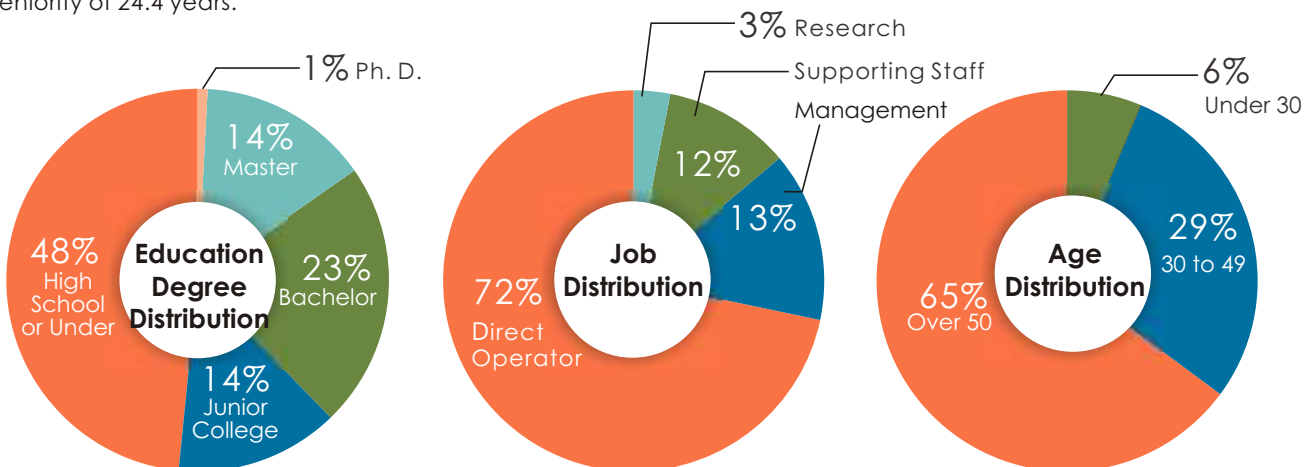
Number of Employees Retired or Resigned, 2015				
	Female		Male	
	Number	Percentage (%)	Number	Percentage (%)
Under 30	8	0.05	28	0.19
30 to 49	8	0.05	52	0.35
Over 50	69	0.46	520	3.50
Total	85	0.57	600	4.04

**Retired or Resigned: 685 persons (4.61%)**

Note : Not including 5 unpaid leave.

### ► Staff Structure

At the end of 2015, CPC has 14,685 employees, of which, number of males are 12,874 (87.67%) and number of females are 1,811 (12.33%). All of them from Taiwan area, with average age of 50.2 years old and average seniority of 24.4 years.



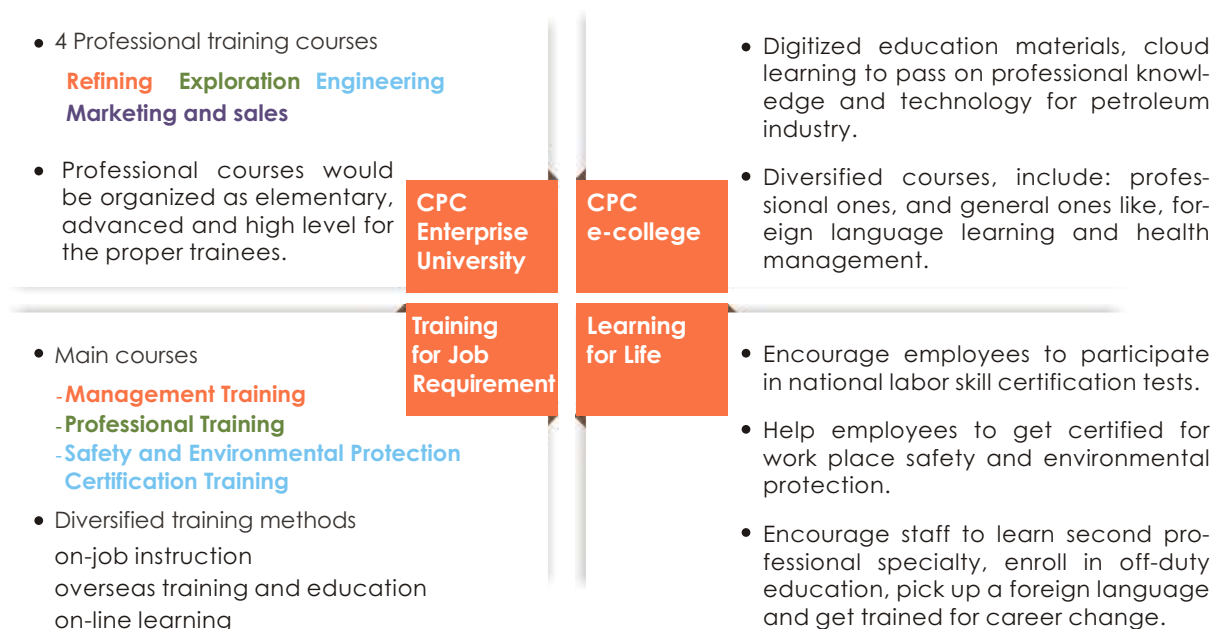
	Managers <sup>Note</sup>				Non-managers			
	Number		Percentage (%)		Number		Percentage (%)	
	Female	Male	Female	Male	Female	Male	Female	Male
Under 30	0	0	0	0	232	582	1.6	4.0
30 to 49	26	90	0.1	0.6	476	3,609	3.2	24.6
Over 50	112	734	0.8	5.0	965	7,859	6.6	53.5
Total	138	824	0.9	5.6	1,673	12,050	11.4	82.1

Note : Managers mean those who have commanding, supervising and evaluating authority.

### 3.4.3 Human Resources Development and Training

Besides overall effective utilization of employees, CPC enforce the training for expertise for different business requirement and work hard on cultivating management talent. At the same time, CPC actively recruit new young bloods and would like to have high quality human resource to lead the company development and elevate the competitiveness of the company.

#### Human Resources Development and Training Policy



#### 2015 Important Achievement in Talent Cultivating

- There are total 40,986 training hours for CPC e-college courses.
- With 343 persons joining 20 classes of foreign language learning, it really enhanced employees' foreign language capability.
- Holding work safety, gender equality and personal data privacy courses with total training hours of 64,544 and 11,906 persons participating.
- The total employee training hours is 686,400. The average training hours for female staff is 52, while for male is 46. CPC strives for gender equality in training to prepare all employees for the expertise needed for their profession.

2015 Employee Education and Training Summary						
Employee Level	Number of People		Training Hours		Average Training Hours for Employee	
	Female	Male	Female	Male	Female	Male
Manager <sup>Note</sup>	138	824	7,266.50	44,267.00	53	54
Non-manager	1,673	12,050	86,601.00	548,265.50	52	45
Total	1,811	12,874	93,867.50	592,532.50	52	46

Note : Managers mean those who have commanding, supervising and evaluating authority.

### Employee Education and Training Summary for the Last 3 Years

	Manager Training		Professional Training		Second Professional Specialty Training		Others	
	classes	person-time	classes	person-time	classes	person-time	classes	person-time
2013	218	4,781	2,469	72,293	209	10,098	443	24,181
2014	45	2,095	2,255	55,313	153	8,445	620	30,986
2015	52	1,887	2,281	66,912	128	6,767	570	31,528

#### Employee Performance Evaluation

Every year in the mid-year and year end, CPC would evaluate all employees for their performance and regularly track the achievement for proper rewards or punishments. CPC is also working on research and check on professional skills needed for core professions and use it as the reference for internal promotion and interview questions. CPC wants to be able to pick the persons with proper working attitude and ideas to join us.

Item	Percentage of Employees Evaluated
Percentage of Male Employees Evaluated	94.72%
Percentage of Female Employees Evaluated	92.56%

### 3.4.4 Employees' Rights and Benefits

#### Ensure the Rights and Benefits of the Employee

- College education loan for employees' children
- Medical subsidy for employees and their dependents
- No interest loan for emergency
- Loan for marriage and child birth

#### Welfare Funds

#### Benefits

- Health insurance, public servant insurance, labor insurance and group insurance
- Overseas travel and injury insurance
- Consolation payment for injury, deformity or death in line of duty

- Library
- Swimming pool
- Sports courts and fields and stadium

#### Facilities

#### Club Activities

- Ball games, bridge and chess, mountain climbing, swimming, painting and drawing, and movie

#### Others

If regional offices cannot afford to setup kindergartens, nearby evaluated and accredited kindergartens or preschools can be signed as special discounted ones for employees.



# 3.5 Cheering for Love

CPC works tirelessly on "community caring", "looking after under privileged groups", "public welfare activity" and "energy education and promotion" to build a harmonious society.

## 3.5.1 Caring the Society

### ► Good Relationship with the Communities

#### Implement Environmental Protection

- ▶ Since 2013, CPC has been broadening the "Caring the land and cleaning the earth", mountain and beach cleaning activity. Held twice annually, CPC would like to encourage the people to care our land, clean our earth, save energy and reduce carbon for us to be able to co-exist with the environment for a long time.



#### Care of Under-Privileged People

- ▶ Held "Send warmth in winter" charity event in Dec., 2015. 1.48 million NT dollars were donated and sent to various charities.
- ▶ Regularly hold blood donation activities. In 2015, over 1.2 million CC of blood is donated with 3,457 person donated.



#### Advancing Community Harmony

- ▶ Expanding the existing summer camp program for nearby elementary schools, we invited under-privileged school students to join the summer camp held in CPC Chiayi Training Center in 2015.
- ▶ In 2015, there are 128 summer camps with 205 well trained counselors giving 3,628 kids a unforgettable summer.



#### Deepen Neighborhood Relationship with Various Activities

- ▶ Yong-an LNG factory supplies free cool water to fish farmers.
- ▶ CPC hope diamond water, aka, cool water from NG factory, becomes the best example of corporation sharing resources with local community.



CPC 70, Caring the Land and Cleaning the Earth.

Youtube CPC Advertisement: Green Dragon Creating Summer Camp, Cheer Children up

Youtube Video: CPC Diamond Water, Good Local Neighbor

Chinese Television System Report: Green Dragon Creating Summer Camp, 4 thousands Children Participated.

## 3.5.2 Lively and Happy Homeland

For existing or new investment, CPC would do full evaluation to reduce the impact to the local community.

### Key Points to Be Evaluated for New Investment

- ▶ Physical and chemical impacts (weather and air quality, noise and vibration, hydrology and water quality, soil, waste and landform and geology).
- ▶ Eco-environment (terrestrial and aquatic).
- ▶ Social economy environment (population and jobs, land utilization and local development).
- ▶ Transportation, cultural environment, and other public concerned issues.
- ▶ In 2015, CPC always evaluates and coordinate with local community to resolve potential impacts caused by investment programs.

### Impact caused by CPC's Investment Programs for the Last Few Years

Project	Replacing equipment for distillation and related units in Dalin Refinery, Refining Business Division.
Scope, Cost, Duration	<ul style="list-style-type: none"> <li>▶ Still designing and constructing up to end of 2015.</li> <li>▶ A distillation facility capable of daily 150 thousand barrel production; A condensate processing unit capable of dealing with 50 thousand barrel of condensate every day; A diesel hydro-desulfurization processing facility that can handle 40 thousand barrel per day; A kerosene hydro-desulfurization processing unit capable of processing 30 thousand barrels daily.</li> <li>▶ Project period is from July, 2011 to June, 2017.</li> <li>▶ Total investment of NTD 20.5 billion.</li> </ul>
Impact to the Local Community	<ul style="list-style-type: none"> <li>▶ Provide naphtha to Dalin and Linyuan factories. Respond to the ever stricter environmental regulations, and provide environmental friendly fuel to reduce pollution.</li> <li>▶ With the job force required for the factory, it would be a great help to Kaohsiung area job market.</li> </ul>
Project	Phase 2 investment plan, Taichung factory, Natural Gas Business Division.
Scope, Cost, Duration	<ul style="list-style-type: none"> <li>▶ Build three 160-thousand kiloliter LNG storage tanks with 300 tons per hour gasification facility and construct 21.5 kilometer land pipes.</li> <li>▶ Project period is from July, 2012 to December, 2018.</li> <li>▶ Total investment of NTD18.5 billion.</li> </ul>
Impact to the Local Community	<ul style="list-style-type: none"> <li>▶ Supplement project to the expansion plan for Tongxiao power generation station, Taiwan Power Company.</li> <li>▶ Respond to the additional NG required due to the increased power generation capacity of Tatan power generation station.</li> <li>▶ Add days of NG turnover and increase natural gas supply safety and stability.</li> <li>▶ Make power supply from Taiwan Power Company more stable and boost economy development.</li> </ul>
Project	Oil barge Renewed Project
Scope, Cost, Duration	<ul style="list-style-type: none"> <li>▶ Newly construction two 40 thousand ton product carriers and five oil barges to replace existing old single hull vessels.</li> <li>▶ Project period is from July, 2014 to December, 2017.</li> <li>▶ Total investment of NTD3.6 billion.</li> </ul>
Impact to the Local Community	<ul style="list-style-type: none"> <li>▶ Reduce pollutant emission from oil transporting and the oil pollution from hull damage accident. Minimize environmental impact.</li> </ul>

### ► Public Protests and Demonstrations

CPC would full heartedly work on review, investigation and improvement, and actively communicate with the locals to prevent any similar incidents from happening.

### ► Serious Leakage Accidents

In 2015, there were 4 serious leakage accidents which were described below.

Serious Leakage Accidents	
Time	Description
2015/03/11	Leakage found from the pipelines between Dalin Refinery and Linyuan Petrochemical Complex. It's the highly volatilize mixture of nitrogen and propylene. It's tough to estimate the amount of leakage.
2015/04/08	Chiayi-Tainan Branch found oil leakage in 313.65 Km National Highway 1, with 14 KL fuel oil leaked.
2015/11/02	Keelung Branch found oil leakage in 13.5 Km National Highway 1, with 12.9 KL fuel oil leaked.
2016/01/26	Formosa Plastics Corporation informed Nanzih station, Kaohsiung Natural gas supply center that there was gas leakage near its front gate. After investigation, the leakage came from Natural Gas pipelines. As repaired the leaked pipelines, 3,926 m <sup>3</sup> Natural Gas was released.

## 3.5.3 Social Care Expenditure

Social Care Expense for the Last 3 Years			unit: NTD thousand
Item	2013	2014	2015
Culture and Education	49,137	20,179	28,801
Scholarship	1,697	267	426
Emergency Aid	2,954	2,935	3,909
Low Income Family Assist	3,494	7,451	7,818
Benefits to Elderly and Physically Challenged	44,211	35,303	36,256
Other Charity Events	365,439	299,876	319,497
<b>Total</b>	<b>466,933</b>	<b>366,011</b>	<b>396,706</b>

## 3.5.4 Participation of Association and Society

All CPC divisions and departments would actively join related business associations or organizations domestically or internationally. Up to the end of 2015, CPC has participated in World Business Council for Sustainable Development (WBCSD), the International Group of Liquefied Natural Gas Importers (GIIGNL), National Fire Protection Association (NFPA), American Safety Council, and others with total of 17 associations or organizations. Domestically, CPC has joined Petrochemical Industry Association of Taiwan, the Third Wednesday Club, Red Cross Society of the Republic of China, BCSD-Taiwan, Cross-Strait CEO Summit and others with total of 53 associations or organizations.

### 3.5.5 2015 Awards and Honors

Awards are the reward and affirmation of our hard working, and the motivation to our continuing progress.

Variety	Awards
Society Contribution	<ul style="list-style-type: none"> <li>▶ Enterprise Sustainable Achievement Award , Creative Communication Award and Society Harmony Award under enterprise sustainable achievement category, Taiwan Institute for Sustainable Energy (TAISE) .</li> <li>▶ Taiwan Top 50 CSR under energy industry category, TAISE.</li> <li>▶ Shipper and Harbor operation Award, 2014, Taiwan International Ports Corporation, LTD., (TIPC) .</li> <li>▶ Outstanding Achievement Award, 2014, Port of Kaohsiung, TIPC.</li> <li>▶ Reader's Digest Trusted Brands 2015.</li> <li>▶ Special Contribution to Port of Kaohsiung, 61stMaritime Festival, Kaohsiung.</li> <li>▶ Taiwan Community Sponsorship, BCSD-Taiwan.</li> <li>▶ First place in service, Gas station, Next Magazine for the 10<sup>th</sup> year in a row.</li> <li>▶ Management Magazine "Best brand for consumers": first place in gas station for the 11<sup>th</sup> year in a row.</li> <li>▶ Premium Unit, 2015, National Key Infrastructure Facility Protection Training and Exercise, Executive Yuan.</li> <li>▶ Outstanding contribution, Network Hacking Prevention Training and Exercise, 2015, National Information &amp; Communication Security Taskforce, Executive Yuan.</li> <li>▶ Sustainable Management Fulfillment Award, British Standards Institution (BSI).</li> <li>▶ Outstanding Manager, Taiwan Chain Stores and Franchise Association (TCFA).</li> <li>▶ Certificate of merit for "Public-spirited and Supporting consumer protection", Consumers' Foundation, Chinese Taipei.</li> <li>▶ Sponsor Art Brut Exhibition and support physically or mentally challenged artists.</li> </ul>
Engineering Quality	<ul style="list-style-type: none"> <li>▶ Public Construction Quality Award, 2015, MOEA, Taichung LNG factory, Natural Gas Business Division.</li> <li>▶ Public Construction Quality Award, 2015, MOEA, Taoyuan Refinery, Refining Business Division.</li> <li>▶ Public Construction Quality Award, 2015, MOEA, Dalin Refinery, Refining Business Division.</li> <li>▶ 15th Public Construction Quality Golden Award, Honorable Mention, facility category, Public Construction Commission, Executive Yuan, Taichung LNG factory, Natural Gas Business Division.</li> <li>▶ 15th Public Construction Quality Golden Award, Honorable Mention, facility category, Public Construction Commission, Executive Yuan, Taoyuan Refinery, Refining Business Division.</li> </ul>
Industry Safety	<ul style="list-style-type: none"> <li>▶ Outstanding Unit for Work Place Safety and Sanity, 2014, Taichung City Government, Taichung LNG factory, Natural Gas Business Division.</li> <li>▶ Outstanding Unit for Work Place Safety and Sanity, 2014, Tainan City Government, Southern District operation unit, Natural Gas Business Division.</li> </ul>
Environmental Protection	<ul style="list-style-type: none"> <li>▶ Golden Award, Contribution to Environmental Protection, 2015, TIPC, Taichung LNG factory, Natural Gas Business Division.</li> <li>▶ Bronze Prize, Manufacturing group, 24th ROC Enterprises Environmental Protection Award, Taichung LNG factory, Natural Gas Business Division.</li> <li>▶ Premium Air Purifying Quality Adoption Unit, 2015, Environmental Protection Administration, Executive Yuan, Dalin Refinery, Refining Business Division.</li> <li>▶ Outstanding Local area Joint Defense Organization, Joint Defense Operation for Toxic Material 2015, Environmental Protection Administration, Executive Yuan, Petrochemical Business Division.</li> <li>▶ Outstanding Water Saving Unit, Promotion Fair and Selection for water saving units and person, Water Resources Agency, MOEA, Linyuan Petrochemical Complex, Petrochemical Business Division.</li> <li>▶ Outstanding Office in Carbon Reduction, 2015, Environmental Protection Administration, Executive Yuan, Project &amp; Construction Division.</li> <li>▶ Premium Air Purifying Quality Adoption Unit, Environmental Protection Bureau Kaohsiung City Government, Dalin Refinery, Refining Business Division.</li> <li>▶ Outstanding company for continuing facility inspecting and monitoring 2015, Kaohsiung City Government, Linyuan Petrochemical Complex, Petrochemical Business Division.</li> <li>▶ Outstanding Greenhouse Gas Reduction for cross department collaboration, Kaohsiung City Government, Linyuan Petrochemical Complex, Petrochemical Business Division.</li> </ul>

# Appendix 1:

## Global Reporting Initiative, GRI G4 Version Reference Table

■ Represent Major Issue

NO	GRI Content Index	GRI-G4	Note
<b>Strategy and Analysis</b>			
G4-1	Provide a statement from the most senior decision-maker of the organization (such as CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and the organization's strategy for addressing sustainability.	Our Ultimate Commitment	
G4-2	Provide a description of key impacts, risks, and opportunities.	Our Ultimate Commitment 1.3.5 Risk Management	
<b>Organization Profile</b>			
G4-3	Report the name of the organization.	1.1.2 About CPC	
G4-4	Report the primary brands, products, and services.	1.1.2 About CPC	
G4-5	Report the location of the organization's headquarters.	1.1.2 About CPC	
G4-6	Report the number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report.	1.1.3 Operation Locations	
G4-7	Report the nature of ownership and legal form.	1.1.2 About CPC	
G4-8	Report the markets served (including geographic breakdown, sectors served, and types of customers and Beneficiaries).	1.1.3 Operation Locations	
G4-9	Report the scale of the organization, including: -Total number of employees.                      -Total number of operations. -Net sales (for private sector organizations) or net revenues (for public sector organizations) . -Total capitalization broken down in terms of debt and equity (for private sector organizations) .t the scale of the organization, including: -Quantity of products or services provided.	1.1.2 About CPC 1.1.3 Operation Locations 1.2.1 Financial Achievement 1.2.2 Operation Overview	
G4-10	Report the total number of employees by employment contract and gender.	3.4.2 Hiring Employees	
G4-11	Report the percentage of total employees covered by collective bargaining agreements.	3.4.1 Respecting Human Rights	
G4-12	Describe the organization' s supply chain.	3.2.4 Social Responsibility Management of Supply Chain	
G4-13	Report any significant changes during the reporting period regarding the organization' s size, structure, ownership, or its supply chain.	1.1.2 About CPC	
G4-14	Report whether and how the precautionary approach or principle is addressed by the organization.	2.2 Fulfilling Environment Protection	
G4-15	List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses.	3.5.5 2015 Awards and Honors	
G4-16	List memberships of associations (such as industry associations) and national or international advocacy, organizations in which the organization.	3.5.4 Participation of Association and Society	
<b>Identified Material Aspects and Boundaries</b>			
G4-17	List all entities included in the organization's consolidated financial statements or equivalent documents.	Editing Principles	
G4-18	Explain the process for defining the report content and the Aspect Boundaries. Explain how the organization has implemented the Reporting Principles for Defining Report Content.	Editing Principles 1.4.2 Major Issue Analysis	
G4-19	List all the material aspects identified in the process for defining report content.	1.4.2 Major Issue Analysis	
G4-20	For each material aspect, report the Aspect Boundary within the organization.	1.4.2 Major Issue Analysis	
G4-21	For each material aspect, report the Aspect Boundary outside the organization.	1.4.2 Major Issue Analysis	
G4-22	Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements.	Editing Principles	
G4-23	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries.	Editing Principles	
<b>Stakeholder Engagement</b>			
G4-24	Provide a list of stakeholder groups engaged by the organization.	Editing Principles	
G4-25	Report the basis for identification and selection of stakeholders with whom to engage.	Editing Principles	



NO	GRI Content Index	GRI-G4	Note	
G4-26	Report the organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process.	1.3.4 Transparency of Information Revelation 1.4.1 Communicating with Stakeholders		
G4-27	Report key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns.	1.4.1 Communicating with Stakeholders		
<b>Report Profile</b>				
G4-28	Reporting period (such as fiscal or calendar year) for information provided.	Editing Principles		
G4-29	Date of most recent previous report (if any).	Editing Principles		
G4-30	Reporting cycle (such as annual, biennial).	Editing Principles		
G4-31	Provide the contact point for questions regarding the report or its contents.	Editing Principles		
G4-32	a. Report the 'in accordance' option the organization has chosen. b. Report the GRI Content Index for the chosen option. c. Report the reference to the External Assurance Report, if the report has been externally assured.	Editing Principles		
G4-33	a. Report the organization's policy and current practice with regard to seeking external assurance for the report. b. If not included in the assurance report accompanying the sustainability report, report the scope and basis of any external assurance provided. c. Report the relationship between the organization and the assurance providers. d. Report whether the highest governance body or senior executives are involved in seeking assurance for the organization's sustainability report.	Editing Principles		
<b>Governance report Profile</b>				
G4-34	Report the governance structure of the organization, including committees of the highest governance body. Identify any committees responsible for decision-making on economic, environmental and social impacts.	1.3.1 Management Structure 1.3.3 Pushing for Sustainable Management		
G4-35	Report the process for delegating authority for economic, environmental and social topics from the highest governance body to senior executives and other employees.	1.3.3 Pushing for Sustainable Management		
G4-36	Report whether the organization has appointed an executive-level position or positions with responsibility for economic, environmental and social topics, and whether post holders report directly to the highest governance body.	1.3.3 Pushing for Sustainable Management		
G4-37	Report processes for consultation between stakeholders and the highest governance body on economic, environmental and social topics. If consultation is delegated, describe to whom and any feedback processes to the highest governance body.	1.3.1 Management Structure		
G4-38	Report the composition of the highest governance body and its committees.	1.3.1 Management Structure 1.3.3 Pushing for Sustainable Management		
G4-39	Report whether the Chair of the highest governance body is also an executive officer.	1.3.1 Management Structure		
G4-41	Report processes for the highest governance body to ensure conflicts of interest are avoided and managed. Report whether conflicts of interest are disclosed to stakeholders.	1.3.1 Management Structure		
<b>Ethics and Integrity</b>				
G4-56	Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics.	1.3.1 Management Structure		
Aspect	No	GRI Content Index	Respective section or chapter	Note
Economic Performance	G4-DMA	Report management guidelines regarding to economy aspects.	1.2	Operation Achievement
	G4-EC1	Report the direct economic value generated and distributed.	1.2.1 Financial Achievement 3.4.1 Respecting Human Rights 3.4.4 Employee's Rights and Benefits	
	G4-EC2	Report risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue or expenditure.	2.2.1 Climate Change Risks and Responses	
	G4-EC3	Report the organization's defined benefit plan obligations.	3.4.1 Respecting Human Rights	
	G4-EC4	Report the financial assistance received from government.	1.2.1 Financial Achievement	
Indirect Economy Impacts	G4-DMA	Report management guidelines regarding to indirect economy impacts.	3.5	Cheering for Love
	G4-EC7	Report the extent of development of significant infrastructure investments and services supported.	3.1.2 Outstanding and Innovative Gas Stations 3.5.2 Lively and Happy Homeland	

Aspect	No	GRI Content Index	Respective section or chapter	Note
	G4-EC8	Report examples of the significant identified positive and negative indirect economic impacts the organization has.	3.5.2	Lively and Happy Homeland
Procurement	G4-DMA	Report management guidelines for procurement.	3.2.1	Characteristics of Overseas Purchase
	E4-EC9	Report the percentage of the procurement budget used for significant locations of operation spent on suppliers local to that operation.	2.2.1	Climate Change Risks and Responses
<b>Environment</b>				
Raw Materials	G4-DMA	Report the management guidelines for raw materials.	2.3	Achievement on Greening
	G4-EN1	Report the total weight or volume of raw materials used.	2.3.3	2015 Environment Footprint
	G4-EN2	Report the percentage of recycled input materials used.	2.4	Green Products
Energy	G4-DMA	Report the management guidelines for energy management.	2.2.2	Energy and Electricity Saving
	G4-EN3	Report the energy consumption within the organization.	2.2.2	Energy and Electricity Saving
	G4-EN5	Report the energy intensity.	2.1.2	Environment Cost and Benefits
			2.2.2	Energy and Electricity Saving
	G4-EN6	Report the amount of reductions in energy consumption.	2.2.2	Energy and Electricity Saving
		2.3.1	Green Offices	
G4-EN7	Report the reductions in the energy requirements of sold products and services.	2.4	Green Products	
Water	G4-DMA	Report the management guidelines for water.	2.2.5	Water Resources Management
	G4-EN8	Report the total volume of water withdrawn from various sources.	2.2.5	Water Resources Management
	G4-EN9	Report the total number of water sources significantly affected by withdrawal.	2.2.5	Water Resources Management
	G4-EN10	Report the total volume of water recycled and reused and as a percentage of the total water withdrawal by the organization.	2.2.6	Waste Water Prevention and Treatment
Bio-diversity	G4-DMA	Report the management guidelines for bio-diversity.	2.2.10	Emphasizing on Bio-diversity
	G4-EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	2.2.10	Emphasizing on Bio-diversity
	G4-EN13	Report the size and location of all habitat protected areas or restored areas.	2.2.10	Emphasizing on Bio-diversity
Emission	G4-DMA	Report the management guidelines for emission.	2.2.3	Greenhouse Gas Reduction Management and Achievement
	G4-EN15	Report gross direct (Scope 1) GHG emissions in metric tons of CO <sub>2</sub> equivalent.	2.2.3	Greenhouse Gas Reduction Management and Achievement
	G4-EN16	Report gross energy indirect (Scope 2) GHG emissions in metric tons of CO <sub>2</sub> equivalent.	2.2.3	Greenhouse Gas Reduction Management and Achievement
	G4-EN18	Report the GHG emissions intensity ratio.	2.1.2	Environment Cost and Benefits
	G4-EN19	Report the amount of GHG emissions reductions.	2.2.3	Greenhouse Gas Reduction Management and Achievement
			2.3.2	Cold Energy Utilization
G4-EN21	Report the amount of significant air emissions, in kilograms or multiples for NO <sub>x</sub> , SO <sub>x</sub> , and other particular matters.	2.2.4	Air Pollution Prevention	
Effluents and Waste	G4-DMA	Report the management guidelines for effluents and waste.	2.2.6	Waste Water Prevention and Treatment
			2.2.7	Soil and Groundwater
	G4-EN22	Report the total volume of planned and unplanned water discharges by destination and quality of water.	2.2.6	Waste Water Prevention and Treatment
	G4-EN23	Report the total weight of hazardous and non-hazardous waste by variety and disposal method.	2.2.8	Waste Material Management
G4-EN24	Report the total number and total volume of recorded significant spills.	3.5.2	Lively and Happy Homeland	
Products and Services	G4-DMA	Report the management guidelines for products and services.	2.4	Green Products
	G4-EN27	Report quantitatively the extent to which environmental impacts of products and services. Report the management guidelines for compliance.	2.4	Green Products
Compliance	G4-DMA	Report the management guidelines for compliance.	2.1	Green Management
	G4-EN29	Report the monetary value of significant fines and the number of non-monetary sanctions.	2.1	Green Management
Overall Condition	G4-DMA	Report the management guidelines for overall management.	2.1.2	Environment Cost and Benefits
	G4-EN31	Report total environmental protection expenditures.	2.1.2	Environment Cost and Benefits
	G4-DMA	Report the management guidelines for supplier environmental assessment.	3.2.4	Social Responsibility Management of Supply Chain

Aspect	No	GRI Content Index	Respective section or chapter	Note
Environmental Assessment	G4-EN32	Report the percentage of new suppliers that were screened using environmental criteria.	3.2.4 Social Responsibility Management of Supply Chain	100%
	G4-EN33	Report the number of suppliers subject to environmental impact assessments and corresponding actions.	3.2.4 Social Responsibility Management of Supply Chain	Not happened
Environmental Grievance Mechanisms	G4-DMA	Report the management guidelines for environmental grievance mechanisms.	1.4.1 Communicating with Stakeholders	
	G4-EN34	Report the total number of grievances about environmental impacts filed, addressed through formal grievance mechanisms.	1.4.1 Communicating with Stakeholders 2.1 Green Management	
<b>Labor Practices and Decent Work</b>				
Labor/Management Relations	G4-DMA	Report the management guidelines for employment.	3.4.2 Hiring Employees	
	G4-LA1	Report the total number, rate of new employee hires and rate of employee turnover during the reporting period, by age group, gender and region.	3.4.2 Hiring Employees	
	G4-LA2	Report the benefits which are standard for full-time employees of the organization but are not provided to temporary or part-time employees by significant locations of operation.	3.4.4 Employee's Rights and Benefits	
	G4-LA3	Report the total number of employees that were entitled to parental leave, took parental leave, returned to work after parental leave ended, who returned to work after parental leave ended, and who were still employed twelve months after their return to work, by gender.	3.4.1 Respecting Human Rights	
Labor/Management Relations	G4-DMA	Report the management guidelines for labor/management relations.	3.4.1 Respecting Human Rights	
	G4-LA4	Report the minimum number of weeks' notice typically provided to employees and their elected representatives prior to the implementation of significant operational changes that could substantially affect them.	3.4.1 Respecting Human Rights	
Occupational Health and Safety	G4-DMA	Report the management guidelines for occupational health and safety.	3.3.2 Occupational Safety and Sanitary Management	
	G4-LA5	Report the level at which each formal joint management-worker health and safety committee typically operates within the organization and the percentage of the total workforce represented in formal joint management-worker health and safety committees.	3.3.2 Occupational Safety and Sanitary Management	
	G4-LA6	Report types of injury, injury rate (IR), occupational diseases rate (ODR), lost day rate (LDR), absentee rate (AR) and work-related fatalities, for the total workforce (that is, total employees plus supervised workers) by region and gender.	3.3.4 Workplace Safety Achievement	
	G4-LA7	Report whether there are workers who are involved in occupational activities who have a high incidence or high risk of specific diseases.	3.3.5 Healthy Working Environment	
Training and Education	G4-DMA	Report the management guidelines for training and education.	3.4.3 Human Resources Development and Training	
	G4-LA9	Report the average hours of training that the organization's employees have undertaken during the reporting period, by gender and employment category.	3.4.3 Human Resources Development and Training	
	G4-LA10	Report on the type and scope of programs implemented and assistance provided to upgrade employee skills.	3.4.3 Human Resources Development and Training	
	G4-LA11	Report the percentage of total employees by gender and by employee category who received a regular performance and career development review.	3.4.3 Human Resources Development and Training	
Diversity and Equal Opportunity	G4-DMA	Report the management guidelines for diversity and equal opportunity.	3.4.2 Hiring Employees	
	G4-LA12	Report the percentage of individuals within the organization's governance bodies in each of the following diversity categories: gender, age group, minority groups and Other indicators of diversity where relevant.	3.4.2 Hiring Employees	
Equal Remuneration for Women and Men	G4-DMA	Report the management guidelines for equal remuneration for women and men.	3.4.1 Respecting Human Rights	
	G4-LA13	Report the ratio of the basic salary and remuneration of women to men for each employee category, by significant locations of operation.	3.4.1 Respecting Human Rights	
Supplier Assessment for Labor Practices	G4-DMA	Report the management guidelines for supplier assessment for labor practices.	3.2.4 Social Responsibility Management of Supply Chain	
	G4-LA14	Report the percentage of new suppliers that were screened using labor practices criteria.	3.2.4 Social Responsibility Management of Supply Chain	100%
	G4-LA15	Report the significant actual and potential negative impacts for labor practices identified in the supply chain and the corresponding actions.	3.2.4 Social Responsibility Management of Supply Chain	Not happened

Aspect	No	GRI Content Index	Respective section or chapter	Note
Labor Practices	G4-DMA	Report the management guidelines for labor practices grievance mechanisms.	1.4.1 Communicating with Stakeholders	
Grievance Mechanisms	G4-LA16	Report the total number of grievances about labor practices filed, addressed and resolved through formal grievance mechanisms.	1.4.1 Communicating with Stakeholders	Not happened
<b>Human Rights</b>				
Non-discrimination	G4-DMA	Report the management guidelines for non-discrimination.	3.4.1 Respecting Human Rights	
	G4-HR3	Report the total number of incidents of discrimination and the actions taken to resolve the cases.	3.4.1 Respecting Human Rights	Not happened
Freedom of Association and Collective Bargaining	G4-DMA	Report the management guidelines for freedom of association and collective bargaining.	3.4.1 Respecting Human Rights	
	G4-HR4	Report operations and suppliers in which employee rights to exercise freedom of association or collective bargaining may be violated or at significant risk and the corresponding actions taken.	3.2.4 Social Responsibility Management of Supply Chain 3.4.1 Respecting Human Rights	Not happened
Child Labor	G4-DMA	Report the management guidelines for child labor.	3.4.2 Hiring Employees	
	G4-HR5	Report operations and suppliers considered to have significant risk for incidents of child labor and measures taken by the organization to contribute to the effective abolition of child labor.	3.2.4 Social Responsibility Management of Supply Chain 3.4.2 Hiring Employees	Not happened
Forced or Compulsory Labor	G4-DMA	Report the management guidelines for forced or compulsory labor.	3.4.1 Respecting Human Rights	
	G4-HR6	Report operations and suppliers considered to have significant risk for incidents of forced or compulsory labor and the measures taken by the organization to contribute to the elimination of all forms of forced or compulsory labor.	3.2.4 Social Responsibility Management of Supply Chain 3.4.1 Respecting Human Rights	Not happened
Security Practices	G4-DMA	Report the management guidelines for security practices.	3.3.2 Occupational Safety and Sanity Management	
	G4-HR7	Report the percentage of security personnel who have received formal training in the organization' s human rights policies or specific procedures and their application to security.	3.3.2 Occupational Safety and Sanity Management	
Indigenous Rights	G4-DMA	Report the management guidelines for indigenous rights.	3.4 So Good to Have You	
	G4-HR8	Report the total number of identified incidents of violations involving the rights of indigenous peoples and the measures taken to stop the violations.	3.4.1 Respecting Human Rights	Not happened
Supplier Human Rights Assessment	G4-DMA	Report the management guidelines for supplier human rights assessment.	3.2.4 Social Responsibility Management of Supply Chain	
	G4-HR10	Report the percentage of new suppliers that were screened using human rights criteria.	3.2.4 Social Responsibility Management of Supply Chain	100%
	G4-HR11	Report the number of suppliers identified as having significant actual and potential negative human rights impacts and corresponding measures taken.	3.2.4 Social Responsibility Management of Supply Chain	Not happened
Human Rights Grievance Mechanisms	G4-DMA	Report the management guidelines for human rights grievance mechanisms.	1.4.1 Communicating with Stakeholders	
	G4-HR12	Report the total number of grievances about human rights impacts filed, addressed and resolved through formal grievance Mechanisms.	1.4.1 Communicating with Stakeholders	Not happened
<b>Society</b>				
Local Communities	G4-DMA	Report the management guidelines for local communities.	3.5 Cheering for Love	
	G4-SO2	Report operations with significant actual and potential negative impacts on local communities.	3.5.1 Caring the Society	
Anticorruption	G4-DMA	Report the management guidelines for anti-corruption.	1.3 Company Management	
	G4-SO4	Report the total number and percentage of governance body members that the organization' s anticorruption policies and procedures have been communicated and trained to.	1.3.2 Adhering to Honesty and Ethic Value	
	G4-SO5	Report the total number and nature of confirmed incidents of corruption and the corresponding actions taken.	1.3.2 Adhering to Honesty and Ethic Value	Not happened
Public Policy	G4-DMA	Report the management guidelines for public policy.	1.3 Company Management	
	G4-SO6	Report the total monetary value of financial and in-kind political contributions made directly and indirectly by the organization.	1.2.1 Financial Achievement	
Compliance	G4-DMA	Report the management guidelines for compliance.	1.3 Company Management	
	G4-SO8	Report the amount of significant fines and the number of non-monetary sanctions.	1.3.2 Adhering to Honesty and Ethic Value	Not happened
Supplier Assessment for Impacts On Society	G4-DMA	Report the management guidelines for supplier assessment for impacts on society.	3.2.4 Social Responsibility Management of Supply Chain	
	G4-SO9	Report the percentage of new suppliers that were screened using criteria for impacts on society.	3.2.4 Social Responsibility Management of Supply Chain	100%

Aspect	No	GRI Content Index	Respective section or chapter	Note
	G4-SO10	Report the number of suppliers identified as having significant actual and potential negative impacts on society and the corresponding measures taken.	3.2.4 Social Responsibility Management of Supply Chain	Not happened
Grievance Mechanisms for Impacts On Society	G4-DMA	Report the management guidelines for grievance mechanisms for impacts on society.	1.4.1 Communicating with Stakeholders	
	G4-SO11	Report the total number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms.	3.5.2 Lively and Happy Homeland	
<b>Product responsibility</b>				
Customer Health and Safety	G4-DMA	Report the management guidelines for customer health and safety.	3.1.1 Providing Clean and Diversified Products	
	G4-PR2	Report the total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services within the reporting period by type of outcomes.	3.1.1 Providing Clean and Diversified Products	Not happened
Product and Service Labeling	G4-DMA	Report the management guidelines for product and service labeling.	3.1.1 Providing Clean and Diversified Products	
	G4-PR3	Report the type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirement.	3.1.1 Providing Clean and Diversified Products	
	G4-PR4	Report the total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.	3.1.1 Providing Clean and Diversified Products	Not happened
Marketing Communications	G4-PR5	Report the results or key conclusions of customer satisfaction surveys.	3.1.3 Customer Satisfaction	
	G4-DMA	Report the management guidelines for marketing communications.	3.1 Customers and Us	
	G4-PR6	Report sale of banned or disputed products.	3.1.1 Providing Clean and Diversified Products	
Customer Privacy	G4-PR7	Report the total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes.	3.1.1 Providing Clean and Diversified Products	Not happened
	G4-DMA	Report the management guidelines for customer privacy.	3.1 Customers and Us	
Compliance	G4-PR8	Report the total number of substantiated complaints received concerning breaches of customer privacy and losses of customer data.	3.1.3 Customer Satisfaction	
	G4-DMA	Report the management guidelines for following law and regulations.	3.1 Customers and Us	
	G4-PR9	Report the total monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.	3.1.1 Providing Clean and Diversified Products	Not happened

## Supplement Guide for Oil and Gas Industry

No	Supplement Content	Respective section or chapter	Note
G4-OG1	Volume and type of estimated proved reserves and production	1.2.2 Operation Overview	
G4-OG2	Total amount invested in renewable energy	1.2.3 Research and Development	
G4-OG3	Total amount of renewable energy generated by source	2.5.1 Solar Energy	
G4-OG4	Number and percentage of significant operating sites in which biodiversity risk has been assessed and monitored	2.2.10 Emphasizing on Bio-diversity	No
G4-OG5	Volume and disposal of formation or produced water	2.2.6 Waste Water Prevention and Treatment	
G4-OG6	Volume of flared and vented hydrocarbon	2.2.4 Air Pollution Prevention	
G4-OG7	Amount of drilling waste (drill mud and cuttings) and strategies for treatment and disposal	2.2.8 Waste Material Management	
G4-OG8	Benzene, lead and sulfur content in fuels	2.2.4 Air Pollution Prevention	
G4-OG9	Operations where indigenous communities are present or affected by activities	3.5.2 Lively and Happy Homeland	
G4-OG10	Number and description of significant disputes with local communities and indigenous peoples	3.5.2 Lively and Happy Homeland	
G4-OG11	Number of sites that have been decommissioned and sites that are in the process of being decommissioned	3.5.2 Lively and Happy Homeland	
G4-OG12	Number of sites that have been decommissioned and sites that are being decommissioned	3.5.2 Lively and Happy Homeland	
G4-OG13	Number of process safety events, by business activity	3.3.2 Occupational Safety and Sanitary Management	
G4-OG14	Volume of biofuels produced and purchased meeting sustainability criteria	2.5.2 Biomass Energy	No



## Appendix 2: UN Global Compact Reference Table

Item	Article	Respective Section or Chapter
Human right	Businesses should support and respect the protection of internationally proclaimed human rights.	3.2 Affiliated Partners
	Business should make sure that they are not complicit in human rights abuses	3.4 So Good to Have You
Labor	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	3.4 So Good to Have You
	Businesses should uphold the elimination of all forms of forced and compulsory labor.	3.4 So Good to Have You
	Businesses should uphold the effective abolition of child labor.	3.4 So Good to Have You
	Businesses should uphold the elimination of discrimination in respect of employment and occupation.	3.4 So Good to Have You
Environment	Businesses should support a precautionary approach to environmental challenges.	2.1 Green management
	Businesses should undertake initiatives to promote greater environmental responsibility.	2.2 Fulfilling Environment Protection
	Businesses should undertake initiatives to promote greater environmental responsibility.	2.5 Green Energy
Anti-corruption	Businesses should work against corruption in all its forms, including extortion and bribery.	1.3 Company Management

## Appendix 3: Reference Table for ISO 26000 Social Responsibility Guide

Item	Article	Respective Section or Chapter
1.Organizational Governance	1.1 The decision-making system when the organization is marching toward its goals.	1.3 Company Management
2.Human Rights	2.1 Due diligence	3.4 So Good to Have You
	2.2 Human rights risk situations	3.2 Affiliated Partners
	2.3 Avoidance of complicity	3.4 So Good to Have You
	2.4 Resolving grievances	1.4 Communicating with Stakeholders
	2.5 Discrimination and vulnerable groups	3.4 So Good to Have You
	2.6 Civil and political rights	3.4 So Good to Have You
	2.7 Economic, social and cultural rights	3.4 So Good to Have You
	2.8 Fundamental principles and rights at work	3.4 So Good to Have You
3.Labor Practices	3.1 Employment and employment relationships	3.4 So Good to Have You
	3.2 Conditions of work and social protection	3.3 Sustainable Workplace
	3.3 Social dialogue	3.3 Sustainable Workplace
	3.4 Health and safety at work	3.3 Sustainable Workplace
	3.5 Human development and training in the workplace	3.3 Sustainable Workplace
4.The Environment	4.1 Prevention of pollution	2.2 Fulfilling Environment Protection
	4.2 Sustainable resource use	2.5 Green Energy
	4.3 Climate change mitigation and adaptation	2.1 Green Management
	4.4 Protection of the environment, biodiversity and restoration of natural habitats	2.2 Fulfilling Environment Protection
5.Fair Operating Practices	5.1 Anti-corruption	1.3 Company Management
	5.2 Responsible political involvement	1.3 Company Management
	5.3 Fair competition	3.1 Customers and Us
	5.4 Promoting social responsibility in the value chain	3.2 Affiliated Partners
	5.5 Respect for property rights	3.1 Customers and Us
6.Consumer Issues	6.1 Fair marketing, factual and unbiased information and fair contractual practices	3.1 Customers and Us
	6.2 Protecting consumers' health and safety	2.4 Green Products
	6.3 Sustainable consumption	2.4 Green Products
	6.4 Consumer service, support, and complaint and dispute resolution	1.4 Communicating with Stakeholders
	6.5 Consumer data protection and privacy	3.1 Customers and Us
	6.6 Access to essential services	3.1 Customers and Us
	6.7 Education and awareness	3.1 Customers and Us

Item	Article	Respective Section or Chapter
7.Community Involvement and Development	7.1 Community involvement	3.5 Cheering for Love
	7.2 Education and culture	3.5 Cheering for Love
	7.3 Employment creation and skills development	1.2 Operation Achievement
	7.4 Technology development and access	1.2 Operation Achievement
	7.5 Wealth and income creation	1.2 Operation Achievement
	7.6 Health	3.5 Cheering for Love
	7.7 Social investment	3.5 Cheering for Love

# Appendix 4: Assurance Statement from 3rd Party

## INDEPENDENT ASSURANCE OPINION STATEMENT

### CPC Corporation, Taiwan 2016 Corporate Sustainability Report

The British Standards Institution is independent to CPC Corporation, Taiwan (hereafter referred to as CPC Corporation in this statement) and has no financial interest in the operation of CPC Corporation other than for the assessment and assurance of this report.

This independent assurance opinion statement has been prepared for CPC Corporation only for the purposes of assuring its statements relating to its corporate social responsibility (CSR), more particularly described in the Scope below. It was not prepared for any other purpose. The British Standards Institution will not, in providing this independent assurance opinion statement, accept or assume responsibility (legal or otherwise) or accept liability for or in connection with any other purpose for which it may be used, or to any person by whom the independent assurance opinion statement may be read.

This independent assurance opinion statement is prepared on the basis of review by the British Standards Institution of information presented to it by CPC Corporation. The review does not extend beyond such information and is solely based on it. In performing such review, the British Standards Institution has assumed that all such information is complete and accurate.

Any queries that may arise by virtue of this independent assurance opinion statement or matters relating to it should be addressed to CPC Corporation only.

#### Scope

The scope of engagement agreed upon with CPC Corporation includes the followings:

1. The assurance covers the whole report focused on systems and activities during the 2015 calendar year on the CPC Corporation's headquarter and relevant operations, the environmental related performance information are focused in the Taoyuan, Dalin and Kaohsiung Refineries and Linyuan Petrochemical Plant.
2. The evaluation of the nature and extent of the CPC Corporation's adherence to all three AA1000 AccountAbility Principles in this report as conducted in accordance with type 1 of AA1000AS (2008) assurance engagement and therefore, the information/data disclosed in the report is not verified through the verification process.

This statement was prepared in English and translated into Chinese for reference only.

#### Opinion Statement

We conclude that the CPC Corporation 2016 Corporate Sustainability Report provides a fair view of the CPC Corporation CSR programmes and performances during 2015. The sustainability report subject to assurance is free from material misstatement based upon testing within the limitations of the scope of the assurance, the information and data provided by the CPC Corporation and the sample taken. We believe that the 2015 economic, social and environmental performance indicators are fairly represented. The CSR performance indicators disclosed in the report demonstrate CPC Corporation's efforts recognized by its stakeholders.

Our work was carried out by a team of CSR report assurers in accordance with the AA1000 Assurance Standard (2008). We planned and performed this part of our work to obtain the necessary information and explanations we considered to provide sufficient evidence that CPC Corporation's description of their approach to AA1000 Assurance Standard and their self-declaration in accordance with the core option of GRI G4 sustainability reporting guidelines were fairly stated.

#### Methodology

Our work was designed to gather evidence on which to base our conclusion. We undertook the following activities:

- a review of issues raised by external parties that could be relevant to CPC Corporation's policies to provide a check on the appropriateness of statements made in the report.
- discussion with managers and staffs on CPC Corporation's approach to stakeholder engagement. However, we had no direct contact with external stakeholders.
- 20 interviews with staffs involved in sustainability management, report preparation and provision of report information were carried out.
- review of key organizational developments.
- review of the findings of internal audits.
- review of supporting evidence for claims made in the reports.
- an assessment of the company's reporting and management processes concerning this reporting against the principles of Inclusivity, materiality and responsiveness as described in the AA1000 AccountAbility Principles Standard (2008).

#### Conclusions

A detailed review against the AA1000 AccountAbility Principles of Inclusivity, Materiality and Responsiveness and the G4 sustainability reporting guidelines is set out below:

### **Inclusivity**

This report has reflected a fact that CPC Corporation has been seeking the engagement of its stakeholders. The participation of stakeholders has been initiated in developing and achieving an accountable and strategic response to sustainability. The reporting systems are being developed to deliver the required information. There are fair reporting and disclosures for economic, social and environmental information in this report, so that appropriate planning and target-setting can be supported. In our professional opinion the report covers the CPC Corporation's inclusivity issues.

### **Materiality**

CPC Corporation publishes sustainability information that enables its stakeholders to make informed judgements about the company's management and performance. In our professional opinion the report covers the CPC Corporation's material issues.

### **Responsiveness**

CPC Corporation has implemented the practice to respond to the expectations and perceptions of its stakeholders. An Ethical Policy for CPC Corporation is developed and provides the opportunity to further enhance CPC Corporation's responsiveness to stakeholder concerns. Issues that stakeholder concern about have been responded timely. In our professional opinion the report covers the CPC Corporation's responsiveness issues, however, the future report should be further enhanced by the following areas:

- Encouraging to work towards a type 2 of AA1000AS (2008) engagement with a view to providing the reliability of sustainability performance information that stakeholder concerns.

### **GRI-reporting**

CPC Corporation provided us with their self declaration of 'in accordance' with the G4 sustainability reporting guidelines: the Core option (at least one indicator related to each identified material Aspect). Based on our review, we confirm that social responsibility and sustainable development indicators with reference to the GRI Index are reported, partially reported or omitted. In our professional opinion the self-declaration covers CPC Corporation's social responsibility and sustainability issues, however, the future report will be improved by the following areas:

- Continuously focus on the implementation of sustainability procedures and programs within the peers' practices along with the newly developed Standards.

### **Assurance level**

The moderate level assurance provided is in accordance with AA1000 Assurance Standard (2008) in our review, as defined by the scope and methodology described in this statement.

### **Responsibility**

This CSR report is the responsibility of CPC Corporation's chairman as declared in his responsibility letter. Our responsibility is to provide an independent assurance opinion statement to stakeholders giving our professional opinion based on the scope and methodology described.

### **Competency and Independence**

The assurance team was composed of Lead Auditors and Carbon Footprint Verifiers experienced in industrial sector, and trained in a range of sustainability, environmental and social standards including AA1000 AS, ISO14001, OHSAS18001, ISO14064 and ISO 9001. BSI is a leading global standards and assessment body founded in 1901. The assurance is carried out in line with the BSI Fair Trading Code of Practice.

*For and on behalf of BSI:*



Peter Pu  
Managing Director BSI Taiwan  
06 June, 2016

**bsi.**



**AA1000**  
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