

# 2015

## Sustainability Report



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# Our Ultimate Commitment:

## Innovative change for sustainability at CPC

Most companies have as a target the maximization of margins and profits as protection for the interests of their shareholders and employees. However, this pursuit has engendered serious ecological imbalance as a result of the chronically excessive demand for natural resources. Of late the international community has urged, indeed required companies to take responsibility - environmental, ethical and social – for their actions and in consequence there has emerged a variety of norms and standards in this respect.

CPC has for a long time fulfilled its responsibilities as a state-owned enterprise in terms of providing a stable supply of oil and gas to the domestic energy market and helping with midstream and downstream development in the petrochemical industry. Further, and particularly in respect of corporate social responsibility, the company has also continued to make good on its commitment to enhance the quality of life, promote social cohesion, raise environmental protection standards and create a harmonious society.

With a view to laying down a solid foundation for CPC's development of a modus operandi based on sustainability, we continue to work at both creating a more robust business model and improving profitability while also continuing to fulfill our corporate social responsibility commitment by holding to the precept of 'whatever you take from society, use for society'.

We therefore make the following promises to all stakeholders :

## A more robust business model - one that will strengthen core business competencies

Improved management performance will be brought about by rationalizing the organizational structure, reforming human resources administration and institutionalizing business experience and know-how so as to construct a fully corporatized environment. A sound financial structure, as well as a lower level of operating risk, will be secured by more effective use of both hedging mechanisms and controls over the supply of, and demand for funds.

Looking at CPC's five core businesses: in Exploration we will focus on core oil and gas fields and extend the scope of merger and acquisition activity; in Refining, enhance the technology to improve production efficiency and reduce production costs; in Petrochemicals, increase operational flexibility to help in developing High Value Added (HVA) products; in Oil Products, strengthen management's ability to diversify so as to expand channel functions; and in Natural Gas, widen its use and actively exploiting the multiplicity of LNG sources.

## Reinforce CPC's presence in global markets and boost its R&D capability

Faced with near saturation in its domestic market for oil products, CPC has already established - in Singapore - its first overseas trading base for this type of goods, as an early move in expanding its oil and gas trading network and reinforcing its presence in international energy markets.

Additionally, trading offices will be set up in Qatar and Dubai in the future as part of CPC's international presence; and a plan to establish overseas gas station channels is under assessment as to its feasibility for further scaling-up that participation in overseas markets.

In the field of Research and Development (R&D) - one to which we always pay close attention - the principal intention is to focus on its potential for the company's core business strategies. The work done by CPC's in-house research institutes on the development of sophisticated technologies will serve as strong backup for CPC in its global advance from a local footing.

## Total occupational safety in a zero pollution environment

Occupational safety has always been both the top priority and the ground-base of CPC's sustainable management policy, and as such its requirements will never be compromised. Our zero-tolerance safety rules mandate strict observance of Standard Operating Procedures (SOP) and severe penalties will be handed down for any unsafe behavior. In such ways is industrial safety discipline established, shaping the industry's industrial safety culture and making attainable the ultimate goal of '100% occupational safety, zero workplace accidents'.

CPC has put its best efforts into both making improvements to its manufacturing processes and introducing advanced energy conservation technology so as to reduce carbon emissions and help cope with global warming. As a result, the carbon reduc-

tion accumulated over the last decade has reached 2.53 million tons. In the future, we will expand our capacity for providing a clean energy supply and continue with our promotion of energy conservation and plans for reducing carbon emissions - as well as supporting the development of new energy sources. We will place tight controls on the discharge of pollutants and rigorously follow up on any violation of environmental regulations. We will set up corrective and preventive measures to minimize the occurrence and intensity of environmental disputes.

### **CPC will take the initiative in creating a caring and harmonious society**

CPC will not only continue making the best use of the resources available for taking care of underprivileged groups - such as children living in remote areas, people who are physically and mentally challenged and senior citizens living alone - but will also support activities that benefit the community such as beach clean-up, tree-planting projects, helping to sell surplus agricultural products and organizing blood donation campaigns. Leading by example, CPC will invite companies across the business spectrum to participate in these initiatives and so spur greater collective corporate involvement in both doing good by Taiwan's people and furthering the aim of creating a warm, caring and harmonious community.

This is the seventh annual CPC sustainability report. We are excited by our 2014 submission winning the Gold Award in the manufacturing group of the '2014 Taiwan Top 50 CSR Awards' and that CPC was a recipient of the 'Corporate Sustainable Development Performance Awards for Growth through Innovation'. All these awards help to make CPC even more firm in its determination to maintain a CSR-oriented culture and to instill the CSR-way of thinking and doing into our major business activities. CPC will always stay in close communication and cooperation with all of its stakeholders so that we can all keep working together for Taiwan - our beautiful home.



Chairperson  
**Sheng-Chung Lin**

President  
**Paul, Lie-Way Chen**

Vice Presidents: Ray-Chung Chang, Ming-Huei Chen, Cheng-Hsie Liu, Ching-Yang Wu



# About this Report

CPC started the compilation of Corporate Sustainability Report (CSR) in 2007, and this CPC 2015 Corporate Sustainability Report is the seventh such report for us. CPC would like to present to the general public and the stakeholders our determination of fulfilling our corporate social responsibility and pursuing sustainable development. This report is divided into three main chapters, Our Commitment, Value-added Sustainability and Heartfelt Gratitude as well as the Special Edition sections, presenting our efforts and achievements in Sustainable Development Indicators, including Economic Performance, Environmental Protection, Labor Care, Concern for Human Rights, Social Participation, and Product Liability. Relevant data and statistics are combined for detailed presentation.

To give the general publics and stakeholders a better understanding and an effective communication channel for CPC's work and effort on CSR, we have built a special CSR section in CPC official website. In that section, our CSR report is available for download, and we regularly update the goal, strategy and achievement of our sustainable development. Also, for immediate response and reports regarding to the public concerned CSR issues and CPC related important news events, please visit our official website for more information. To enhance the interaction with the stakeholders, in 2015, we add a new function of online questionnaire of concerned CSR issues to serve as a communication basis for CPC and its stakeholders.

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

## Scope of the Report and Statistics Basis

This report is mostly based on CPC's performance in CSR from Jan. 1 to Dec. 31, 2014. Some part of the content includes things happened before Jan. 1, 2014 or after Dec. 31, 2014, and so do the future principles, goals and plans. The scope of the report covers CPC Headquarters, and the related operation system and activity. The information related to environment is mostly the work of Taoyuan, Dalin, and Kaohsiung Refineries and Linyuan petrochemical complex. For the data and items not presented in this report and the related content provided in the report, please visit CPC official website for more information.

Most of the statistical data for this report comes from CPC's internal data collection, research and inquisition. For the financial data, it is public information audited and verified by Deloitte & Touche. Some of the statistical data is cited from public information from government websites, for example, Environmental Protection Administration and Ministry of Labor, both under the Executive Yuan. All the numbers are presented in the most common way of description. Data of greenhouse gas emission, ISO14001, and OHSAS18001 is checked and verified by Bureau of Standards, Metrology and Inspections, Ministry of Economic Affairs. Compared to 2014 CSR, there is no noticeable difference between the baseline number and data boundary.

## Referred Guidelines and Principles

The editing framework and procedure of CPC 2014 CSR fitted GRI-G3.1 while this CPC 2015 CSR follows the Global Reporting Initiative, GRI-G4 to identify the concerned issues of the stakeholders through major analytical model, prioritize topics within the report and analyze the theme of sustainability, related strategies, goals and measures. This report is compiled in such guidelines and editing framework. The referred programs and initiatives are as follows:

- Global Reporting Initiative (GRI), version GRI-G4
- GRI-G4 complementary guide for oil and gas industry
- AA1000 Accountability
- ISO26000 Guidance on Social Responsibility
- Earth Charter, OECD Guidelines for Multinational Enterprises
- UN Global Compact
- Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Corporate Social Responsibility Reports by TWSE Listed Companies

## The Editing, Review and Authorizing Procedure, and Verification of the Report

### CSR editing group

To finish the editing of the report, “2015 CSR special editing group” has been formed with vice president being the convener, the deputy director of Department of Planning as the executive secretary, and the members including representatives from all business divisions, all research institutes, and all aide departments.

### Review and authorization procedures

Department of Planning is in charge of overall information and data collection, integration, and the editing of the preliminary draft for the report. According to their duty and expertise, members of editing group proofread and revise the draft. Meanwhile, an independent third party was working on the external checking and auditing for the report. The revised edition then was sent back to the editing group for further review and revision for the final edition. Adding artistic and graphic work, the report would then, based on administrative procedures, be sent to the President, and the Chairperson of the Board for the final authorization.

### Verification of the Report

To enhance the standard conformity of GRI-G4 and AA1000 AS2008 to have better comparability and credibility for this report and to further function as an important tool for CPC’s continuing push for management of sustainable development, all the information in this report is verified by world renowned British Standard Institution (BSI), and the editing framework and procedure fits the core items of GRI-G4 and AA1000 Accountability Principles Standard. BSI verification report can be found in appendix and it is presented in international general index. If there is any estimation, it is mentioned in the chapter notes.

### Publication Time

Corporate Sustainability Report is published annually.

Current Chinese edition: July, 2015

Current English edition: July, 2015

Previous edition: July, 2014

Next edition: July, 2016



### For More Information

We hope that this report can help the stakeholders have a better understanding of CPC’s efforts for the promotion of sustainable management. Please contact us if you have any question or suggestion for this CPC Corporate Sustainability Report (CSR).

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



Save the Earth

The report was printed with environmental friendly soy ink and recycled paper.



01

# Our Commitment

To build CPC as an international energy conglomerate covering business ranging from exploration, production of oil products and gas, and petrochemistry with high tech and competitiveness.

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Rank **316**  
 Rank 316 in 2015 by Fortune Global 500.

**A+**  
 In 2014, Fitch Ratings has affirmed CPC Corporation, Taiwan's (CPC) National long-term Rating at 'AAA (tw)' , long-term Foreign Currency Issuer Default Rating (IDR) at 'A+' , and Unsecured Bond Rating at 'AAA (tw)' . The Outlook of CPC is stable.

Approximately NTD **1,200 billion**  
 In 2014 the revenue of CPC was approximately NTD 11,918 hundred-million.



NTD **128.9** billions

Financial contribution in 2014 is NT\$ 128.9 billion.

No. **1**

Next Magazine's first place in service category for gas station for the 9th year in a row.

**79.1%**

CPC has a total of 1,985 gas stations nationwide, with the market share of 79.1%

**↑6.38%**

Sold natural gas of 17.6 billion m<sup>3</sup> in 2014, 6.38% increase compared with 2013.

NTD **2.532** billion

In 2014, CPC invested NT\$2.532 billion and in R&D.

**151** patents

Up to the end of 2014, CPC has owned 151 patents. In 2014, we applied for 19 patents, and were issued 10 patents.

**9,456** person-times

To enhance the honest awareness for the management and elevate the ethical and legal ideas to employees, CPC held 27 times of promotion activities with 9,456 person-times.

## 1.1 CPC Current Status

### 1.1.1 Objectives and Visions

It has been more than six decades since the incorporation of CPC. We have reached our mission of providing steady supply of oil products, boosting the development of the petrochemical industry in Taiwan to boom Taiwan's economic growth, livelihood and prosperity, and have received acclaimed recognition. CPC's management objectives and core values are deeply rooted as the basic spirit guide for all the staff at CPC to achieve our goals and missions together.





### Quality

CPC produces high quality and excellent products. Our Torch trademark has long been trusted by the public. Quality First has always been our unswerving philosophy. Future efforts should be devoted to quality management and the improvement of the quality of our living environment.



### Service

CPC shoulders a number of tasks, including the provision of adequate supply for domestic oil for different industries. After the liberalization of the oil market, our business is more focused on the sales and services to fulfill the service-oriented business philosophy so as to maintain our position as the leading brand in the market.



### Contribution

In the development of the national economy and basic industries, CPC has made a great contribution and will continue doing so for the national economy and livelihood of the people.



## 1.1.2 About CPC

From CPC being incorporated to 2014, it's been 68 years. Our main business includes import, exploration, development, refinery, storage, transmission, and sales of oil products and natural gas and production and supply of petrochemical raw materials, with facilities distributed all over Taiwan. We have been working diligently, facing countless obstacles and challenges, assuming the obligation of supplying sufficient natural gas, petrochemical and refined oil products for the general public. CPC not only bears the responsibility of enhancing operation efficiency but also the tremendous obligation of supplying and developing national energy resources. We courageously strive to create a triple-win situation among "environmental protection, economic development and society concerning". We want to become not only the competitive, international energy conglomerate covering the business of exploration, oil and natural gas, petrochemical, high-tech, but also the CSR exemplar company.



### Company Basic Information

CPC Corporation, Taiwan	
<b>Incorporated Date</b>	June, 1, 1946
<b>Ownership</b>	State-owned enterprise (MOEA 100%)
<b>Capital</b>	130.1 billion
<b>Revenue</b>	1.192 trillion (2014)
<b>International Ranking</b>	Rank 316 (Source: Rank 316 in 2015 by Fortune Global 500)
<b>Chairperson</b>	Sheng-Chung Lin
<b>President</b>	Paul, Lie-Way Chen
<b>Number of Employees</b>	14,787 ( 2014/12/31)
<b>HQ</b>	No.3, Songren Rd., Sinyi District, Taipei City 110, Taiwan (R.O.C.)



### Ranking in the Fortune Top 500

In 2015, CPC is ranked #316 in the international corporation ranking based on our solid foundation. In the future, we will keep innovating and working hard to achieve the goal of becoming the global top 150.



### Main Brands, Business and Products



CPC Corporation, Taiwan

Chinese Petroleum Corporation was renamed to CPC Corporation, Taiwan (CPC) in 2007, and the name of CPC, the trademarks and the English name of CPC are retained to expand our international business while strengthening roots in Taiwan to continue our accumulated and valuable reputation.

CPC set up Material Testing & Certification Center and Green Technology Research Institute in 2012, combining the CPC associated petrochemical firms to develop high value-added petrochemicals and technology. To diversify our business, CPC has established the Biotechnology Business Center under the Refining Institute to lead the R&D of bio-tech, and appointed the Operating Team of Bio-tech Product under the Solvent & Chemical Business Division to be in charge of the sales of bio-tech products.

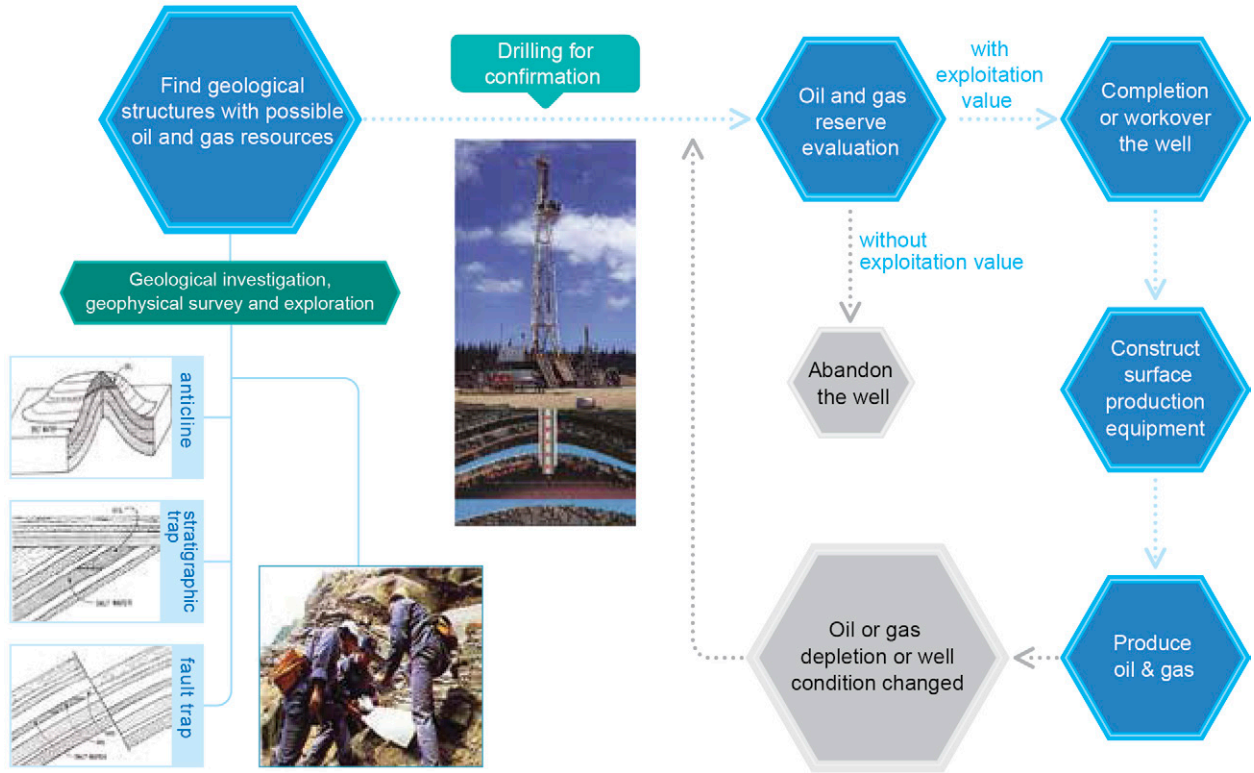
## Upstream Business

### Exploration and development of oil products and natural gas

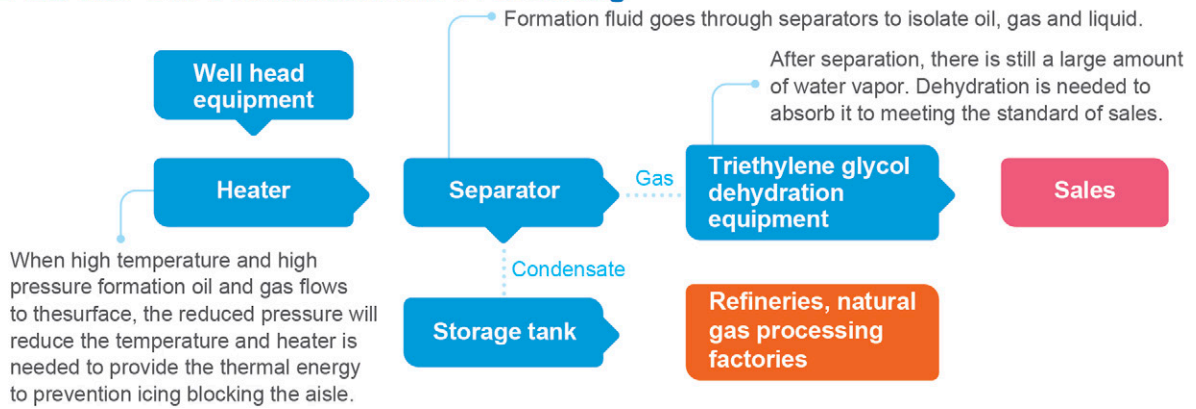








 **Oil & Gas Exploration and Production**



 **Oil and Gas Production and Processing**



Downstream Business	
Provide the best oil products and develop the export terminal market	
Main Business	Main Products
Refinery, storage and sales of oil products and natural gas.	Oil products (gasoline, diesel, fuel oil and aviation fuel), LPG, household natural gas, industrial natural gas.
 	 

### Main Business

Production and supply of petrochemical raw materials.



R&D and sales of biotech products.



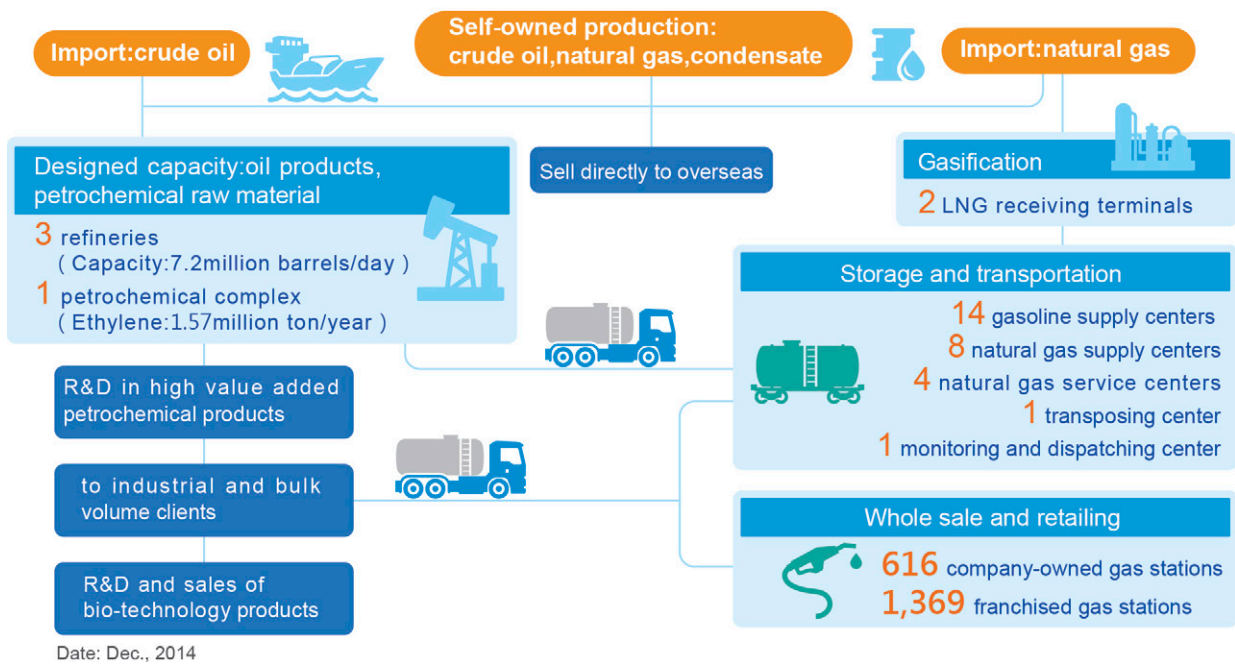
### Main Products

Petrochemical raw materials such as, alkene products (ethylene, propylene and butadiene) and aromatic hydrocarbons (benzene, para-xylene and ortho-xylene) and solvent products.

Dietary products and biotech cosmetic products and drinks, cleansing products, and lubricants.



## General Description of Main Business



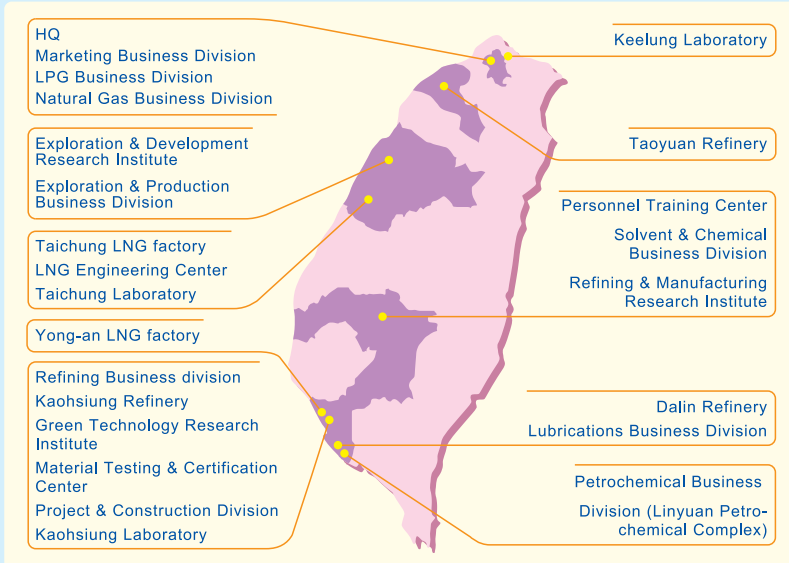
## Major changes of CPC organization in 2014

- The ownership structure, Chairperson and President of CPC remained the same in 2014.
- The Government promises to shut down Kaohsiung Refinery by the end of 2015. Therefore, currently the refining business is gradually transferred to Dalin Refinery to meet the domestic demands for oil, and Linyuan Petrochemical Complex will take over its petrochemical production.
- The long-term LNG supply contract with Papua New Guinea started in 2014 as scheduled. CPC has signed long-term LNG supply contracts with Indonesia, Malaysia, Qatar, and Papua New Guinea in 2014, and the rest is supported by our suppliers from different gas exporting countries through the Master Agreement.
- Acquired oil and gas fields in 2014, including Lake Boeuf N Sand field in Texas, USA and Ichthys LNG field in Australia.

### 1.1.3 Operation Locations

#### Domestic Operation Locations

- 3 refineries (in Kaohsiung, Taoyuan and Dalin)
- 1 petrochemical complex in Linyuan
- 2 LNG receiving terminals (in Yong-an Harbor and Taichung)
- 8 natural gas supply centers, 4 natural gas service centers, 1 transposing center (built 8-shape of gas transportation network with 1,535 km of pipeline on land and 373 km of pipeline under the sea )
- 14 gasoline supply centers
- 1,985 gas stations



#### Overseas Operation Locations

Through the Overseas Petroleum and Investment Corporation (OPIC), CPC work with local governments, government-owned petroleum companies and international renowned companies for exploration and production, and extending the foreign operational locations ranging from the countries in the Americas, Asia-pacific and Africa. CPC sets up overseas operating offices and branches in the US, Ecuador, Libya, Niger, Chad, Qatar, Singapore, Indonesia, Vietnam and Shenzhen.

In 2014, the exported amount of oil products is 3.6777 million liters with majority of it selling to Asia-Pacific countries like China, Korea, Hong Kong, Singapore, Indonesia, Malaysia, Vietnam and the Philippines, and to as far as Peru in Central and South America. There are also some products exported to Bangladesh and New Guinea. The export market is expanding annually.

#### CPC Overseas Affiliates and Cooperating Company Locations





# A+

In 2014, Fitch Ratings has affirmed CPC Corporation, Taiwan's (CPC) National long-term Rating at 'AAA (tw)' and long-term Foreign Currency Issuer Default Rating (IDR) at 'A+'. The Outlook is stable.

## 1.2 Operational Achievement

### 1.2.1 Financial Achievement

CPC, as a state-owned enterprise, shoulders the responsibility to stabilize the domestic commodity prices, and therefore, the prices of our oil products do not fully reflect our import costs of crude oil. The international oil prices fell in 2014, and the refinery cost was reflected later, causing the gross loss, resulting in a pretax loss of NTD 33.75 billion in 2014.

In May, 2015, Fitch Ratings has affirmed CPC Corporation, Taiwan's (CPC) National long-term Rating at 'AAA (tw)', long-term Foreign Currency Issuer Default Rating (IDR) at 'A+', and Unsecured Bond Rating at 'AAA (tw)'. The Outlook is stable.



## NTD 128.9 billion

Financial contribution in 2014 is NT\$ 128.9 billion



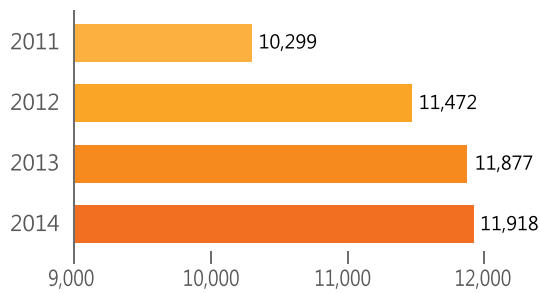
## Approximately NTD 1,200 billion

In 2014 the revenue of CPC was approximately NTD 1,191.8 billion

### CPC's Financial Performance over the years

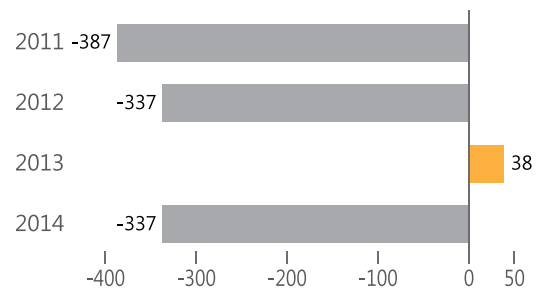
#### + Revenue

(Unit: hundred-millions TWD)



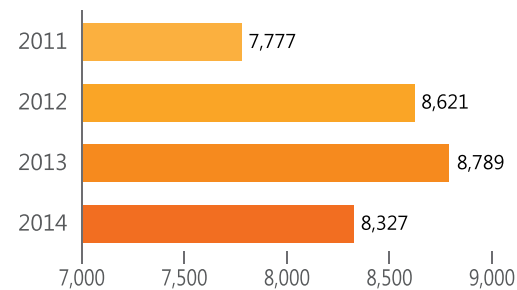
#### + Profit before Tax

(Unit: hundred-millions TWD)



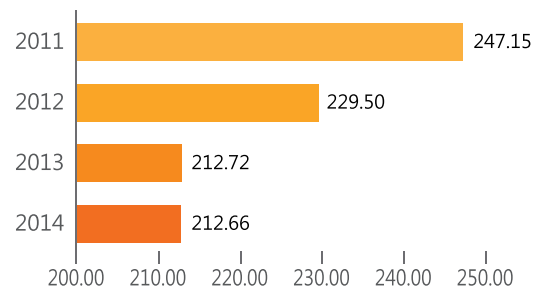
#### + Total Assets

(Unit: hundred-millions TWD)



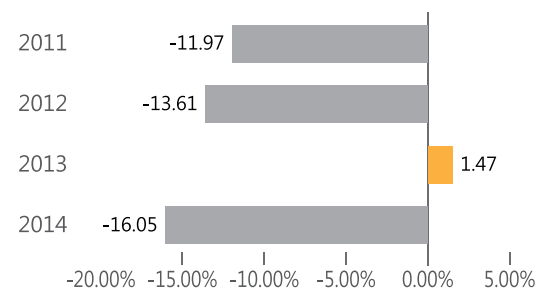
#### + Personnel Cost

(Unit: hundred-millions TWD)



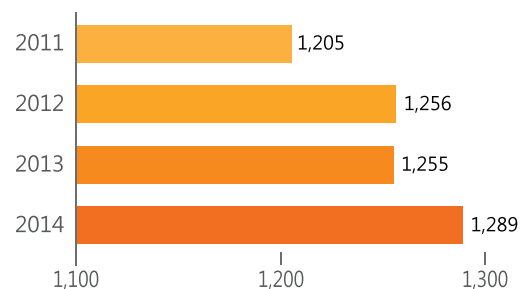
#### + ROE

(Unit: %)



#### + CPC's Financial contribution to the country

(Unit: hundred-millions TWD)





### Government Finance Aids

In 2014, CPC received several governmental subsidies, including NTD 204.73 million for “oil and gas exploration”, NTD 117.56 million for “gas stations in remote and offshore areas”, NTD 50.13 million for “Energy Research and Development”, NTD 5.29 million of “subsidy on petroleum fund”, and NTD 180,000 of subsidy to “fishing vessel filling stations”.

Note: Due to the revision of regulations, non-investment tax credit is zero.

### Achievement in Operation Improvement 2014

**Activation of lowly utilized land to increase benefit and utilization:** In 2014, there were three cases in total, with a total land area of 3.42 hectares. For example, the land besides Da-xue Rd. of Hsinchu City was sold by tender with NT\$ 267.9 million, the creation of superficies of the former product warehouse in Banchiao was sold by tender with NT\$ 1.2809 billion, and the annual rent of NT\$ 7.3 million of the land in Nanzih, Kaohsiung.

**Strengthen financial management and hedging mechanisms to reduce the impact of exchange rate fluctuations on earnings:** In 2014, the execution of forward foreign exchange hedging totaled US\$ 9.349 billion, with the performance profit of NT\$ 850 million.

**Actively seeking international partners for oil and gas exploration to increase the company’s revenue and the proportion of self-ownership of our oil sources:** In 2014, in CPC’s cooperated Nigeria Agadem field, CPC obtained additional 26.75 million barrels of oil equivalent of crude oil and 43.69 million barrels of oil reserves in Phase II field. In addition, CPC cooperated with Japan’s Inpex in the merger in 2014 and obtained the Australia Ichthys LNG Project, and can obtain additional 13.31 million barrels of oil equivalent of crude oil and 76.91 million barrels of oil reserves.

**Actively promote the improvement in management, broaden sources of income and cut down costs to increase operational efficiency and the revenue:** In 2014, the achievement rate of improved operating income was 103.46% while the achievement rate of reduction in expenditure was 209.45%.

**Closely observe the fluctuation of international raw material prices to have timely grasp of changes in costs and business opportunities:** Grasp changes in supply and demand for international crude oil and the trend of changes in crude oil prices and business opportunities, with the flexibility to adjust the procurement sources to reduce crude oil procurement costs.



No. 1

Next Magazine’s first place in service category for gas station for the 9th year in a row





## 1.2.2 General Operation Summary



### Operation Achievement in 5 Core Businesses

Operation Achievement in 5 Core Business			
Item	2012	2013	2014
 Exploration	Acquired 4 US and 1 Congo oil fields.	Acquired 5 US, and one each in Australia, Burma and Nigeria.	Acquired 2 fields, in US Lake Boeuf N Sand field and with the Australia Ichthys LNG project in 2014.

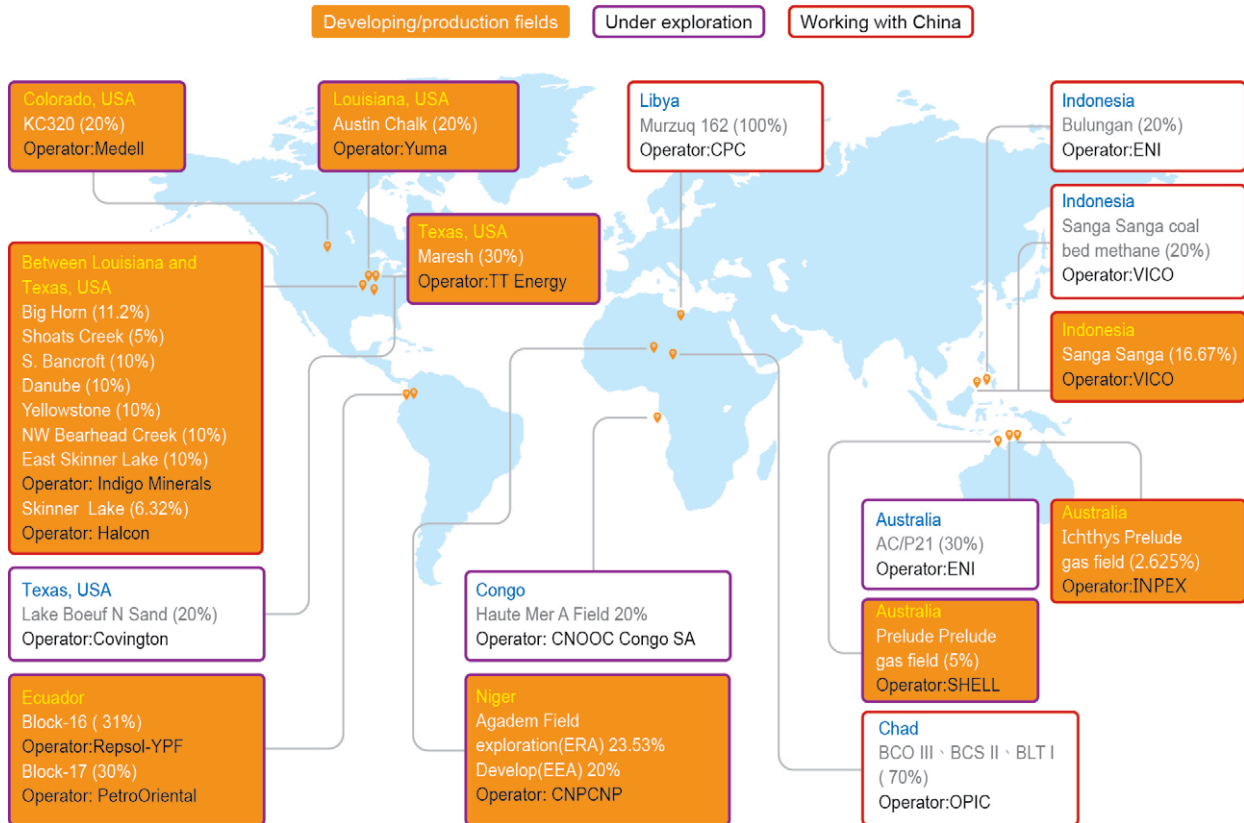
## Operation Achievement in 5 Core Business

Item	2012	2013	2014
 <p>Refinery</p>	<p>Kept developing refinery structure improvement plan (Mass production of Alkylation unit). / Signed joint venture of INA production plan for FCC C4.</p>	<ol style="list-style-type: none"> <li>Kept developing refinery structure improvement plan : Completed green gas quality improvement in No. 2 Catalytic Cracking and Alkyl chemical plant investment plan.</li> <li>Pushed for high value-added oil product: kept working on joint investment of catalytic cracking of C4 (INA) project and working with downstream company for feasibility study of producing styrene with recycled catalytic cracking tail gas.</li> </ol>	<ol style="list-style-type: none"> <li>Keep upgrading refinery structure improvement plan: strengthen recycled fuel gas, tail gas, recycle gas, sealing gas as fuel to reduce refining cost.</li> <li>Push for high value-added oil product: keep working on joint investment of catalytic cracking of C4 (INA) project and working with downstream company for feasibility study of producing styrene with recycled catalytic cracking tail gas.</li> </ol>
 <p>Petrochemical</p>	<ol style="list-style-type: none"> <li>Kept upgrading Aromatic Hydrocarbons series plant upgrading.</li> <li>Worked on Third Naphtha Cracker upgrading.</li> <li>A joint venture of Taiyao Petrochemical Material Company.</li> </ol>	<ol style="list-style-type: none"> <li>Proceeded Aromatics hydrocarbon refining structure improvement continuously.</li> <li>Completed New NO. 3 Naphtha cracker.</li> <li>Promoted the construction of the plant for C5 hydrocarbons joint production program.</li> </ol>	<ol style="list-style-type: none"> <li>Naphtha Cracking Plant, keep No.4 and new No. 3 Naphtha cracker to operate in full capacity.</li> <li>Aromatic Hydrocarbons series plant: flexibility adjust production line operation and set profits as the premise.</li> <li>Continue the promotion of production plan of high value petrochemical products.</li> </ol>
 <p>Sales and Marketing Oil product</p>	<ol style="list-style-type: none"> <li>Reader's Digest Trusted Brands for the 12th year in a row.</li> <li>Next Magazine's "first place in service category" for gas station for the 7th year in a row.</li> </ol>	<ol style="list-style-type: none"> <li>Reader's Digest Trusted Brands for the 13th year in a row.</li> <li>Next Magazine's "first place in service category" for gas station for the 8th year in a row.</li> </ol>	<ol style="list-style-type: none"> <li>Reader's Digest Trusted Brands for the 14th year in a row.</li> <li>Next Magazine's first place in service category for gas station for the 9th year in a row.</li> <li>Common Wealth Magazine "2014 Gold Service Award": Gold medal in the utilities category.</li> <li>Management Magazine "2014 Consumers Ideal Best Survey": first place in gas station.</li> </ol>
 <p>Natural Gas And Liquefied Natural Gas</p>	<p>Signed two LNG long term purchasing contracts with Australia Ichthys and Shell and would import LNG from Australia and elsewhere in the future.</p>	<ol style="list-style-type: none"> <li>Sold natural gas of 16.565 billion m<sup>3</sup> in 2013, a 3.5% increase compared with 2012.</li> <li>Concluded and signed a first US LNG HOA with GDF SUEZ.</li> </ol>	<ol style="list-style-type: none"> <li>Sold natural gas of 17.62 billion m<sup>3</sup> in 2014, a 6.38% increase compared with 2013.</li> <li>Signed one long-term natural gas contract at US Henry Hub price in 2014, aiming to achieve dispersion of gas supply and pricing indicators and the target to reduce import costs.</li> </ol>



To increase self-owned energy resources and stabilize crude oil and natural gas supply, CPC aggressively works on oil and gas exploration and production domestically and globally to strengthen cooperation of mining and exploration in core areas overseas and grasps the energy trends to seek opportunities for cooperation with international energy companies to jointly invest in unconventional fossil energy sources like shale gas and Coal Bed Methane (CBM). In 2014, we acquired 2 fields, in US Lake Boeuf N Sand field and with the Australia Ichthys LNG project. Through the Overseas Petroleum and Investment Corporation (OPIC), CPC work with local governments, government-owned petroleum companies and international renowned companies for exploration and production, and extend the foreign operational locations ranging from the countries in the Americas, Asia-pacific and Africa. Up till the end of 2014, we successfully obtained new fields for exploration and production in 24 fields in 8 countries, as shown in the following figure.

### CPC Overseas Oil and Gas Fields Location Map 24 fields in 8 countries



 **79.1%** CPC has a total of 1,985 gas stations nationwide, with the market share of 79.1%.

 **↑6.38%** Sold natural gas of 17.62 billion m<sup>3</sup> in 2014, a 6.38% increase compared with 2013.

### Production and Sales of Main Products

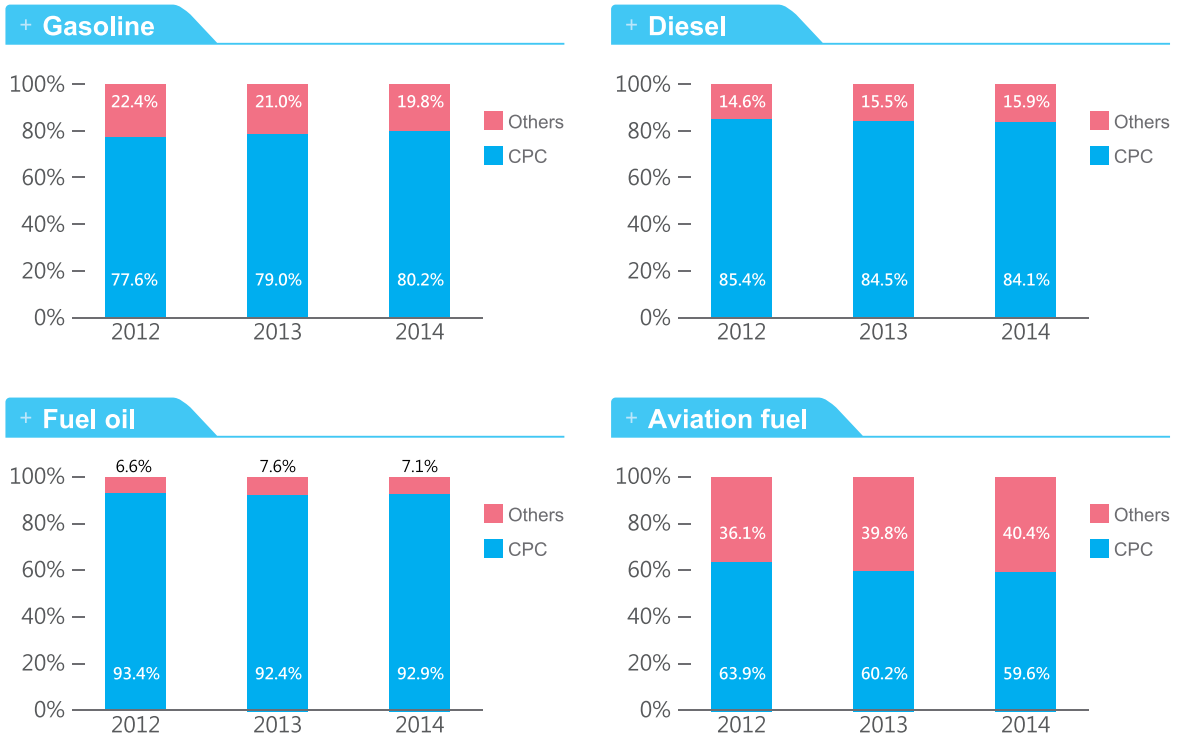
CPC owns 150 million barrels of oil equivalent of potential oil and gas reserves, and the production of oil products and natural gas in 2014 is 10.2 million barrels of oil equivalent. Lately, we have been increasing refinery capability to satisfy the market demand and to maximize profit for refinery. In 2014, the amount of refined crude oil achieves 22.38 million kiloliters.

As for natural gas production, we adopt the techniques of low pressure production, water blocking, and workover well in restoring domestic production to stabilize natural gas production. In 2014, the domestic production of natural gas (excluding regeneration gas) is 387 million m<sup>3</sup>. Because of the need for clean energy in Taiwan, the sales of natural gas is increasing annually and reached 17.62 billion m<sup>3</sup> in 2014, a 6.38% increase from 2013.

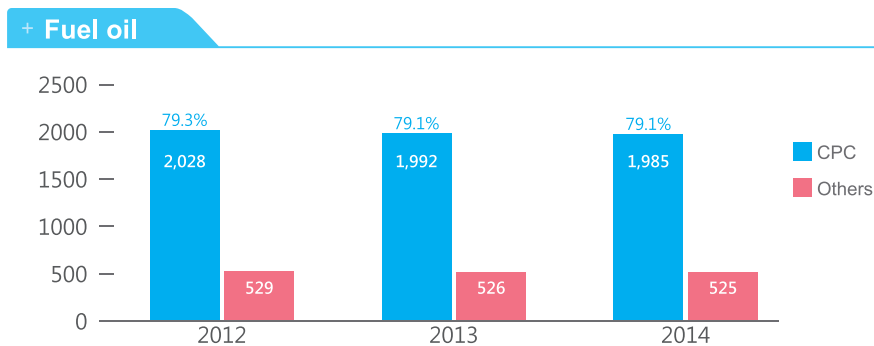
CPC's gasoline, diesel and fuel oil have over 80% of domestic market share, and CPC serves as the major supplier for the oil products market in Taiwan. Our market shares of gasoline, diesel and fuel oil and aviation fuel are 80.2%, 84.1%, 92.9% and 59.6% respectively. The total sales of oil products in 2014 are 33.38 million kiloliters. In 2014, the sales of LPG are 716 thousand tons.

Among the overall 2,510 gas stations in Taiwan area, 616 are CPC-owned and 1,369 are CPC franchised (including 8 co-ops), and the total number of CPC gas stations is 1,985, with the market share of 79.1%.

### CPC Market Shares for Oil Products



### CPC Market Shares for Gas Stations



### 1.2.3 R&D



**NTD 2.532 billion**

In 2014, CPC invested NT\$2.532 billion in R&D.

CPC's R&D budget in 2014 is NTD 2.532 billion. Besides working with divisions (such as the Exploration & Production Research Institute and the Refining & Manufacturing Research Institute) to improve exploration and refinery technology, all the research institutes establish self-owned key technology and enhance high value innovation as the essential R&D strategies. On the other hand, to respond to global development on high value, low carbon emission technology, we set up Green Technology Research Institute and New Materials Trial Production & Certification Center in March 2012 in Kaohsiung to work on research for green energy technology (green energy, material technology, bio-technology), including research of conventional and unconventional crude oil and natural gas resources evaluation, application of Environmental Engineering Techniques, development in CCS technology, development of new products, biomass and new energy research. These two institutes will focus on R&D of green energy and biomass and the expansion of CPC's petrochemical manufacturing capability.



Microalgae ponds and transport equipment

 **Patent Achievement**

Up to the end of 2014, CPC has owned 151 patents (expired or no longer maintained ones excluded); in 2014, we applied for 19 patents, and were issued 10 patents.



**151** patents

Up to the end of 2014, CPC has owned 151 patents. In 2014, we applied for 19 patents, and were issued 10 patents.

Quantitative Performance of CPC's R&D Results over the years					
Year	2011	2012	2013	2014	Average
Patent issued (items)	12	6	13	10	10.25
Papers published (articles)	178	201	249	291	230
New technologies introduced (items)	70	93	96	109	92

### 1.2.4 Affiliated Business and Investment

In order to establish investment control mechanism and effectively promote affiliated business projects so as to achieve the objectives and benefits of reinvestment plans to ensure the interests of CPC, we set up "Guidelines for Affiliated Business Investment". Up to the end of 2014, CPC has 10 domestic and 6 overseas affiliated businesses and investments. The total investment is NT\$ 16.73 billion, and in 2014, the revenue from them amounted NT\$ 385 million, with the return on investment of 2.3%. The list of companies in which CPC holds shares are shown as follows.



\*numbers in ( ) indicate the amount of investment and percentage of share holding

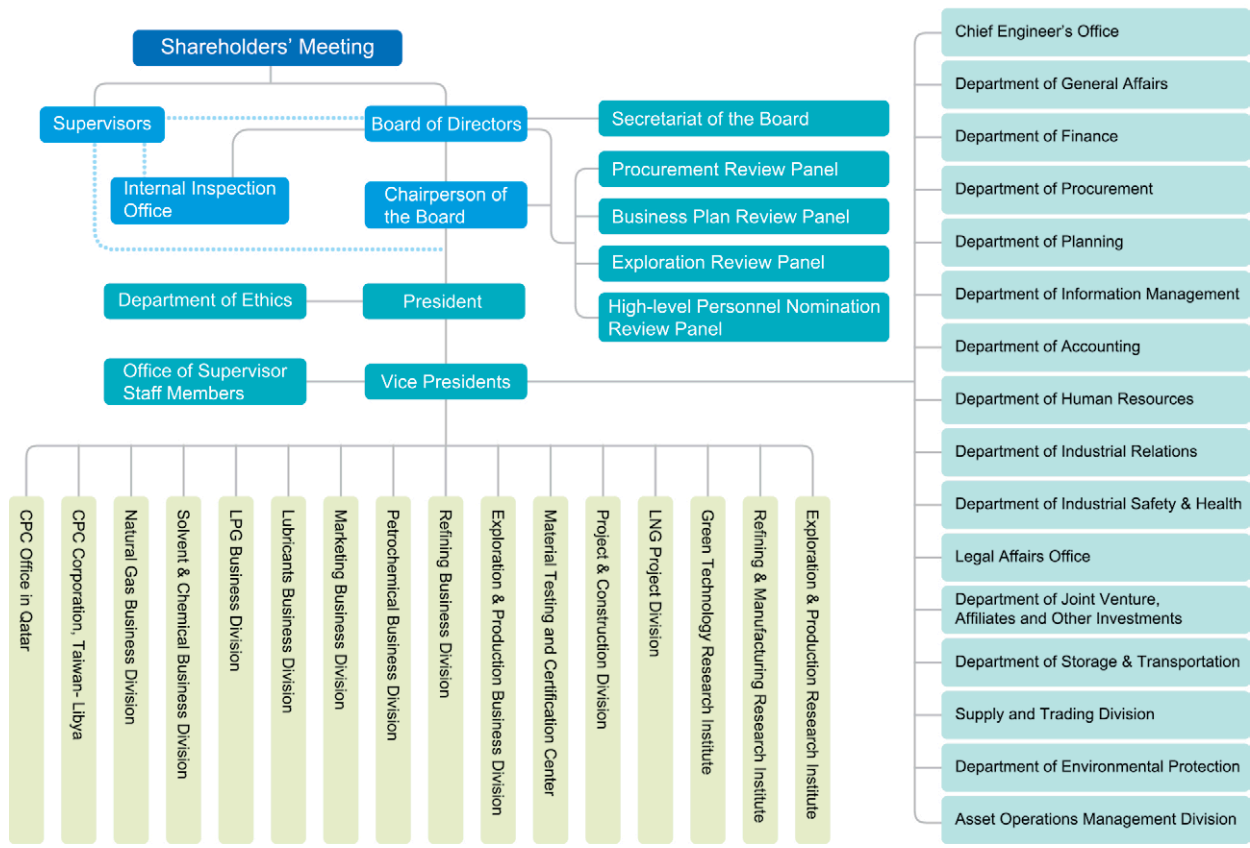
# 1.3 Company Governance



CPC has perfect company governance that is based on our company governance rules and policy. We follow the relevant laws and regulations and important principles of corporate governance policy to effectively enhance our competitiveness and risk control capabilities to improve company operations. CPC participated in the “2014 Company Governance Evaluation for the State-run Enterprise of Ministry of Economic Affairs”. The assessed items are “the effectiveness of the law and regulation framework to state-owned enterprise”, “the role of government as the entity owner”, “the equitable treatment of shareholders”, “the relationship with the stakeholders”, “transparency disclosure”, “the BOD’s responsibility as a government owned entity” and “discipline and communication of management level”. It was done in document and onsite evaluation. CPC received high remarks in these evaluations.

## 1.3.1 Management Structure

CPC Organization Chart



 **Board of Directors**

The Board of Directors at CPC consists of 13 directors who are appointed by the single government shareholder, MOEA, with a term of two years (from May 14, 2013 to May 13, 2015). The Chairperson and the President are Executive Directors (the role of the Chairperson of CPC is not combined with a CEO). There are two independent directors and three supervisors. Among the 16 directors and supervisors, there are 2 females, which is 13% of the total of 16 members. The age distribution of the directors and supervisors is as follows: 1 person in 40-50 age group, 9 people in 51-60 age group, and 6 people in 61-70 age group. There are 4 Review Panels under the Board of Directors, including "Business Plan Review Panel", "Exploration Review Panel", "Procurement Review Panel", and "High-level Personnel Nomination Review Panel". Except for the "High-level Personnel Nomination Review Panel" whose convener is elected by the directors in the board meeting, those in the panels are the board members in a professional field invited by the Chairperson and the supervisors may attend the meetings. Board meetings are held once a month, and there were 12 board meetings in total in 2014.

Members of CPC BOD					
Title	Name	Gender	Current Job	Major Experience	Current Jobs with Other Companies
Chairperson	Sheng-Chung Lin	Male	Chairperson, CPC	Administrative Deputy Minister and Deputy Minister, Ministry of Economic Affairs; Master of Social Science, Institute of Economics, National Taiwan University	Director, CTCI Foundation
President and Standing Director	Paul, Lie-Way Chen	Male	President, CPC	Vice-President, CPC; Chairperson, CAPCO; Master of Business Administration, Thunderbird School of Global Management	Director, Taiwan Global Energy Maritime Co., Ltd.
Standing Director (Independent Director)	Chi-Yuan Liang	Male	Chairperson, Chung-Hua Institution for Economic Research (CIER)	Ph.D. in Economics, National Taiwan University	Project Researcher, The Research Center for Taiwan Economic Development, National Central University; Supervisor, the Board of Supervisors of the Central Bank
Director (Independent Director)	Chuh-Yung Chen	Male	Professor, Department of Chemical Engineering, National Cheng Kung University	Deputy Director, National Cheng-Kung University Yen Tjing-Ling Industrial Technology Research and Development Center; Ph.D. in Chemical Engineering, National Cheng Kung University	Director, CHIMEI MATERIALS TECHNOLOGY CORP.
Director	Wang-Hsiang Huang	Male	Deputy Minister, National Development Council	Counselor and Director, President's Office of the Legislative Yuan ; Ph.D. in Land Economics, National Chengchi University	Director, China Aviation Development Foundation
Director	Shin-Cheng Yeh	Male	Minister without portfolio, Executive Yuan	Director, Graduate Institute of Environmental Education, National Taiwan Normal University; Ph.D. in Civil and Environmental Engineering, Cornell University, USA	Director, ICLEI Kaohsiung Capacity Center
Director	Tung-Yi Lee	Male	Professor, Department of Geoscience, National Taiwan Normal University	Ph.D. University of Texas, USA	
Director	Yi Chou	Male	Associate Professor, Department of International Business Administration, Chinese Culture University	The 5th, 6th, and 7th terms legislator; Ph.D. in Economics, National Taiwan University	Independent Director, King's Town Bank; Director, Sanyang Motor Co., Ltd.

## Members of CPC BOD

Title	Name	Gender	Current Job	Major Experience	Current Jobs with Other Companies
Director	Yaw-Chung Liao	Male	Counselor, Executive Yuan, and Director, Department of Economics, Energy and Agriculture, Executive Yuan	Secretary-General, Council for Economic Planning and Development, Executive Yuan; Ph.D. in Agricultural Economics, National Taiwan University	Director, Mega Financial Holding Company Ltd.
Director	Mei-Ying Huang	Female	Professor, Department of Economy, National Taipei University	Professor, Department of Economy, National Taipei University; Ph. D. in Economics, University of Georgia, USA	
Director	Chin-Lai Huang	Male	Supervisor, Taoyuan Refinery, Refining Business Division, CPC	Open Junior College of Commerce Affiliated with National Chengchi University	
Director	Chih-Wei Sun	Male	Oil Transportation Technician, Wangtien Fuel Distribution Center, Taichung Division, Marketing Business Division, CPC	National Nantou Senior High School	
Director	Kwung-Shing Wu	Male	Geologist, CPC Exploration Business Division	Master of Science in Civil Engineering, South Dakota School of Mines and Technology, USA	
Supervisor	Ter-Shing Chen	Male	Administrative Deputy Minister, Ministry of Science and Technology	Counselor and Director, Executive Yuan; PhD in Law, Chinese Culture University	Supervisor, Central Deposit Insurance Corporation
Supervisor	Chiao-Tao Hsu	Female	Deputy Director, Department of Accounting, Central Bank of the Republic of China	College of Management, National Taiwan University	
Supervisor	Chi-An Wu	Male	Director, Department of Personnel, MOEA	Director, Department of Personnel, Ministry of Foreign Affairs; Master of Public Administration, National Chengchi University	



### Selection Criteria

CPC is a company limited by shares which is organized by a single government shareholder, MOEA, and pursuant to Article 128-1 of Company Act, the directors and supervisors to the company shall be appointed by such government shareholder. The selection criteria are stipulated in CPC's Corporate Governance Best-Practice Principles, including:

(1) The board members shall have the necessary knowledge, skill, and experience for performing their duties. To achieve the ideal goal of corporate governance, the board of directors shall have the following abilities:

- ability to make operational judgment
- ability to perform accounting and financial analysis
- ability to conduct management administration
- ability to conduct crisis management
- possession professional knowledge regarding the industry
- possession perspective of international market
- ability to lead
- ability to make decisions



(2) Independent directors may not have any direct or indirect interest in the company. The professional qualifications, restrictions on both shareholding and concurrent positions held, determination of independence, method of nomination and other requirements with regard to the independent directors shall be set forth in accordance with the Securities and Exchange Act, Regulations Governing Appointment of Independent Directors and Compliance Matter for Public Companies, and the rules and regulations of Taiwan Stock Exchange or GreTai Securities Market. To tie in with the CPC's industry characteristics, independent directors should have professional background or work experience in business management or energy-related industries.

2014 Further Education for Directors and Supervisors					
Title	Name	Course Title	Date	Hours	Training Unit
Chairperson	Sheng-Chung Lin	Independent Director Operating Practices	10/21/2014	3 hours	Taiwan Corporate Governance Association
Standing Director	Paul, Lie-Way Chen	Anti-corruption Regulations and Code of Ethics	6/4/2014	3.5 hours	State-owned Enterprise Commission, Ministry of Economic Affairs
Standing Director	Chi-Yuan Liang	Discussion of Corporate Governance in Taiwan from the Perspective of International Finance	8/22/2014	3 hours	Chinese National Association of Industry & Commerce, Taiwan (CNAIC)
Director	Chuh-Yung Chen	The Discussion of the Trend of Corporate Merger and Acquisition and Cases of Practices	8/13/2014	3 hours	Securities & Futures Institute(SFI)
Director	Wang-Hsiang Huang	The Functions and the Performance Assessment of the Board	3/11/2014	3 hours	Taiwan Corporate Governance Association
		Risk Management and Practices	8/19/2014	3 hours	Taiwan Corporate Governance Association
Director	Shin-Cheng Yeh	Communication Strategy for Crisis Management	8/22/2014	3 hours	Chinese National Association of Industry & Commerce, Taiwan (CNAIC)
Director	Tung-Yi Lee	Ways for Profits Promotion of the Functional Committees Belonging to the Board	7/29/2014	3 hours	Securities & Futures Institute(SFI)
Director	Yi Chou	The Trend and Prevention of Corporate Corruption	11/28/2014	3 hours	Securities & Futures Institute(SFI)
Director	Yaw-Chung Liao	The Case Study of Directors and Supervisors Family Inheritance Planning and Practice	9/22/2014	3 hours	Securities & Futures Institute(SFI)
Director	Mei-Ying Huang	Ways for Profits Promotion of the Functional Committees Belonging to the Board	11/25/2014	3 hours	Securities & Futures Institute(SFI)
Director	Chin-Lai Huang	Anti-corruption Regulations and Code of Ethics	6/4/2014	3.5 hours	State-owned Enterprise Commission, Ministry of Economic Affairs
		2014 Cross-strait Economic and Trade Agreements and Labor Director-related Knowledge and Ability Training	9/30/2014~ 10/1/2014	7.5 hours	Ministry of Labor
Director	Chih-Wei Sun	Anti-corruption Regulations and Code of Ethics	6/4/2014	3.5 hours	State-owned Enterprise Commission, Ministry of Economic Affairs
Director	Kwung-Shing Wu	Discussion of Corporate Governance in Taiwan from the Perspective of International Finance	8/22/2014	3 hours	Chinese National Association of Industry & Commerce, Taiwan (CNAIC)

## 2014 Further Education for Directors and Supervisors

Title	Name	Course Title	Date	Hours	Training Unit
Director	Kwung-Shing Wu	2014 Cross-strait Economic and Trade Agreements and Labor Director-related Knowledge and Ability Training	9/30/2014~ 10/1/2014	7.5 hours	Ministry of Labor
Supervisor	Ter-Shing Chen	Communication Strategy for Crisis Management	8/22/2014	3 hours	Chinese National Association of Industry & Commerce, Taiwan (CNAIC)
Supervisor	Chiao-Tao Hsu	Independent Director and Audit Committee Operating Practice	3/7/2014	3 hours	Taiwan Corporate Governance Association
		Emerging Roles and Functions of CFO	5/12/2014	3 hours	Taiwan Academy of Banking and Finance
Supervisor	Chi-An Wu	The Liability and the Planning of Liability Insurance of Directors and Supervisors Discussion on the Protection of Business Secret from the Duty of Directors and Supervisors	3/25/2014	6 hours	Chinese National Association of Industry & Commerce, Taiwan (CNAIC)



### Responsibilities of Board of Directors

CPC's top management unit, the Board of Directors, hears the monthly reports concerning major business strategies and operations from all divisions, examines and approves management strategies, reviews the progress in implementation, and assesses the business performance of the management team to maintain CPC's continued growth and to meet the market demand. In order to fulfill the oversight responsibility and to improve efficiency of board meetings, Procurement Review Panel, Business Plan Review Panel and Exploration Review Panel were established under Board of Directors to deliberate major strategic plans and exploration and procurement proposals before the board meetings to provide their opinions as reference for decision making at board meetings. In 2014, a total of 25 plans and projects were deliberated by these three review panels. On behalf of the Board, the chairperson and the president also supervise and enforce the strategy, planning, execution and performance evaluation of the "Sustainable Management Committee". Besides annual company social responsibility execution report, top management team regularly reports to the Board with topics ranging from evaluation of risk and opportunities, compliance of international standard, and business conduct guidelines.



### Board Performance

CPC follows the "Regulations for Performance Evaluation of State-Run Enterprises" to implement the annual performance appraisal for the highest level managers such as the Chairperson and the President. For the rest of the independent directors, directors and supervisors, we also abide by related rules and regulations of MOEA and the final results are sent to MOEA. The assessed items include management directions, annual planning, internal audit and control, financial management, production management, human resources management, environment protection, occupational safety, company governance, corruption risk management, sustainability report and climate change adaptation.



### Board and Stakeholders Consultation Process

The feedback process of authorized matters in major consultation events is as follows. (a) CPC sets "the list of work matters that should be reported to the Board", which states clearly the authorization and responsibility between the Board and management team. The results of the resolution of the Board of Directors should be provided for future reference. If the resolution of the Board is hard to implement or needs to be adjusted, the managers should report to the Board for approval before implementation. (b) CPC has set "Operating Guidelines for Reporting Major Events to the Board and Supervisors", which includes category of major events, routine communications, and definition as well as the reporting process of unexpected major events.

## 2014 Major Consultation Events Reviewed by the Board

- (1) Project implementation of listed controlled site of Shinkong Community.
- (2) Subsidy for the access road expansion project in Linyuan Area to meet the EIA resolution for the upgrading of #3 Naphtha Cracker and local requirements.
- (3) Concerning MOTC's Taoyuan Aerotropolis Project that will cross the oil tank farms in the Taoyuan Refinery, the managers in responsible departments deliberated alternative programs as reference for MOTC.
- (4) Concerning the land pollution treatment of the land Refinery Business Division rented from TIPC, No. 19 and No. 20 Port and the land behind, it has to be reported to Executive Yuan for approval, and once the approval documentation for polluted land treatment is obtained, the signing of the agreement is then carried out.
- (5) Reverse investment in real estate asset recognized in impairment loss has to be reported to the audit authority.


**Avoiding Conflicts of Interest**

In Article 29, Norms of Board Meetings, in Corporate Governance Best-Practice Principles, it is stipulated that "For CPC directors, when they or the legal persons represent encounter a conflict of interest, it shall be reported to the board of directors. Individuals whose interests could run counter to the interest of the company shall present their views and answer questions and recuse themselves from discussing and voting on related issues, and shall not exercise that right to vote on behalf of other directors. In addition, if the cases reported to the board of directors involve related-party transactions and members of the board, remarks should be given in the proposal as a reminder to avoid conflicts of interest. (For cases concerning directors' avoiding conflicts of interest in 2014, please refer to the description in "Board of Directors" section in under 1.3 Company Management in 2014 CSR.)


**Authentic Internal Audit**

As a state-owned enterprise, besides getting checked and approved by certified accountants and Financial Supervisory Commission, R.O.C, CPC needs to be supervised by State-owned Enterprise Commission, MOEA, R.O.C and National Audit Office, the Control Yuan. The internal audit system is getting more thorough.

Working directly under Board of Directors (BOD) and based on risk evaluation of company's sustainable operation, Internal Auditing office is in charge of planning for the following year's internal audit operation and helping the BOD and top management to check and review the shortcomings of internal auditing system, assess operation effectiveness and efficiency and properly provide improvement advice. CPC truly emphasizes on respecting the professionalism and independence of internal auditing office and the staff and fully authorizes their regular and special auditing works. They would check the weakness of the management and provide improvement suggestions and keep tracking the issues until they are fully resolved.



**9,456**  
person-times

To enhance the honest awareness for the management and elevate the ethical and legal ideas to employees, CPC held 27 times of promotion activities with 9,456 person-times

### 1.3.2 Adhere to Honesty and Ethic Value



2014 CPC Anti-corruption Committee meeting and honest awareness promotion activities



## Core Values

Operating with Integrity and fairness is CPC’s most fundamental responsibility and respect for all the stakeholders in terms of company governance. For CPC’s board of directors and supervisors, when working on their jobs, they should follow “Key management points to directors and supervisors of MOEA owned company or those assigned by MOEA” and “Regulation rules of CPC’s supervisors authority”. In “CPC’s Work Rules” clearly regulate the ethics and responsibility of all CPC employees when conducting business. It involves how individual employee, group of staff and the company interact with stakeholders and the public. In 2010, we set up anti-corruption committee to enhance and fulfill corruption prevention measures. In addition to supporting Government’s anti-corruption policy promotion, we build this concept into employee training classes. Concerning some scandals occurred, CPC has conducted a number of improvement measures, including “internal control mechanism for procurement and the development of improvement measures”, compilation of special reports on anti-corruption or pre-warning, establishment of “principles for ethnic unit staff to cooperate with the government for supervision and execution”, and “reporting platform for abnormality in procurement and ethnic departments”, aiming to timely prevent and eradicate procurement frauds.



## Integrity Educational Training

All the employees have received anti-corruption policy and procedure training and we also conduct the incorrupt government advocacy every year. In 2014, CPC held 27 incorrupt government oath assembly and promotion activities with 9,456 person times. Another 4 sessions of law and discipline promotion activities on “making profit and offering convenience to people” were highly supported by executives and the employees. In 2014, educational trainings of property-declaration by public servants were conducted, with a total of 225 participants (accounting for 94.94% among all with reporting obligation) to advocate Sunshine Acts.

### 1.3.3 Sustainable Management and Promotion

#### CPC’s Policies in Sustainable Management

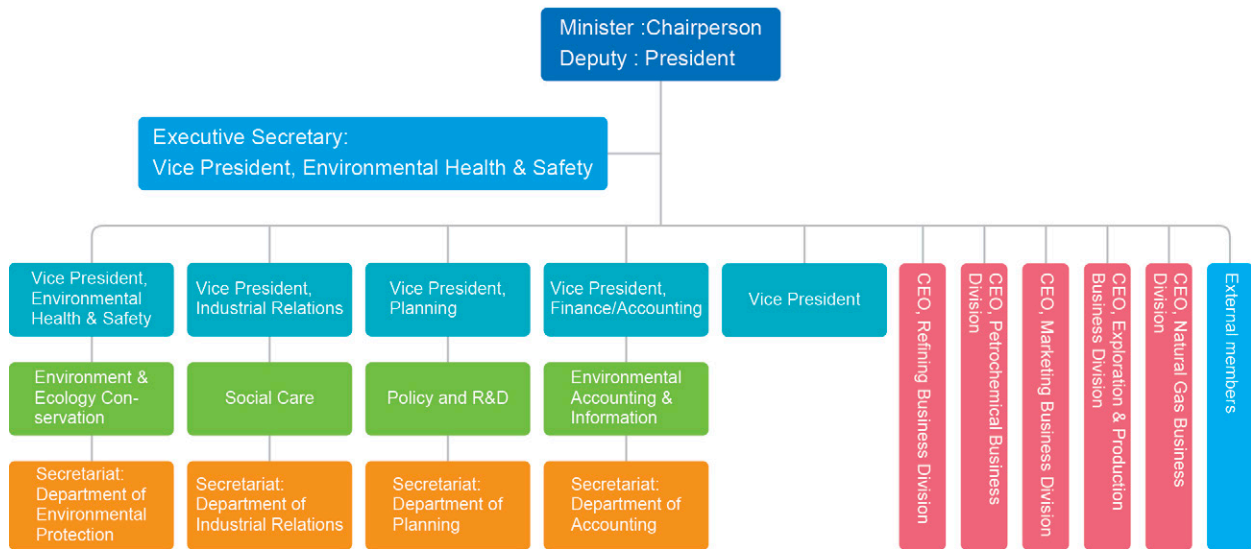
Follow government regulations and comply with international agreements	Focus on social responsibility and expand service scope
Enforce clean production and environmental protection	Establish environmental protection indexes and clarify information disclosure procedures
Use resources effectively and efficiently, and demand water and energy saving	Strive for research and development, explore management paradigm



## Sustainable Management Committee

On January 1, 2007, Sustainable Management Committee was set up comprising high level managers from different departments and divisions, and this committee focuses on ministering the strategy planning, and goal setting of sustainable management, and is further divided into four work groups. The chairperson is in charge of the committee, and the president is the deputy, in charge of environmental protection business, the vice president is the executive secretary, and the chief executives of the five business divisions are the directors. Starting from August, 2008, external scholars and experts start to join this committee (4 external commissioners in 2013 and 6 in 2014). The committee is further divided into four work groups, namely, “Environment & Ecology Conservation”, “Social Care”, “Policy and R&D”, and “Environmental Accounting & Information”, aiming to create a triple-win situation among “environmental protection, economic development and society concerning”. CPC has joined World Business Council for Sustainable Development (WBCSD) since 2006, the most influential corporate alliance in the world to connect with the world and fulfill our corporate social responsibility.

### Sustainable Management Committee Organization Chart



### 1.3.4 Transparency of Information Disclosure

Besides following domestic regulations on transparency of information disclosure, we regulate “CPC spokesperson and deputy spokesperson operating procedure” to enhance the transparency and accuracy of information disclosure. Important information is posted real time on company website. All of the stakeholders concerned issues are revealed domestically and internationally both in Chinese and in English. It provides stakeholders complete and timely financial and business information.

The transparency of information disclosure actions are described in the following forms: regular information posting and announcement of the annual report. There are already seven CPC corporate sustainability reports from 2007 to 2015. The CPC website interaction and the real time reporting is one of the best among Taiwan companies. To communicate with the stakeholders and the public directly and timely, the chairperson has his own Facebook and App.



### 1.3.5 Risk Management

CPC has set up the “Risk Management Committee” since March, 1998 to establish the measuring criteria for risk assessment and follow the procedure of Plan-Do-Check-Action (PDCA) to keep improving risk management. The chairperson is the steering committee members, and the president is in charge of the Risk Management Committee. All of the top level managers are the directors and the Department of Planning is the secretary unit. The committee is in charge of the policy, standard, procedure, and planning of the related issues of risk management for the whole company and holding the risk management meeting. The internal auditing office assists the Risk Management Committee to confirm the appropriateness and effectiveness of CPC’s risk management system. Each unit would setup risk management group with the unit head in charge of handling, pushing and monitoring risk management for the business of unit itself, and the unit head taking the final responsibility.



## Achievement in Risk Management

CPC regularly holds Risk Management Committee meetings to make a holistic review of potential risks, decide major risk items, and set up as well as review various corresponding projects and monitor the results. We identified 7 major risk items in 2014. All of them have been improved dramatically and the value at risk falls below tolerable level, showing specific effects of CPC's risk management mechanism. In view of LCY's gas explosion incident in Kaohsiung in 2014 that caused major industrial safety hazard, we have included long-distance oil and gas pipelines to track the leakage control and started the re-establishment of correct line and route map data, a comprehensive inventory and improvement of pipelines crossing culverts. Patrols and controls of pipelines, excavation survey, risk assessment, close interval potential detection, Cathodic protection potential measurement and facility maintenance, Intelligent Pig corrosion inspection and so on are also made, and the undersea pipeline detection is continued to be promoted to improve the reliability of the piping equipment.

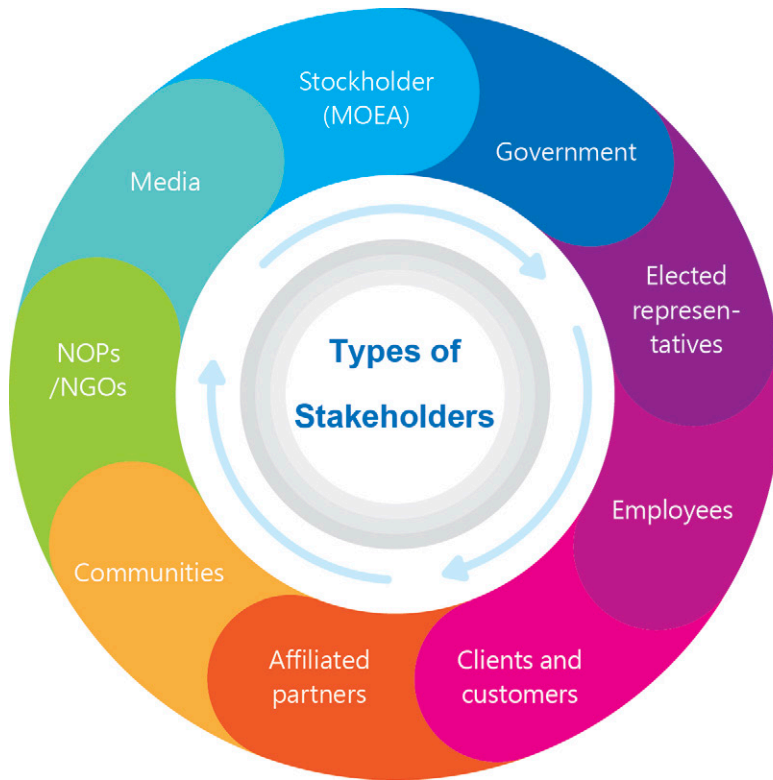
### 7 Major Risks Items Identified by CPC in 2014

Risk Items	Corresponding Strategies
<b>1</b> Risk of Oil Price Adjustment	Build a platform for two-way communication with the public. Clarify and disclose the information needed for oil price adjustment to reduce the questions and doubts from the public.
<b>2</b> Shortage on Supply of Oil and Gas	<ol style="list-style-type: none"> <li>1. Diversify oil and gas supply sources and strengthen the control on safe inventory.</li> <li>2. Cooperate with politically stable countries to participate in oil and gas exploration and field acquisition.</li> <li>3. Plan and promote the investment project of the third LNG receiving terminal.</li> </ol>
<b>3</b> Financial Risk	<ol style="list-style-type: none"> <li>1. Maintain normal operation and rationalize the adjustment of oil and gas price to avoid operation loss.</li> <li>2. Reduce the impact of crude oil price fluctuations, and use hedging operations on the difference of the price of exported oil products and the cost of the crude oil.</li> <li>3. Increase the ratio of long-term debt to improve financial health.</li> </ol>
<b>4</b> Consolidate Market Share	Enhance operation efficiency and increase profit growth.
<b>5</b> Risk of Shut down the Kaohsiung Refinery in 2015	<ol style="list-style-type: none"> <li>1. Plan the construction of the Crude Oil Distillation Unit, Crude Oil Fractionating Unit and RDS Unit in Dalin Refinery to make up the capacity loss due to the closedown of Kaohsiung Refinery.</li> <li>2. Establish the Prevention and Treatment of Soil and Underground Water Pollution Division and plan the schedule for the pollution remediation in Kaohsiung Refinery for regional remediation.</li> <li>3. Work along with the overall relocation plan and arrange the dispatching of work force and conduct the bidding schedule planning.</li> </ol>
<b>6</b> Risk of Incomplete Operation Safety	<ol style="list-style-type: none"> <li>1. Set up the group to check and analyze the potential risk.</li> <li>2. Enhance self-checking and external auditing in the factories.</li> <li>3. Implement workplace safety training and emergency response mechanism, and strengthen employees' awareness to work safety.</li> </ol>
<b>7</b> Negative Public Opinions	Carefully respond to negative public opinions, and timely clarify to reduce the impact.

## 1.4 Communication with Stakeholders

CPC runs business to fulfill the promises we made to the stakeholders. We would respect and maintain legal rights and interests of the stakeholders. We have many kinds of communicating and complaining channels, and we adhere to the principles of honesty and respect to timely and positively handle each case. CPC's stakeholders are identified based on the criteria of AA1000 stakeholder identification and can be classified into nine categories: (1) Stockholder (MOEA), (2) Government, (3) Elected representatives, (4) Employees, (5) Clients and customers, (6) Affiliated partners, (7) Communities, (8) NPOs/NGOs, and (9) Media.








**AA1000 Identification criteria**







- + Influence
- + Closeness
- + Dependency
- + Representability
- + Policy and strategy needs
- + Responsibility

### 1.4.1 Communication with Stakeholders

With transparent and diverse communication channels, CPC could understand the issues that stakeholders are concerned about and actively respond to the requests and use the requests as the reference to solidify our social responsibility. The cities where CPC has plants or factories are the important CPC stakeholders which need frequent interaction. It includes Cities of Kaohsiung, Taipei, New Taipei, Taoyuan, Taichung and Tainan, and Counties of Hsinchu, Miaoli, and Chiayi. Stakeholder Concern Questionnaire of CSR was distributed to our stakeholders in the 9 categories for communication in 2015, and a total of 333 valid questionnaires were responded.

Communication Channels with Stakeholders		
Stakeholders	Communication Channels	Frequency (yearly)
 <b>Stockholder (MOEA)</b>	1. Stockholder meetings or extraordinary Stockholder meetings (According to the Company Act, the BOD is exercising the right on behalf of the stockholder meetings) 2. Participate in the public policy meetings 3. Official documents	BOD meetings at least 12 times, at least 6 times for others
 <b>Government</b>	1. Hold charity events 2. Community communication meetings 3. Visits and subsidies (donations) 4. Participate in charity events and activities held by stakeholders	At least 6 times
 <b>Elected representatives</b>	1. Project / program reports 2. Coordination or negotiation meetings 3. On site checking and inspection 4. Personal visits	At least 12 times

## Communication Channels with Stakeholders

Stakeholders	Communication Channels	Frequency (yearly)
 <b>Employees</b>	<ol style="list-style-type: none"> <li>Labor union representatives in the Board</li> <li>Listen to and communicate with labor union</li> <li>Monthly published Oil Communication</li> <li>Website special area and reporting hotlines</li> <li>Mail boxes of the chairperson and president</li> </ol>	At least 30 times, regularly or as needed
 <b>Clients and customers</b>	<ol style="list-style-type: none"> <li>Annual customer service satisfaction survey</li> <li>Report the information of product quality</li> <li>Disclose the pricing mechanism and product service on the website</li> <li>Customer service hotline (1912 hotline)</li> </ol>	At least 12 times
 <b>Affiliated partners</b>	<ol style="list-style-type: none"> <li>Build related management systems</li> <li>Meeting for suppliers (convened as needed)</li> <li>Meeting for contractors (convened as needed)</li> </ol>	At least 5 times, regularly or as needed
 <b>Community</b>	Hold the good-neighborly activities, communities' communication meetings, and public service activities	At least 12 times, regularly or as needed
 <b>Non-profit and non-government organizations</b>	<ol style="list-style-type: none"> <li>Participate in external associations</li> <li>Invite irregularly green groups to attend the environmental or ecology seminars held by CPC</li> <li>Participate in the symposiums or forums held by green groups, and listen to external voices and make good communications</li> </ol>	At least 10 times, regularly or as needed
 <b>Media</b>	Through press releases and press conference to reply to media	At least 30 times, regularly or as needed

## Copies of Stakeholder Concern Questionnaire of CSR and Management Impact Questionnaire Responded

Stockholder (MOEA)	Government	Elected representatives	Employees	Clients and customers	Affiliated partners	Community	NPOs /NGOs	Media	CPC managers
1	50	10	109	41	45	47	20	10	22

## Immediate Communication Events in 2014

In addition to the routine communication with stakeholders, CPC also pays attention to negative reports from media or events which the public is concerning or questioning. Through monitoring daily the public opinions, CPC will stand by the principles of "honestly facing, actively reviewing and aggressively examining and improving" and immediately respond to the reports in balancing and reducing the negative effects. Immediate communication events of 2014 are summarized as follows. Related responses and replies will also be posted on the company website. For more detailed disclosure, response and announcements please refer to our website at <http://www.cpc.com.tw>.

Immediately Responded Events in 2014	
Date	Event Outline
Jan. 27	Proposed LPG grant programs for low-income households
Feb. 2	Based on the floating gasoline price adjusting mechanism, the domestic gasoline price remained the same
Mar. 3	Obtained preliminary results of CPC Business Performance Promotion
Mar. 28	Signed agreement to import LNG from the U.S and obtained long-term LNG sources
Mar. 30	Explained the reason not to promise a gradual reduction of the operation in Hsinchu Oil Depot
Apr. 25	Inaugurated CPC's Chiayi Personnel Training Center that will serve as the "energy and petrochemical talent training center" in Taiwan
May 5	In response to the revised automotive diesel fuel policy of Bureau of Energy, CPC's gas stations would gradually replace with non-ester diesel
July 24	CPC's six lots on Wenhua Section in Banchiao Area, New Taipei City were successfully bidden
Aug. 2	Stated that the 4-inch propylene pipelines that caused Kaohsiung gas explosion belonged to LCY, and CPC did not transfer the pipelines to LCY
Aug. 7	Explained the reinstallation of pipelines in Kaohsiung in 1990
Aug. 9	Actively assisted with the relief in the 731 gas explosion
Aug. 21	Clarified that the transport vehicles in Kaohsiung Refinery did not receive 10 million grant
Aug. 28	Explained the petrochemical piping in Shin-Juang, Banchiao and Keelung Areas and the pipeline safety management
Aug. 29	Clarified and explained the liquid resin leakage of the chemical tanker once again
Sep. 22	Explained that the pipeline installation and the transport materials are handled in accordance with the rules and regulations
Oct. 21	Responded to the petition of the Petrol Station Business Nationwide Association
Oct. 29	Signed Letter of Intent for the disposal of used cooking oil
Nov. 11	Clarified and explained the situation that the decline of domestic oil prices was not as much as that of international oil prices
Dec. 12	Clarified that the natural gas prices fully reflected the changes in LNG import costs
Dec. 20	Refuted the untrue report in Liberty Times and explained the oil price adjustment mechanism of domestic gasoline and diesel, LPG, natural gas and fuel oil

### Response Mechanism of Negative Information from Media

Regarding negative information from media, CPC will convene the accountable and responsible executives to present explanatory information to respond to it in a consistent manner. In addition, to handle major public opinions, the spokesmen and public opinion windows are asked to be accessible through their cell phones for unexpected events. Our response mechanism of negative information from media includes (1) press release; (2) explanation by the spokesman or the spokesman from the responsible unit; (3) formal press conferences; (4) contact the reporter for explanation; (5) others (arrangement of field visit for the press and so on)

### Grievance Handling Channels and Responses

- CPC sets up a mailbox on the company website, which exclusively belongs to supervisors. It is for employees, shareholders and stakeholders to effectively communicate with supervisors. The mailbox can only be opened by 3 supervisors and individual supervisor can decide the following action if needed.
- The service mailbox is for the public, employees, shareholders and stakeholders to express the opinions, criticism and suggestions about the company business directly to the Chairperson, President, Ethics Office, and the competent business units for real-time handling.
- CPC sets up "employee grievance handling committee" to deal with employee grievance cases. The president would assign one of four VPs as the convener, and appoint one executive secretary, one to two officers to be in charge of helping, communicating, coordinating and dealing with grievance cases. It has 7~9 committee members including VP, related division or department heads, union president and representatives with two-year-tenure. The committee members are nominated by the convener and the nomination is reported to the president for approval.
- Service hotline and toll free number: 1912, 0800-036-188 (Toll free number provides 24 hours phone answering service and recording).
- Fax: (02)8789-9057

- In 2014, among all the customer and client inquiries, 2,679 suggestions, 3,211 criticism cases, 281 grievances and 577 others (including affirmative and recognition cases) were received, with a total number of 263,199 cases. Most of the cases were handled real-time or within a working day by customer service center, and only 7,266 cases required the responsible units to call back to the customers, with an average of handling time of 3-7 working days. The handling time might take more than 7 working days if the queries take too long to handle or when the customer is unreachable. In 2014, 108 cases were overdue, with an overdue rate of 0.04%. Among the cases, 281 were consumer disputes (customer grievance), and none of which was overdue.
- Concerns from Legislator Offices: CPC received 97 cases from Legislator Offices, and all of which were responded and replied based on the contents of grievance and suggestions within the time limit.
- Mailbox of Department Heads: In 2014, 117 cases were sent to the mailbox of department heads, and all of which were responded and replied based on the contents of grievance and suggestions within the time limit.

## 1.4.2 Material Aspects Analysis

CPC takes active communication attitude to reply to external voices and concerns through different channels, including the media, website, labor union, meetings, and Oil Communication Monthly. Because of the basic requirement of being cooperated with government policy, if we have any discrepancy between stakeholders and us, we would try to get the best all-around solution to reduce or eliminate the discrepancy and difference. As an example, the biggest challenge is always the huge gap between consumer expected gas price and the ever increasing international oil price. Also, petrochemical industry makes huge contribution to domestic economy, but environmental concerns is drawing more attention. Those are the most important topics we have to face modestly, professionally, and evenly.

Management Procedure of Material Aspects	
<b>Identification of stakeholders</b>	Identified <b>9 categories</b> of stakeholders
<b>Collection of sustainability topics</b>	Including the <b>52 aspects</b> in GRI-G4 guidelines
<b>Material aspects analysis</b>	In 2014, a total of <b>355</b> questionnaires were recovered and among which, 333 were Stakeholder Concern Questionnaire while 22 were Management Impact Questionnaire (distributed to company managers)
<b>Prioritize issues based on the materiality</b>	Identified <b>30 material aspects</b>
<b>Review and discussion</b>	Prioritize the material aspects after analysis and respond to chapters and content analysis; management will continue to be strengthened in the future and relevant information will be revealed in CSR

**Materiality Matrix**



**Orders of Material Aspects**

Primary Aspects		
1 Product and Service Labeling	11 Local Communities	21 Water
2 Effluents and Waste	12 Customer Privacy	22 Marketing Communication
3 Environmental Compliance	13 Economic Performance	23 Overall Situation
4 Occupational Health and Safety	14 Anti-corruption	24 Products and Services
5 Emergency Prevention	15 Indirect Economic Impacts	25 Anti-competitive Behavior
6 Emissions	16 Labor/Management Relations	26 Social Compliance
7 Customer Health and Safety	17 Alternatives to Fossil Fuels	27 Procurement Practices
8 Product Compliance	18 Assets Integrity and Safety Drills	28 Transport
9 Integrity management	19 Company Governance	29 Education and Training
10 Biodiversity	20 Energy	30 Raw Materials

Secondary Aspects		
31 Market Presence	39 Forced and Compulsory Labor	47 Labor Practices Grievance Mechanisms
32 Grievance Mechanisms for Impacts on Community	40 Public Policy	48 Supplier Human Rights Assessment
33 Environmental Grievance Mechanisms	41 Involuntary Resettlement	49 Supplier Assessment for Labor Practices
34 Supplier Environmental Assessment	42 Assessment	50 Freedom of Association and Collective Bargaining
35 Indigenous Rights	43 Investment	51 Non-discrimination
36 Supplier Assessment for Impacts on Society	44 Child labor	52 Security Practices
37 Employment and labor relations	45 Equal Remuneration for Women and Men	
38 Employee Diversity and Equal Opportunity	46 Human Rights Grievance Mechanisms	



**Orders of material aspects after analysis, corresponding chapters and content analysis**

- With significance and is revealed here, and its continuous management will be strengthened
- With significance and is planned to be revealed in 2 years
- ▲ With significance outside the organization, and is revealed here by means of the supplier CSR evaluation analysis

Order	Material Aspects	Corresponding Chapter	Within the organization		Outside the organization	
			CPC	Affiliated Companies	Suppliers	Contractors
1	Product and Service Labeling	2.4 Green Products	●			
2	Effluents and Waste	2.2 Fulfillment of Environmental Responsibility	●		▲	
3	Environmental Compliance	2.1 Green Management	●	○	▲	
4	Occupational Health and Safety	3.3 Sustainable Workplace	●	○		▲
5	Emergency Prevention	3.3 Sustainable Workplace	●			▲



Order	Material Aspects	Corresponding Chapter	Within the organization		Outside the organization	
			CPC	Affiliated Companies	Suppliers	Contractors
6	Emissions	2.2 Fulfillment of Environmental Responsibility	●	○	▲	
7	Customer Health and Safety	2.4 Green Products	●			▲
8	Product Compliance	3.1 Customers and Us	●		▲	
9	Integrity Management	1.3 Company Governance	●	○	▲	▲
10	Biodiversity	2.2 Fulfillment of Environmental Responsibility	●			
11	Local Communities	3.5 Cheer for Love	●		▲	
12	Customer Privacy	3.1 Customers and Us	●			▲
13	Economic Performance	1.2 Operational Achievement	●			
14	Anti-corruption	1.3 Company Governance	●	○	▲	▲
15	Indirect Economic Impacts	3.5 Cheer for Love	●			▲
16	Labor/Management Relations	3.4 Great to Have You	●			
17	Alternatives to Fossil Fuels	2.5 Green Energy	●			
18	Assets Integrity and Safety Drills	3.3 Sustainable Workplace	●		▲	
19	Company Governance	1.3 Company Governance	●			
20	Energy	2.2 Fulfillment of Environmental Responsibility	●	○	▲	
21	Water	2.2 Fulfillment of Environmental Responsibility	●	○	▲	
22	Marketing Communication	3.1 Customers and Us	●			
23	Overall Situation	2.1 Green Management	●		▲	
24	Products and Services	2.4 Green Products	●			
25	Anti-competitive Behavior	3.1 Customers and Us	●			
26	Social Compliance	1.3 Company Governance	●		▲	▲
27	Procurement Practices	3.2 Affiliated Partners	●			
28	Transport	Special Edition: Start from CPC	●			
29	Education and Training	3.4 Great to Have You	●			▲
30	Raw Materials	2.3 Green Effects	●		▲	

## 1.5 Outlook of CPC

To pursue the company's sustainable development, the short and medium term goal of CPC is to adjust the operational structure and to set operating profit improvement as the priority, while the long-term goal focuses on the promotion of sustainable development and CPC's privatization, aiming to keep working toward our vision of being the "the international energy conglomerate covering the business of exploration, production of oil products and gas, and petrochemistry with high tech and competitiveness"

### CPC's Strategic Goals of Future Development

Term	Strategic Goals	Description
Short term	Adjust Management Structure	<ul style="list-style-type: none"> <li>• Carry out Kaohsiung Refinery Relocation Project</li> <li>• Adjust refining capacity, structure and plant allocation</li> <li>• Elevate self-R&amp;D capability</li> <li>• Adjust production and sales planning based on marketing-orientation</li> </ul>
	Enhance Operational Profit	<ul style="list-style-type: none"> <li>• Push for management improvement and enhance productivity</li> <li>• Revitalize land and tangible assets</li> <li>• Instantly grasp market information and flexibly adjust delivery and storage</li> <li>• Expand exporting market and enhance multi-lateral trading</li> <li>• Push for high value-added petrochemistry and increase output of high value-added products</li> </ul>
Medium term	Enter into International Market	<ul style="list-style-type: none"> <li>• Diversify oil and gas sources</li> <li>• Develop international exploration</li> <li>• Broaden overseas oil and gas trading</li> <li>• Expand overseas operational locations</li> </ul>
	Broaden Brand Value	<ul style="list-style-type: none"> <li>• Deepen brand value</li> <li>• Enhance advantages in market channel</li> <li>• Improve customer relationship management</li> <li>• Provide quality products and delicate service</li> </ul>
Long term	Promote Sustainable Development	<ul style="list-style-type: none"> <li>• Fulfill corporate social responsibility</li> <li>• Push for work safety</li> <li>• Reduce greenhouse gas</li> <li>• Develop green energy</li> </ul>
	Push for Privatization	<ul style="list-style-type: none"> <li>• Enhance the communication and build the consensus</li> <li>• Make up accumulated losses, improve company operations, and create a favorable environment of privatization</li> </ul>

### Entering Global Top 150 Companies

CPC promised to follow integrity company governance, to increase revenue, to devote R&D in enhancing technology, and to take strategic blueprint progressing toward “The domestic innovator of high value-added product and new material”, “The leader of domestic energy market”, “The prospector and acquirer in international critical oil and gas fields”, and “The petrochemical company with international operation capability”. We will strive to become the international renowned enterprise of the CSR exemplar, and set the objective of leaping into the Global Top 150 companies.

**Being a international renowned enterprise of CSR exemplar  
Becoming the Global Top 150 companies**



# Special Edition

## From Crude Oil to Petrochemicals

### Safety First!

### Album 1: Build a safe city by implementing pipeline management

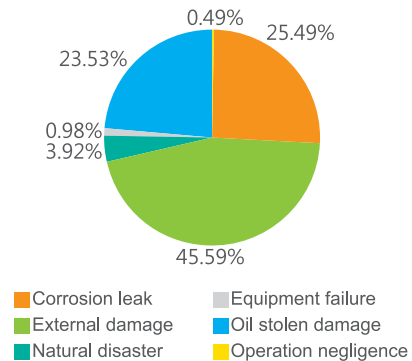


#### Why Do We Need Pipelines?

CPC owns more than 7,000 kilometers pipelines, all these pipelines were transport crude oil, refined oil, natural gas, LPG and petrochemical pipelines. CPC is obligated to transport sufficient oil products to everywhere of Taiwan. Without pipelines, tankers are not able to meet the demand, and enormous tanker trucks on the roads may raise public safety concerns.

#### Causes of Pipeline Accidents

- Corrosion leak:** leaks caused by internal and external corrosion
- External damage:** damage caused by third party construction
- Natural disaster:** pipeline was destroyed by natural forces (such as earthquakes, typhoons, flooding and debris flow)
- Equipment failure:** leaks caused by the aging of pipeline materials
- Oil stolen damage:** pipeline was damaged due to stealing
- Operation negligence:** pipeline was damage caused by operation negligence



#### Prevention Measures for Pipeline Accidents

##### External damage :

- 1.Detection of pipeline location and GPS positioning to establish pipeline management information and return system
- 2.Strengthen investigation and surveillance
- 3.Confirm pipe location at site then carry out repairing work

##### Corrosion leak :

- 1.Cathodic protection
- 2.Close-Interval Survey (CIS)
- 3.Intelligent Pig (IP) inspection

##### Oil stolen damage :

- 1.Pipeline monitoring system
- 2.Check oil quantity
- 3.Right-of-way (ROW) patrol and checking suspicious areas

Pipeline management is a professional and meticulous task. CPC's pipelines can be found across the island and even on seabed for transporting of oil, natural gas and petrochemical products, etc. Therefore, a pipeline management system is needed in order to maintain the pipeline safety. In case of any incident, actions could be taken immediately to avoid severe casualty to industries and environments.

### 1.Management Practices and Guidelines for the Oil and Gas Pipelines

Due to an explosion from a LPG pipeline at Zhenxing Bridge in Kaohsiung, CPC set up the Department of Storage and Transportation in March, 1998, to managing the pipeline business and establishing pipeline management system. From 1999 to 2014, the Department established the "Management practices for the oil and gas pipeline" and 30 Guidelines.



## CPC's Management Practices and Guidelines for Oil and Gas Pipeline

Management practices for the oil and gas pipeline	Guidelines of close-interval potential survey for the oil and gas pipeline
Operation Guidelines for the oil and gas pipeline pigging	Guidelines for Global Positioning System (GPS) measuring of the pipeline
Standard practices of colors and labeling on tank, equipment, pipelines and steel	Guidelines for the management of pipeline geographic information system
Guidelines for the seismic capacity assessment and reinforcement of the pipeline	Guidelines for the operation of pipeline risk assessment
Guidelines for the operation of the oil and gas pipeline	Guidelines for the replacement of the oil and gas pipeline
Guidelines for the oil and gas pipeline patrol	Guidelines for the operation of pipeline excavating
Guidelines to audit the operation for oil and gas pipeline patrol	Guidelines for removing liquefied gas within the pipeline
Guidelines of pipeline management for audit team	Guidelines for removing oil and gas in the pipeline
Guidelines for the inspection and construction stationing of the pipeline	Guidelines for the Management of Change (MOC) of pipeline
Guidelines to prevent external damage for the pipeline	Guidelines for the contingency response to the pipeline incident
Guidelines to prevent and handle oil pipeline stolen	Guidelines for the contingency response to oil storage tanks and pipelines after earthquake
Guidelines for rewarding people to report oil pipeline stolen	Guidelines for the operation management of the sub-sea oil pipeline
Guidelines for rewarding employees to report oil stolen and rewarding and punishing for pipeline inspecting personnel	Guidelines for the inspection and maintenance management of subsea gas pipeline
Guidelines to protect the informant security for oil stolen case	Guidelines for the handling of pipelines and facilities passing through private land
Guidelines to inspect for oil and gas pipeline	Guidelines for mapping data maintenance of pipelines and facilities
Guidelines for the anti-corrosion coating and cathodic protection of the oil and gas pipeline and the oil storage tank	

## 2. Implementation of Pipeline Management

- (1) In accordance with Petroleum Administration Act: A yearly planning for the oil pipeline management (include a variety of operating plans about pipeline maintenance, inspection, replacement, oil stolen prevention, leak prevention, and contingency response) for the following year must be drawn up before the end of October of each year, and the record for last year to be submitted to authorities before the end of January of each year.
- (2) In accordance with the Natural Gas Enterprise Act: The natural gas enterprises should submit an annual plan for gas line management (include maintenance, inspection, and replacement) for the next year before October 31, and then report to the municipality, county authorities forward to central government authority for their review.
- (3) In accordance with the Provisions for Natural Gas Enterprise to Establish Geographic Information System for Transmission and Storage Facilities: Natural gas enterprises should update the information of its pipelines, valves, filling stations and manhole (hand hole) at least once a year, and completed by the end of March of the year. However, the new pipelines with a total length over 20 km should be updated the aforesaid information within 3 months after the completion.
- (4) Maintenance of pipeline mapping system: Finish drawings, basic design data, location coordination information and system application of pipelines shall be included in the system.



### Aerial Overlooking Rendering for Pipelines



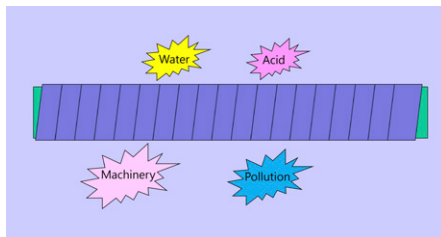
(5) Pipeline patrol and pipeline management audit:

1. Pipeline patrol operations: patrol, mapping information of construction, investigation, guarding and patrol monitoring.
2. Pipeline management audit team conducts on-site auditing every month, business advocacy and sharing of the pipeline management experiences.
3. The oil stolen prevention group within the pipeline management team for each business unit should convene a meeting once every 6 months to review the pipeline management performance.

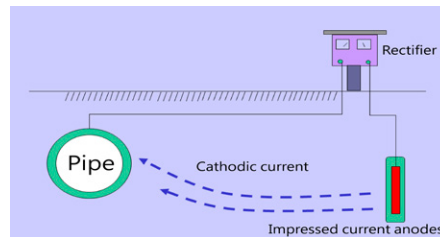
(6) Maintenance for Pipeline and its associated facilities: cathodic protection measurements, pipeline position detection, Close Interval Surveys (CIS), GPS positioning measurement, IP inspections, pipeline risk assessment, abnormal location maintenance, pipeline replacement, oil stolen prevention and leak prevention, etc..

### Cathodic Protection System

Maintain the underground pipelines in good conditions by using cathodic protection



Pipeline cladding  
Insulate pipeline by anti-corrosion tape

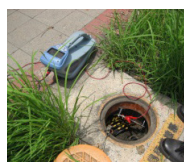
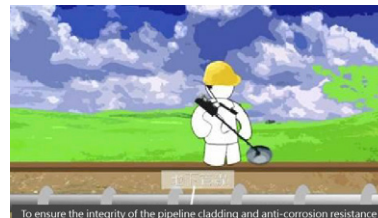
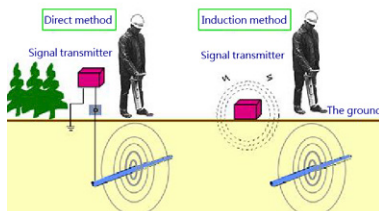


Cathodic protection  
Anti-corrosion by cathodic protection



### Pipeline Position Detection Principles

By electromagnetic wave theory, apply current from signal transmitter to pipeline to induce magnetic field. When use signal receiver (with the same frequency as the applying current) can easily to detect the accurate location of pipeline if we scanned the adjacent location of the existed pipeline (usually done meandering along the center of pipeline).



## Instruments for Pipeline Position Detection

Signal transmitter

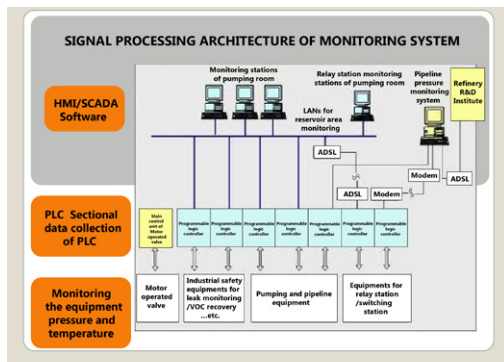


Signal receiver



(7) Pipeline system operation and monitoring: checking the received and dispatched oil amount, monitoring pipeline pressure and flow variation.

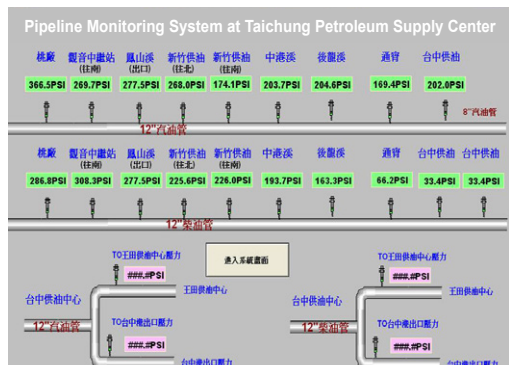
## Oil Pipeline Monitoring System



### oil pipeline

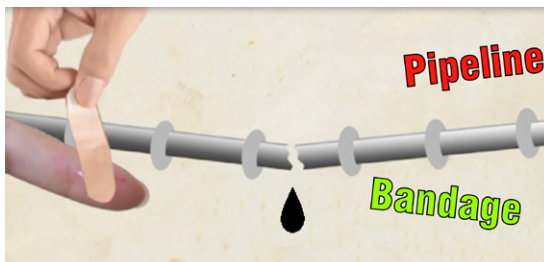
- Monitoring the pipeline pressure/ temperature / oil stolen
- Mass flow meter dynamic monitoring/ Checking the received and dispatched oil amount
- Monitoring O<sub>2</sub> / VOC/ water level at underground switch stations
- Monitoring the pipeline pressure / leak surveillance / MOV at switch stations
- Monitoring the pipeline pressure /oil leakage/ CCTV surveillance/ MOV at relay stations
- Monitoring the current/ pressure/ temperature on 400HP relay pump

### Logging of work handover for message workstation



(8) In case of pipeline oil spill treatment

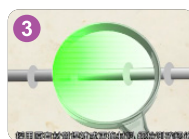
## Standard Operation Procedures of Contingency Response for Pipeline Oil Spill



1 Shut down oil/gas pump and valves. Allocate the damaged location



2 Clamping























3 Repair by welding or replace the pipe



4 Confirm to ensure public safety



(9) The Emergency Response Plan and Drill for Pipeline: The pipeline emergency response plan is drawn up and implemented once a year according to the requirement of CPC's "Guidelines for the contingency response to the pipeline incidents" and "Annual contingency response drills".

			
1.Notification of the leakage incident	2.Commencement of the incident prevention mechanism	3.Setting up on-site hazard control zone	4.Commanding from emergency center
			
5.Evacuation instruction and media reporting	6.Fire team staying alert with fire extinguisher	7.Fire team staying alert with the hydrant	8.An aid station in the relief squad set up to stand-by
			
9.Safety protection team conducting safety test	10.Protection team entering to repair	11.Fire team keeping staying alert	12.Sandbags stacked to block leakage
			
13.Oil spillage containment by river oil booms	14.Stopping the leakage by using the pipe clamp	15.Oil recovery and site clean-up	16.Pipeline oil pumping and pipe cut for replacement
			
17.Oil cleanup	18.Counting head after emergency termination	19.The whole team gathering after the emergency response drill finished	20.Review and commenting

2014 Emergency response drill for pipeline at Keelung Petroleum Supply Center (2014/8/27)

### CPC's Contingency Response Measures after Kaohsiung Explosion Incident

In the midnight of July 31, 2014, a series of propylene explosion incidents in Cianjhen and Linya Districts in Kaohsiung, left 32 people dead and 321 people injured. Moreover, roads including Sanduo 1st Road, Sanduo 2nd Road, Kaixuan 3rd Road and Yisin 1st Road were seriously damaged, causing the collapse of buildings.

CPC set up The Emergency Response Center in CPC headquarter and Kaohsiung separately, to provide manpower, equip-

ment assistance and professional technical support to Kaohsiung Government, also carried out overall survey of the pipelines (pipeline ROW patrol, operation and pressure variation). Meanwhile, CPC also cooperated with the Kaohsiung District Prosecutors Office for the investigation of the incident. It was proved that the incident was not caused by the lack of CPC's anti-corrosion system nor inspection eventually.

Since the incident induced serious losses and far-reaching subsequent impact, a "Survey team for pipelines" was established on August 14, 2014, to handle pipeline-related businesses, including the review and revision of the pipeline management system, controlling of installation, operation, inspection and maintenance for the pipelines to reduce the operational risk of CPC's pipelines.

### 3. Achievement of the Survey team for Pipelines

- (1) Improvement of pipelines crossing culverts: about 70% completed by the end of May, 2015.
- (2) Investigating and updating the data of pipeline map: It took 3 months to investigate and update the data of CPC owned Taiwan area pipelines map. All the data of pipelines map were submitted to the competent authorities, including Bureau of Energy and all concerned county and/or city governments, by February 5, 2015.
- (3) Establish pipeline finish drawings information on platform with inquiry function: Each pipeline unit has scanned the as-built drawings and converted into TIF or PDF format files, and Department of Information Management saves these files in the server of "CPC Pipeline Management Information System". Furthermore, the related information establishment of as-built drawing of Kaohsiung pipeline unit has completed.
- (4) Report for review and recommendations on pipeline management: The report "The review and recommendation of underground industrial piping maintenance management, response to 731 Kaohsiung Gas Explosion" was submitted to Ministry of Economic Affairs (MOEA) on October 1, 2014.
- (5) Suggestion and recommendation for governmental law amendment: The proposed amendments for the draft of revised bill of "Factory Management Act", stating that there are contradictions, violating the principle of proportionality and the difficulties in implementing comparing with the current bill, was submitted to MOEA on December 16, 2014.
- (6) Review and revision of the relevant provisions of CPC's pipeline management: On-going in 2015.
- (7) Installing the on-site leak detector: Detector installation completed in 2015, and the testing is still on-going.
- (8) Audit and check of each Pipeline unit from headquarters: Check and audit the Pipeline management performance for each Pipeline unit monthly by the units staff at the headquarters, including Chief Engineer's Office, Department of Industrial Safety & Health, Department of Environmental Protection and Department of Storage and Transportation, based on their regulatory work scopes.
- (9) Organizing pipeline management training courses: 2 training courses on Pipeline Management System and 1 training course on Pipeline Management Work Scope, with a total of 131 trainees.

### 4. Assist the petrochemical industry enterprises to set up pipeline management business

- (1) CPC invited the operators in downstream petrochemical industry to attend the following seminars, including "Workshop on the Maintenance of Petrochemical Pipelines", "Report meeting of the underground pipelines operations, inspection and ROW patrol", and "Consultation on test plan submitting to Industrial Development Bureau concerning industrial pipeline inspection in Kaohsiung Area", to explain CPC business concerning pipelines operations, inspection and ROW patrol. In addition, CPC provided participants with briefing materials of oil and gas pipeline management and related forms for reference.
- (2) CPC attended the 1st and 2nd meetings of "Information Exchange of Underground Industrial Pipeline Transportation at both ends", organized by High-Value Petrochemical Industry Promotion Office, MOEA. And CPC has assisted to set up the monitoring information platform for both ends of the output and receiver.
- (3) CPC provided the industrial pipeline maintenance management plan to the operators in the petrochemical industry for reference.
- (4) CPC held 2 sessions of "Training course on the Maintenance Practices and Management of Underground Pipeline System" and provided 80 seats for enterprises' staff in charge of underground pipeline management, and a total of 83 participants joining in.



# Album 2: Tanker Uploading and Loading Operation Safety and Courteous Driver Activity



CPC has a total of 14 fuel depots, serving the 1,985 gas stations in Taiwan. The transport of our oil products is mainly by tanker trucks. In order to safeguard the public and the employee safety and to reduce the impact on the environment and communities, CPC continuously review the risk factors of the uploading and loading operations of the tanker, set and implement standard operating procedures, introduce automation control system and personnel education and training to reduce risks in tanker operation process.

### Major Operations of a Tanker



Oil loading



Oil uploading

Road safety

### Hazards of Oil Loading Operation

Oil overflowing	Electrostatic fire	Vehicle slide	Loading hoses , drive the tanker with the vapor recovery hose left connected
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### SOP of Oil Loading Operation

- 

1



2



3



4
- 

5



6



7



8
- 

9



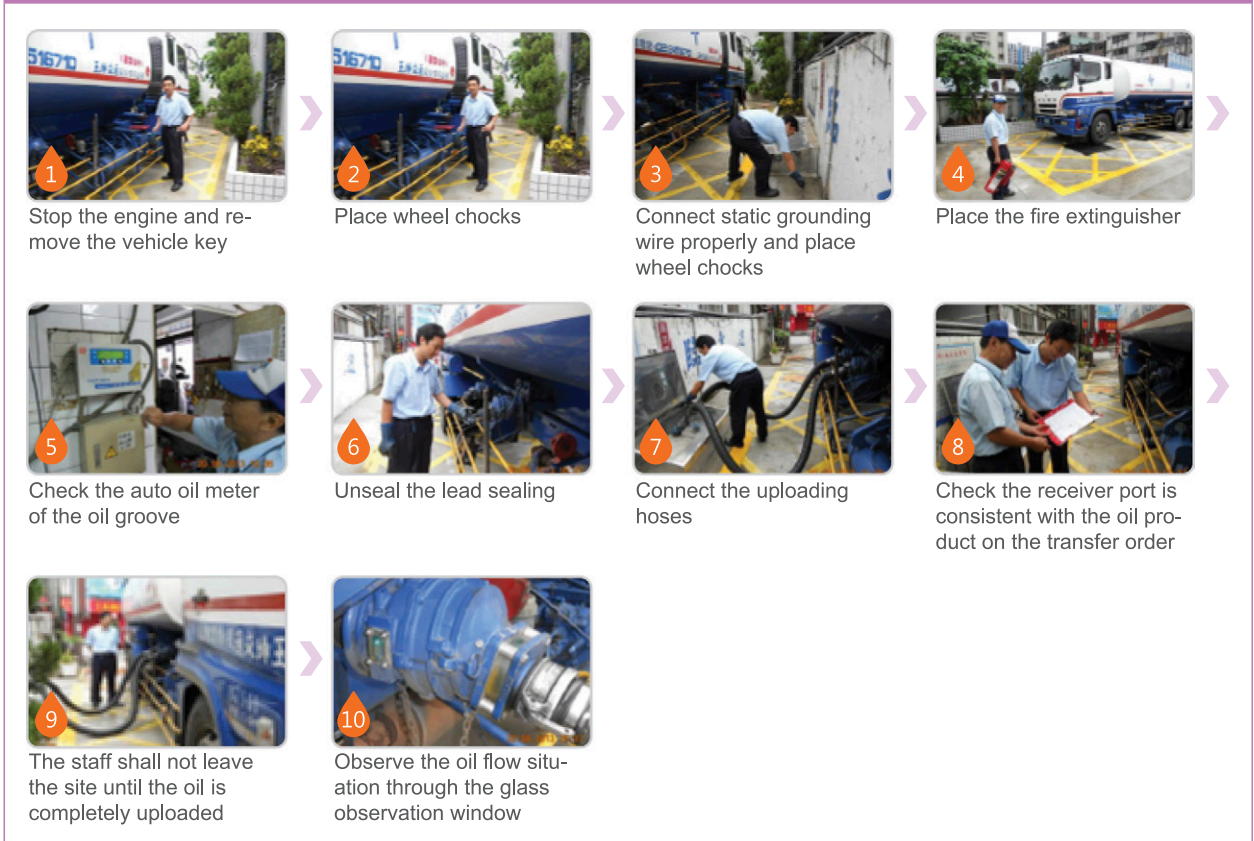
10



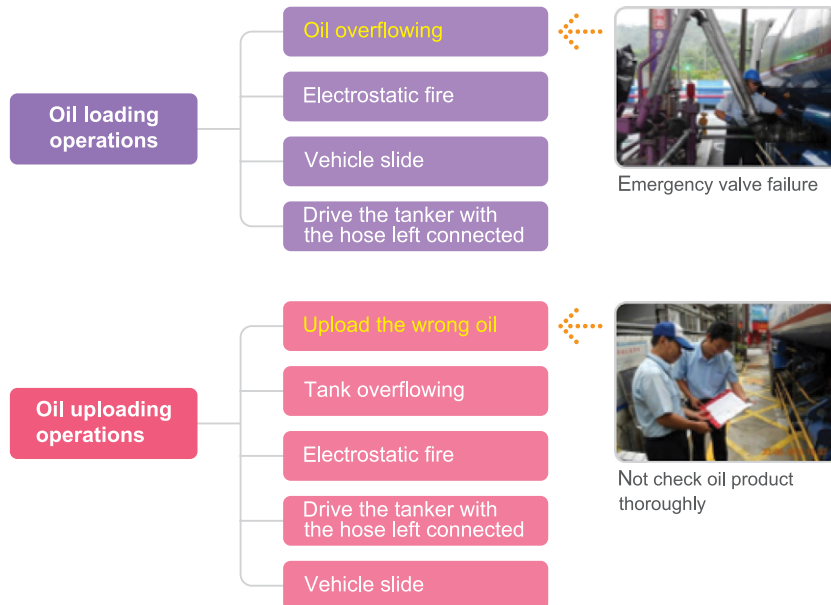
## Hazard Factors for Oil Uploading Operation at the Gas Station

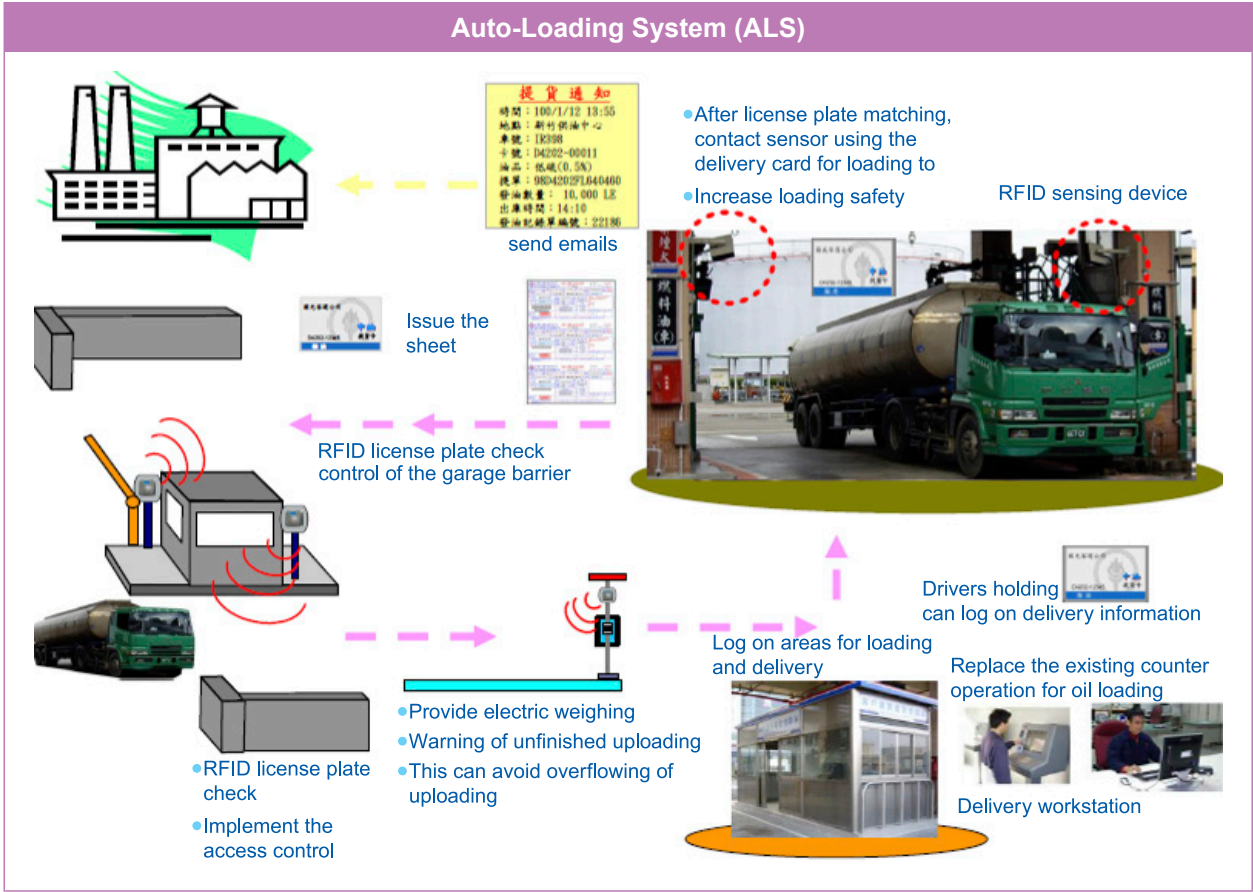
Upload the wrong oil product	Tank Overflowing	Electrostatic fire	Vehicle slide	Uploading hoses, drive the tanker with the vapor recovery hose left connected
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### SOP of Oil Uploading Operation







### Discussion on the Major Hazard Factors of Oil Loading and Uploading









### Devices Preventing Wrong Uploading at Gas Stations

Software	Hardware		
Uploading checklist	Color management	Different types of connectors	Different colored keychain for differentiation
			



## 2014 Courteous Tanker Truck Driver Competition

Grooming dressing and service attitude	Clean vehicle, labelling and fire extinguisher	Driving discipline	Loading and unloading SOPs
<ul style="list-style-type: none"> <li>• Dressing (working suit)</li> <li>• Wear safety shoes</li> <li>• Neat and clean appearance</li> <li>• Attitude (enthusiastic and vital)</li> </ul>	<ul style="list-style-type: none"> <li>• Clean and bright</li> <li>• Labelling of speed limit, driver's name, customer service line, and dangerous goods</li> <li>• Appearance of fire extinguisher (check records)</li> <li>• Check if the machine parts and accessories are firmly fixed</li> </ul>	<ul style="list-style-type: none"> <li>• No violation of traffic rules, such as no overtaking a car (no speeding), and no running through a red (yellow) light</li> <li>• Maintain a safe distance (no forcing cars)</li> <li>• Do not change the car lane at will</li> <li>• Do not press car horn constantly</li> </ul>	<ul style="list-style-type: none"> <li>• During the oil loading and unloading, shift gear, use the brake handle , remove the engine key and place the wheel chocks</li> <li>• Before the oil loading and unloading, properly connect the static grounding wire</li> <li>• When arriving at the station, check the station name, oil product, quantity and check the lead seals with the oil receiving staff. After the unloading, check the completion of unloading with the receiving staff and then disconnect the hose (vapor recovery hose)</li> <li>• Remain onsite and monitor the oil loading and unloading</li> </ul>
			

In 2014, 10 fuel depots and transport centers participated in this activity, and the top three winners were eligible to have bonus rewards.







02

# Value-Added Sustainability

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## Determination of the Future, Actions for Energy Conservation and Carbon Reduction

**↓ 19.4%**

In 2014, the environmental protection fines decreased by 28% compared with 2013.

**21** Departments or Divisions

As of the end of 2014, 21 departments or divisions within CPC have been awarded ISO14001 certificates for environmental-management system.

**6.09** billion dollars

CPC's environmental protection cost in 2014 was approximately NTD 6.09 billion.

↓ 25%

CPC's liquid energy intensity in 2014 was 0.003 KL/KL, a 25% decrease compared with 2013.

↓ 5.56%

CPC's gas energy intensity in 2014 was 0.017 thousand m<sup>3</sup>/KL, a 5.56% decrease compared with 2013.

↓ 1.63%

CPC's energy use intensity in 2014 was 10.652 kwh/KL, a 1.63% decrease compared with 2013.

↓ 6.11%

CPC's water use intensity in 2014 was 0.246 m<sup>3</sup>/KL, a 6.11% decrease compared with 2013.

↓ 10%

CPC's wastewater discharge intensity in 2014 was 0.09 ton/KL, a 10% decrease compared with 2013.

↓ 7.14%

CPC's VOCs emission intensity in 2014 was 0.026 kg/KL, a 7.14% decrease compared with 2013.

↓ 22.81%

CPC's air pollutant emission intensity in 2014 was 0.044 kg/KL, a 22.81% decrease compared with 2013.

↓ 2.148 million tons

From 2005 to 2014, CPC has saved the equivalent amount of 720 thousand kl of oil, which is equivalent to 2.148 million tons of CO<sub>2</sub> emission.

↓ 2.53 million tons

In 2014, CPC reduced 323 thousand tons of CO<sub>2</sub> emission, with the accumulated carbon reduction equivalent of 2.53 million tons.

↓ 22.5%

CPC's SO<sub>x</sub> emission in 2014 was 2,572 tons, a 19% decrease compared with 2013.

↓ 7.3%

CPC's NO<sub>x</sub> emission in 2014 was 5,112 tons, a 7.3% decrease compared with 2013.

↓ 5.7%

CPC's VOCs emission in 2014 decreased by 5.7% compared with 2013.

↓ 29.8%

CPC's net emission of hydrocarbon from flare burners in CPC's 4 plants in 2014 was 55,610.9 thousand m<sup>3</sup>, a 29.8% decrease compared with 2013.

↓ 13%

CPC's waste water release amount from refineries and petrochemical plant in 2014 was 15.59 million tons, a 13% decrease compared with 2013.

↑ 14.5%

CPC's waste water recycling rate in 2014 was 65.4%, a 14.5% increase compared with 2013.

100%

The recycled percentage of Nickel from nickel-on-alumina catalyst (LD 241) waste, catalyst waste and waste carbon reached 100%.

79 thousand tons of carbon dioxide equivalent

CPC's cold energy supply from Yung-an and Taichung Plants enables the Far East Industrial Gases Co., Ltd, Blue Sea Industrial Gases Co., Ltd, Taichung Plant and Yung-an plant to reduce their purchase of power, and as of the end of 2014, the GHG reduction was 78,871 tons Carbon dioxide equivalent.

9.7 Da An Forest Parks

From 2008 to the end of 2014, the accumulated planting area was over 140 hectares. A Da An Forest Park can absorb 370 tons of Carbon dioxide emission annually. So the amount of CO<sub>2</sub> that can be absorbed with the planted trees is about 9.7 Da An Forest Parks.



### 400 thousand kwh

The cumulative amount of electricity generation in the 6 CPC gas stations installed with the PV systems reached more than 400 thousand kwh, and the amount was fully sold to Taiwan Power Company.

### 8 Green Building Labels

As of 2015, 8 gas stations applied and obtained the Green Building Label.

### ↓71.94 million dollars

Four Saving Measures for the Offices" in 2014 saved NTD 71.94 million dollars compared with 2011 (the base year).

### 90.6%

The green purchasing achieved for CPC in 2014 was 90.6%, exceeding the original target.

### ↓4.43%

CPC's petrochemical energy intensity in 2014 was 19.4 GJ/ton, a 4.43% decrease compared with 2013.

## 2.1 Green Management



Stable energy supply is our main responsibility. We strive to be a multi-dimensional enterprise with environmental protection in mind through actively improving petro product quality, pushing energy saving and carbon emission reducing, emphasizing on pollution prevention, enhancing source control, applying low pollution manufacturing process and state-of-the-art pollution prevention facilities, acting on environmental protection commitment, building environmental monitoring systems and working on environmental protection education and training so as to protect and improve the environment, effectively communicate with the general public, and affirm our environmental protection responsibility and sustainable manageability.



### CPC's Major Tasks for Environmental Protection in 2014

- Push for green management
- Greenhouse gas inventory and reduction
- Promote product carbon and water footprint
- Implement energy saving and carbon reduction
- Four Saving Measures for the Offices
- Environmental conservation and tree planting



### ↓19.4%

In 2014, the environmental protection fines decreased by 19.4% compared with 2013

## Review of and Improvement on Green Management

In 2014, CPC got fined for 28 cases of environmental protection violations with the amount of NT\$ 5.96 million. Also, there are 22 cases under appeal. There are 36 cases of air pollution cases, 6 water and soil pollution, 6 waste water, and 2 haz-

ardous materials. Adhering to the regulation is the first step in pushing for environmental protection, and in 2014, we revised “Key Points for the Management of Observing Environmental Protection Regulations” and set up environmental protection documentation management system and environmental protection checking group to enhance and inspect the fulfillment of the regulations in our refineries and the petrochemical complex. Meanwhile, each unit also conducted independent on-site inspections. The air pollution fines in 2014 decreased by 28% compared with 2013.

Fines of Environmental Protection Violations			
Year	Environmental Protection Controlled Value <sup>1</sup>	Number of Tickets <sup>2</sup>	Total Fine
2014	<19	28	5.96 million
2013	<19	40	7.396 million
2012	<15	19	4.662 million

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

Note 2: The number and amounts are the ones reported to State-Owned Enterprise Commission, not including those under appeal

### Major Improvement Measure for Environmental Protection Violations

- Regularly hold “Environment Protection Business Meeting”.
- Implement the attribution of the responsibility for the environmental fines and ticket, and put it into annual performance review.
- Revise the “Key Points for the Management of Observing Environmental Protection Regulations” .
- Emphasize on following “Control Procedures for Waste Water Releasing”.
- Strengthen verification of conformity (VOC) for equipment inspection, service and maintenance.
- Implement inspection and auditing on environmental protection work.



**21**  
Departments

As of the end of 2014, 21 departments or divisions within CPC have been awarded ISO14001 certificates for environmental management system.

## 2.1.1 Green Management in Action

Since 1996, CPC has started promoting ISO14001 certificates for environmental management system, and by the end of 2014, a total of 21 departments or divisions within CPC have been awarded such certificate. They also pass the inspection conducted by the Bureau of Standards, Metrology and Inspection (BSMI), MOEA annually.

### Key Points for CPC’s Green Management Promotion

#### Environmental Protection Auditing

In 2012, to reinforce environmental protection work for all divisions, we formed Environmental Protection Auditing Group which consists of one representative each from Department of Environmental Protection, Marketing Business Division, Exploration & Production Business Division, Taoyuan Refinery, Kaohsiung Refinery, Dalin Refinery, Linyuan Petrochemical Complex and Refining & Manufacturing Research Institute. The head of Department of Environmental Protection or his/her proxy serves as the convener.

#### Promoting Environmental Education Activity

To fulfill corporate social responsibility, CPC has diversified environmental protection education and broadened the participation. Besides offering more environmental protection education for internal employees and general public, we also strive to teach elementary school students environmental protection because the education and idea building should start young.

#### Developing Clean Energy

CPC actively provides environmental friendly oil products and also abides by the national energy policy.

#### Environmental Education and Training

In order to enhance the environmental protection knowledge and skills, besides following environmental protection regulations for the onsite personnel and professions, continuous training is also needed to get the latest knowledge for better job performance.

## 2.1.2 Environmental Cost and Efficiency



**6.09**  
billion dollars

CPC's environmental protection cost in 2014 was approximately NTD 6.09 billion.

"Environmental Accounting and Information Group" in Sustainable Management Development Committee regularly reports to the committee for our environment account related statistics and expects the stakeholders to understand our environmental accounting cost in company operation, management, R&D, losses compensation and related taxed and fees. Control and adjustment is implemented based on the report. CPC's environmental protection cost in 2014 was approximately NTD 6.09 billion.

2014 Environmental Protection Cost			
Unit: ten thousand			
Year	2012	2013	2014
Company Operation Cost <sup>1</sup>	370,194	261,469	281,427
Suppliers and Clients Related Cost <sup>2</sup>	1,768	2,466	1,770
Management Activity Cost <sup>3</sup>	24,580	25,991	24,372
R&D Cost <sup>4</sup>	26,413	26,895	12,834
Social Activity Cost <sup>5</sup>	13,505	14,747	13,458
Loss and Compensation Cost <sup>6</sup>	164	615	143
Fees and Taxes <sup>7</sup>	263,037	268,481	275,207
<b>Total</b>	<b>699,663</b>	<b>600,664</b>	<b>609,211</b>

Note 1: Cost on pollution prevention, global environmental protection and resource recycle.

Note 2: Cost on green purchase and utilization of recycled resource, related cost on product service for environmental protection, packaging material cost with less environmental impact.

Note 3: Cost on environmental education training, getting certification, environmental monitoring and measurement, taking care of impacts on environment, environmental protection insurance, government fees on air, soil, and water pollution, and other tax and fees.

Note 4: Related cost on R&D for environmental protection products, reducing environmental impact for product sales and marketing, and environmental impact evaluation.

Note 5: Cost on environmental protection, tree planting, environmental beautification, supporting environmental related charities, environmental groups, reports, and environmental protection promotion.

Note 6: Cost on environmental protection problem solving, compensation, fine, and law suits, city landscaping, and environmental protection on residential areas.

Note 7: Cost on government fees on air, soil and water pollution and other tax and fees.



Liquid energy intensity

↓25%

Gas energy intensity

↓5.56%

power consumption intensity

↓1.63%

Water consumption intensity

↓6.11%

Wastewater volume intensity

↓10%

VOC emission intensity

↓7.14%

Air pollutant discharge intensity

↓22.81%

Petrochemical energy intensity

↓4.43%

We add 2nd stage environmental accounting performance index and in 2012, for the first time, we calculated efficiency on raw materials and energy needed for production to better understand the long term trend and use it for improvement to reduce environmental impact. Environmental efficiency index is calculated with total amount of production or refinery as the denominator, and with amount of raw materials, energy needed, and amount of pollutant produced as the numerators. The smaller the number, the less the raw materials, the less energy, the less pollutants produced, the less the environmental impact.

## Efficiency Index on Environment Impact

Name of the Index	2012	2013	2014	Proportion of 2014 compared with 2013 ±%
1. Petrochemical raw material intensity Raw material needed (KL)/ Petrochemical production (KL) <sup>1</sup>	0.084	0.074	0.083	12.16%
2. Crude oil intensity Crude oil needed (KL)/ Amount of refinery EDC (KL) <sup>2</sup>	0.229	0.201	0.203	1.00%
3. Liquid energy intensity Liquid energy needed (KL)/(Amount of refinery EDC+ petrochemical products) (KL) <sup>3</sup>	0.004	0.004	0.003	-25.00%
4. Gas energy intensity Gas energy needed (km <sup>3</sup> )/(Amount of refinery EDC + petrochemical products) (KL) <sup>4</sup>	0.019	0.018	0.017	-5.56%
5. Water usage intensity Water needed (M <sup>3</sup> )/(Amount of refinery EDC + petrochemical products) (KL)	0.243	0.260	0.246	-6.11%
6. Energy use intensity Electricity needed (kwh)/(Amount of refinery EDC + petrochemical products) (KL)	10.265	10.828	10.652	-1.63%
7. GHG emission intensity Carbon dioxide emission equivalent (ton)/(Amount of refinery EDC + petrochemical products)(KL)	0.048	0.046	0.049 <sup>7</sup>	6.52% <sup>8</sup>
8. Waste intensity Wastes (kg)/(Amount of refinery EDC + petrochemical products) (KL)	0.242	0.220	0.273	23.53%
9. Waste water intensity Waste water (ton)/(Amount of refinery EDC + petrochemical products) (KL)	0.094	0.100	0.09	-10.00%
10. Wastewater pollutant intensity Total amount of wastewater pollutants (kg)/(Amount of refinery EDC + petrochemical products) (KL) <sup>5</sup>	0.006	0.005	0.005	0.00%
11. VOC emission intensity Amount of VOC emission (kg)/(Amount of refinery EDC + petrochemical products) (KL)	0.030	0.028	0.026	-7.14%
12. Air pollutant emission intensity Amount of air pollutants (kg)/(Amount of refinery EDC + petrochemical products) (KL) <sup>6</sup>	0.061	0.057	0.044	-22.81%

Note 1: Petrochemical raw material needed = (naphtha + reformat + xylene mixture) needed. Amount of petrochemical product is the total converted EDC amount for ethylene, propylene, butadiene and benzene

Note 2: Equivalent Distillation Capacity (EDC). Standardized amount for different refinery process

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

Note 4: Gas energy needed = (natural gas + fuel gas) needed

Note 5: Total amount of air pollutants = total amount of (COD+SS+Oil) in water waste

Note 6: Amount of air pollutant = total amount of (SOx+NOx+TSP)

Note 7: The initial estimated value is 0.049. The third party verification is to be completed by the end of August

Note 8: The value is calculated by the initial estimated value in 2014

## 2.2 Fulfillment of Environmental Responsibility

### 2.2.1 Climate Change and Opportunities

#### CPC will Face Three Risk Scenarios in the Face of Climate Change Caused by Global Warming and the Greenhouse Effect

1. The corresponding GHG Reduction Act, energy tax, carbon tax, air pollution emission fees and related policies as well as the strict management control mechanism for management of greenhouse gas may have some impact on the operation of the energy and chemical industries.
2. The rising of sea levels, and the extreme weather caused by the greenhouse effect can impact on the site, facilities and operation of production, storage and transportation .
3. The trend of carbon reduction facilitates the growing demands for low-carbon energy, which increases the opportunity for new investments and the risk for load of storage and transportation facilities.



#### CPC's Strategies in Adapting to Climate Change

##### Establish Energy Saving Organization

- Set up energy saving service group in 2005. Providing energy saving service to all the divisions and departments.

##### Promote Energy Saving and Enhance Personnel Training

- Build up energy saving concept for all employees, enhance energy management for all factories and increase energy saving for refineries and energy productivity.
- Hold checkups for motorcycles and cars for fuel efficiency, and suitably turn off lights and promote tree planting and sending saplings.

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

- Participated in National program for the energy saving and carbon reduction action set by the Executive Yuan, CPC engage in preliminary trial plan on Carbon Capture and Storage(CCS) and investment for LNG receiving terminal to expand the capacity of natural gas transmission and storage, as well as promote the use of natural gas.
- Participated in National program for climate change adaptation action of Executive Yuan, CPC carried out comprehensive risk assessment for facilities of natural gas receiving terminals, oil refineries, and gasoline distribution centers to cope with the risk of climate change and the strategic plans for adaption.
- Set goals for energy saving and carbon reduction annually, control the energy, resource consumption, company-wide inventory of GHG emission in every unit to reduce the impact.
- Participated in Climate Change 2014 Questionnaire of CDP's Carbon Action initiative, and push for carbon footprint inventory and verification of ethylene in Linyuan Petrochemical Complex.

##### Refinery Structure and Increase Energy Efficiency Improvement

- To reduce cost and the environmental impact, and improve energy efficiency, Best Available Control Technology (BACT) are widely use in refinery structure improvement and replacement.
- Introduce advanced energy saving technology such as, heat recycling with heating pipes, heat exchanger network simulator, new air pre-heater for heating furnace and oil pre-flash system, Variable-Frequency and corresponding Variable-speed Devices for powerful motors, heating furnaces spray with high radiation coating, as well as increase recycling and reuse for fuel gas, mid-to-low pressure steam and water resources.
- Since the operation and development of energy and chemical industries are deeply affected by The legislation process and control mechanisms, CPC always conducts environmental impact assessment and apply Best Available Technology (BAT) to new investment projects, to reduce the impacts caused by emission of the pollutants and GHG which to create more economic benefits.



## CPC's Strategies in Adapting to Climate Change

### Complement and Integrate with Regional Energy and Resource

- Work with factories in the Industrial Area through complement and integrate for wasted heat, and energy resource recycling. CPC provide excessive fuel gas to others, and buy steam produced from furnace gas of China Steels Corp. to reduce whole regional energy usage.
- About 120 tons per hour of steam produced from CSC was used by Dalin Refinery during 2014 with annual carbon reduction of 285 thousand tons.

### Push Research on Green Energy Related Technology

- Green Technology Research Institute was founded in 2012 to carry out the research on renewable, green energy and related technology, as well as promote the investment of green energy and related industry.
- It focus on research of material and developing new industrial technology at photovoltaic, biomass energy, LED lighting, biomass material, green energy and related field through cooperate with university and research organization, and promote investment in green industry with high value-added.

### Irregularly Exchange Ideas with International Organizations

- World Business Council for Sustainable Development (WBCSD).
- First Taiwan Norway Economic Cooperation Meeting: CPC sent delegates to participate in the First Taiwan Norway Economic Cooperation Meeting in Oct., 2010, and shared our efforts on climate change and green corporation.
- Conference of the Parties: From 2003 to 2014, CPC attended International Conference of the Parties to learn more about the impact of climate change and the ways to reduce carbon emission and the planning for it.

### Increase Natural Gas Transportation and Storage Capability to Expand Low Carbon Energy Usage

- Investment on natural gas storage and transportation facilities expanding of receiving terminal at Taichung Harbor. The capacity of natural gas supply is expected to increase from 3 million tons/year to 5 million tons/year.
- To meet the demands for national carbon reduction action, the third LNG receiving terminal is under planning and design. 3 million tons/year of natural gas supply is proposed for the first phase.

### Push for Application of Biomass Fuel

- The implementation of B2 biodiesel is suspended after May, 2014. However, about 25 thousand tons of biodiesel (B100) was added to fossil diesel during 2014, it would reduce 65 thousand tons of CO<sub>2</sub> emission.
- E3 gasohol are supplied in the 14 gas stations in Taipei and Kaohsiung Cities to promote the usage of bio-fuel.



↓2.148  
million tons

From 2005 to 2014, CPC has saved the amount of 720 thousand kls of oil, which is equivalent to 2.148 million tons of CO<sub>2</sub> equivalent.

## 2.2.2 Saving Energy and Power

The cumulative energy savings from 2005 to 2014, 720 thousand kiloliters of oil equivalent was estimated, approximately 2.148 million tons of CO<sub>2</sub> equivalent. According to the company-wide GHG inventory, the carbon emission also reduced from the 11.5 million tons in 2005 to about 9 million tons in the last 3 years. It is very consistent between the effect of energy saving and carbon reduction of GHG inventory.

This year, in addition to the reinforcement of the energy efficient index control of energy-consuming equipment in major plants and the promotion of annual energy saving projects of every plans, energy efficiency indexes for newly constructed plants for RFCC, alkylation and new NO. 3 Naphtha Cracker are also established. Meetings on energy saving and follow-up are held regularly to effectively control energy saving effects and share the relevant experience in the implementation of energy-saving projects and achievements. In 2014, the energy saving reached 50 thousand kiloliters of oil equivalent, and approximately 150 thousand tons of carbon dioxide can be reduced.

## 02 Value-Added Sustainability

Furthermore, we also actively invest in energy-saving techniques of furnace insulation, furnace tube cleaning, furnace wall anti-radiation coating and process additives of desalting and anti-fouling agent in our Refining & Manufacturing Research Institute and Green Technology Research Institute and help promote the use of these techniques on the sites. New energy-saving technology of heat pipes, permanent magnet motors are developed and promoted on site.

Bureau of Energy, MOEA proclaimed "Requirements for Energy Users' Goal and Action Plan for Energy Conservation" in 2014, requiring energy users with the contract capacity more than 800KW to save more than 1% of electric from 2015. This is a 4-year plan, targeting to 4% of total electric saving. We have requested all units to cooperate actively and to report and submit energy-saving associated measures and plans.

Major Energy Saving Measures and Accumulated Achievement from 2005 to 2014			
Major Energy Saving Measures	Energy saved (kls of oil equivalent)	Money saved (NT\$ 10 thousand)	CO <sub>2</sub> Emission Reduction (tons)
Renewal of Manufacturing Equipment	229,518	321,601	695,861
Refurbishment and Improvement of Equipment	129,229	187,941	390,964
Recycle of the Heat and Fuel Gas in Manufacturing	141,375	237,879	428,857
Refine Manufacturing Process	64,271	200,685	193,348
Improvement of Energy Management and others	156,289	89,607	438,601
<b>Total</b>	<b>720,681</b>	<b>1,037,713</b>	<b>2,147,631</b>

Major Energy Efficiency Improvement Plan from 2005 to 2014	
Major Energy Efficiency Improvement Plan	Energy saved (kls of oil equivalent)
Recycle waste heat in furnace, cracking furnace, and boiler flue gas (APH)	81,232
Recover exhaust gas in crude distillation, cracking, refining workshops and boilers for fuel gas use	82,619
Refurbishment of heating and cracking furnace wall and the radiation zone; replacement of refractory cotton, furnace tube decoking and heat coating	76,391
Replacement of decompressors in RFCC workshops	52,445
Replacement of heat exchanger	36,994
Improvement of the integrated application of the mid-to-low pressure vapor in the plants	27,998
Renewal of high performance catalysts (isomerization, reforming and absorption)	26,842
Cleaning of the tubes in the convection zone of the furnace and boiler	24,455
The turbines for power, reforming and cracking plants are replaced by motors.	15,791

### Energy Consumption and Energy Intensity of the Four Factories for the Last 3 Years

Energy Consumption from 2012 to 2014				
		Unit: GJ=10 <sup>9</sup> joule		
	Year	2012	2013	2014
Direct Consumption	Natural Gas	3.05*10 <sup>7</sup>	2.33*10 <sup>7</sup>	1.54*10 <sup>7</sup>
	Fuel Gas	4.23*10 <sup>7</sup>	4.86*10 <sup>7</sup>	5.50*10 <sup>7</sup>
	Low BTU Fuel Gas	7.19*10 <sup>6</sup>	6.73*10 <sup>6</sup>	5.18*10 <sup>6</sup>
	LPG	0.66*10 <sup>3</sup>	0.63*10 <sup>3</sup>	0.92*10 <sup>6</sup>
	NC Bottom Oil	2.81*10 <sup>6</sup>	2.93*10 <sup>6</sup>	1.16*10 <sup>6</sup>
	Low Sulfur Fuel Oil 0.5%	1.77*10 <sup>7</sup>	1.50*10 <sup>7</sup>	0.89*10 <sup>7</sup>

Energy Consumption from 2012 to 2014							
Year		2012		2013		2014	
Direct Consumption	Carbon Residue	0.76*10 <sup>7</sup>		1.68*10 <sup>7</sup>		2.10*10 <sup>7</sup>	
	Total Heating Value	1.08*10 <sup>8</sup>		1.13*10 <sup>8</sup>		1.07*10 <sup>8</sup>	
Purchased energy consumed	Electricity Purchased	1.45*10 <sup>7</sup>		1.51*10 <sup>7</sup>		1.50*10 <sup>7</sup>	
	Steam Purchased	1.20*10 <sup>6</sup>		1.53*10 <sup>6</sup>		1.61*10 <sup>6</sup>	
	Total Heating Value Purchased	1.58*10 <sup>7</sup>		1.66*10 <sup>7</sup>		1.67*10 <sup>7</sup>	
Total Heating Value		1.24*10 <sup>8</sup>		1.30*10 <sup>8</sup>		1.24*10 <sup>8</sup>	
Refining	Petrochemical	0.94*10 <sup>8</sup>	0.29*10 <sup>8</sup>	1.03*10 <sup>8</sup>	0.27*10 <sup>8</sup>	0.87*10 <sup>8</sup>	0.37*10 <sup>8</sup>
Refining Production (KL)	Total Production	1.49*10 <sup>8</sup>	1.69*10 <sup>6</sup>	1.45*10 <sup>8</sup>	1.34*10 <sup>6</sup>	1.20*10 <sup>8</sup>	1.93*10 <sup>6</sup>
Energy Intensity (Gj/KL, Ton)		0.628	17.2	0.710	20.3	0.721	19.4

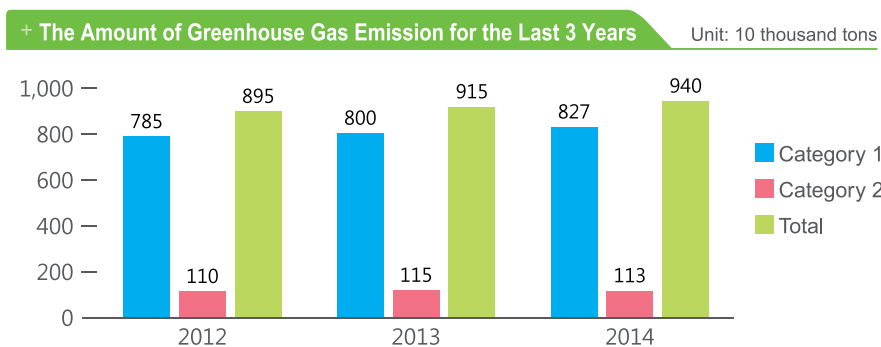
Note 1: Energy consumed = fuel used \* unit thermal energy of the fuel

Note 2: Unit thermal energy of the fuel: (1) natural gas 8,900 Kkcal/KS (2) fuel gas 9,000 Kkcal/KS (3) low heating value fuel gas 6,000 Kkcal/KS (4) LPG 6,635 Kkcal/KL (5) NC bottom oil 9,700 Kkcal/KL (6) low sulfur fuel oil (0.5%) 9,200 Kkcal/KL (7) carbon residual 9,580 Kkcal/TON (8) electricity purchased 2,180 Kkcal/MWH (9) steam purchased 724 Kkcal/TON

Note 3: Refining production refers to EDC; total petrochemical production refers to the total production of six basic petrochemical materials (including ethylene, propylene, butadiene, benzene, p-xylene, o-xylene)

## 2.2.3 Greenhouse Gas Reduction Management and Achievement

The greenhouse gases produced by CPC can be classified into three categories. Category 1 includes those directly emitted by CPC owned or controlled facility, for example, exhaustion pipes, manufacturing facilities, and vehicles of CPC. Category 2 includes those indirectly emitted by CPC such as purchased electricity, heat, and steam. Category 3 includes those indirectly emitted but not owned or controlled by CPC. Category 3 is the most difficult part to be quantified, and thus, not included in the emission amount.



Note: Sources of greenhouse gas emission coefficient: (1) electricity: emission coefficient declared by Bureau of Energy 2013; (2) fuel gas, flare gas: according to analysis and calculation from each unit; (3) fuel oil, diesel, LPG, gasoline, bio-diesel, natural gas: heat value declared by Bureau of Energy and IPCC 2006; (4) septic tank: waste water characteristic in Taiwan and IPCC 2006; (5) acetylene: mass balance; (6) oil sludge: chemically analyzed carbon content in oil sludge.

Greenhouse gas reduction is our most essential responsibility to adapt to climate change. CPC would follow on the usage of low carbon fuel, enhancing facility efficiency and waste reduction and act on measures for carbon reduction. There are two steps in the plan. First, we planned to reduce CO<sub>2</sub> emission by 1 million tons by the end of 2009 and we had already reached the target before that time. The second step is to reduce CO<sub>2</sub> by 2.3 million tons by the end of 2015. During 2014, we have already reduced CO<sub>2</sub> by 323 thousand tons with the accumulated amount of 2.534 million tons from 2005, reaching the set target earlier than scheduled.

CPC CO <sub>2</sub> emission Reduction Plan		
Accumulated Reduction Target	Reduction Time Table	Note
Reduce 1 million tons	End of 2009	Reached at the end of 2008
Reduce 2.3 million tons	2015	Reached 2.534 million tons at the end of 2014

Greenhouse Gas Reduction Achievement				
Year	2011	2012	2013	2014
Number of Items	21	30	21	17
Reduction Amount (ten thousand tons/year)	20.7	22.1	20.8	32.3
Amount invested (ten thousand dollars)	126,023	106,567	46,081	30,753

- This figure lists the equivalent CO<sub>2</sub> amount converted from greenhouse gas according to the Global-Warming Potential (GWPs) of the Second Assessment Report – IPCC (1995).
- GWPs: It is a relative measure of how much heat a greenhouse gas traps in the atmosphere. It compares the amount of heat trapped by a certain mass of the gas in question to the amount of heat trapped by a similar mass of carbon dioxide.

Future Carbon Reduction Actions	
<b>Increase Energy Efficiency</b>	<ul style="list-style-type: none"> <li>• Fully checked on refinery structure, speed up equipment replacement, and enhance heating efficiency on energy hungry devices like heating furnaces and boilers.</li> <li>• Enhance manufacturing process, integrate energy management on heating furnaces and boilers and work on recycling for waste gas (flue gas and crude hydrogen) and low and medium pressure steam.</li> </ul>
<b>Reduce Energy Usage</b>	<ul style="list-style-type: none"> <li>• Integrate and complement on regional energy and push for exhaust heat recycling.</li> </ul>
<b>Increase Low Carbon Energy</b>	<ul style="list-style-type: none"> <li>• Such as natural gas to replace the fuel oil for heaters and furnaces.</li> </ul>
<b>CO<sub>2</sub> Capture and Storage</b>	<ul style="list-style-type: none"> <li>• In 2012, by existing equipment and gas fields in Yongheshan, we finished preliminary experimental CO<sub>2</sub> geological storage. We are regularly monitoring on and analyzing soil CO<sub>2</sub> flux and groundwater quality to reduce any risk.</li> <li>• In 2013, we have a “CO<sub>2</sub> geological storage preliminary storage test and monitor plan” in order to establish CCS technology platform.</li> </ul>
<b>Tree Planting to Reduce CO<sub>2</sub> Emission</b>	<ul style="list-style-type: none"> <li>• Estimated to reduce CO<sub>2</sub> emission by over 2 thousand tons annually.</li> </ul>

### Voluntary Greenhouse Gas Reduction Plan

- To cooperate with MOEA's from 2011 to 2015 plan of pushing industry greenhouse gas voluntary reduction plan, the 3 refineries and petrochemical complex handed in the letter of intent.
- The 3 refineries have passed Bureau of Standards, Metrology and Inspection (BSMI), MOEA ISO14064-1 auditing.
- Both the improvement plan for Taoyuan heating furnaces and high radiation coating material for interior painting of heating furnaces in Dalin plant have passed ISO14064-2 auditing.

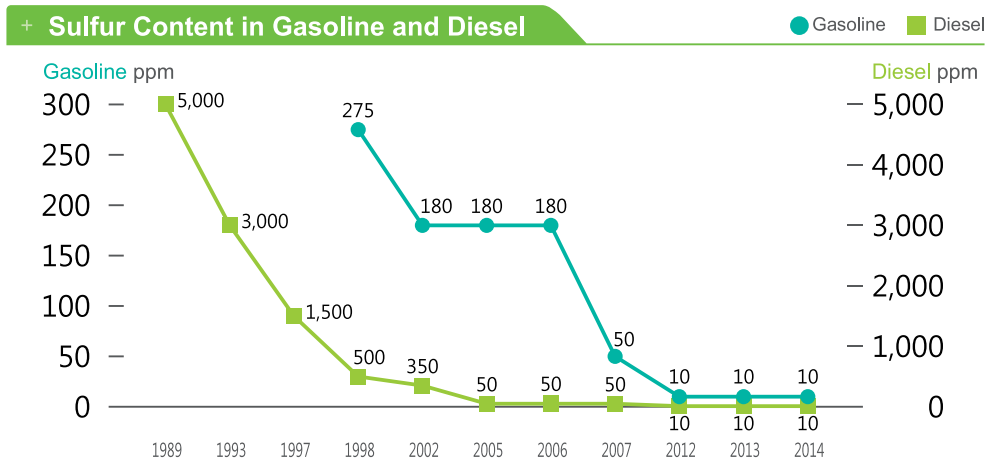
## 2.2.4 Prevention and Control of Air Pollution

We are actively constructing new Naphtha Cracker Unit 3, which utilizes related air pollution control facilities adopting the technical standards of Best Available Control Technology (BACT). When it is completed, the air quantity of pollutants emission would be greatly reduced and would be tremendously beneficial to the overall quality of the environment. Sulfur and benzene contents in CPC gasoline lead and diesel would be strictly abided by EU regulations (EN228 and EN590) and we also strive to reduce the industrial pollution impact on the employees and the residents of the surrounding areas. Flue gas emissions are much lower than the national standard quality.



Benzene, Lead and Sulfur Content in CPC Gasoline and Diesel			
Classification	Characteristic	CPC Actual Value 2014	EU Regulation
Gasoline	Benzene	1.0%(v/v), max	1.0%(v/v), max <sup>1</sup>
	Lead	<0.005g/l	<0.005 g/l <sup>1</sup>
	Sulfur	10ppm	10ppm, max <sup>1</sup>
Diesel	Sulfur	10ppm	10ppm, max <sup>2</sup>

Note 1: Follow EU Regulation (EN228) Note 2: Follow EU Regulation (EN590)



## Air Pollution Prevention and Control Measures and Achievement



SOx emission  
↓22.5%

NOx emission  
↓7.3%

VOCs emission  
↓5.7%

In Feb. 2013, CPC established “devices and equipment improvement group” in each factory to check and ensure that air pollution prevention and control measures can comply with the regulations such as total quantity control amount, applicable air pollution control fee and the quantity of air pollutants emitted from Environmental Protection Administration. The related air pollution prevention plans are described as follows:

Air Pollution Prevention and Control Measures		Reduction Achievement (compared to 2013)
<b>Reduce Oxy-sulfide</b>	<ul style="list-style-type: none"> <li>Constructing using natural gas or self-produced fuel gas for the heaters and furnaces.</li> <li>Set up desulfurization equipment, and eliminate SOx.</li> <li>Improve operation and management to reduce pollutants.</li> <li>Execute waste gas recovery plan in flare burner to reduce emission.</li> </ul>	reduced by 22.5%
<b>Reduce Ni-trogen Oxide</b>	<ul style="list-style-type: none"> <li>Constructing using natural gas or self-produced fuel gas for all the furnaces and heaters.</li> <li>Add denitrification equipment to get rid of NOx.</li> <li>Add low NOx burners to all furnaces and heaters.</li> <li>Increase burning efficiency by improving operation and management to reduce necessary pollutants.</li> <li>Execute waste gas recovery plan in flare burner to reduce emission.</li> </ul>	reduced by 7.3%

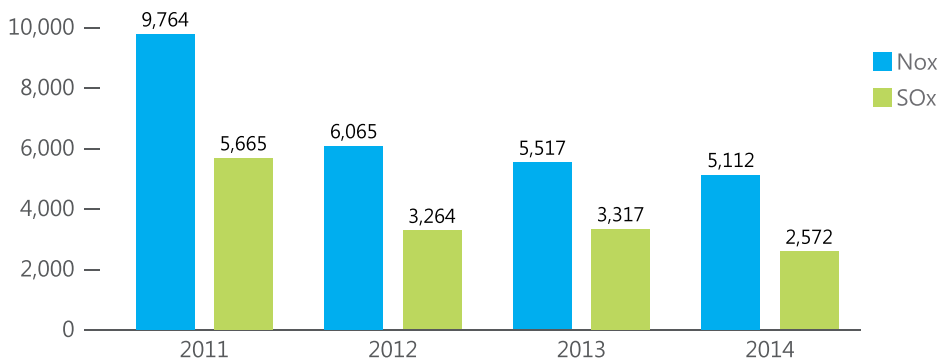
**Reduction Achievement (compared to 2013)**

**Air Pollution Prevention and Control Measures**

<b>Reduce Particles</b>	<ul style="list-style-type: none"> <li>• Add electrostatic dust collectors to the chimneys to increase chimney dust removal rate to 90~95%.</li> </ul>	-
<b>Reduce Volatile Organic Compounds</b>	<ul style="list-style-type: none"> <li>• File all the equipment and devices and input the data to computer database.</li> <li>• Regularly check the equipment according to Environmental Protection Administration's regulation. Check leakages with FLIR and analyzer, and fix or repair any leakages found.</li> <li>• Use low leakage devices and improve the equipment.</li> <li>• Wash the tankers cleanly and carefully recycle it.</li> </ul>	reduced by 5.7%

**+ Statistics of Air Pollutant Emission for the Last 4 Years**

Unit: tons



Note: The statistics are from the 4 plants

Quality of Flue Gas			
Emitted pollutant		Quality in 2014	National Standard
Oxysulfide SOx (ppm)	Gaseous Fuel	<50	100
	Liquid Fuel	<250	300
Nitrogen Oxide NOx (ppm)	Gaseous Fuel	<100	150
	Liquid Fuel	<200	250
Particles TSP (mg/Nm3)	According to the Emission Amount	5-100	<25-500

 **Emission Amount of Flared and Vented Volatile Organic Compounds**

For petrochemical industry, flared and vented Volatile Organic Compounds is the main sources of waste gas. CPC is actively implementing the following procedures:

- 1.Reduce waste gas and the emission of greenhouse gas: Strictly control flare burner, establish and execute flare burner improvement plan, set up flare gas to reduce waste gas and greenhouse gas emission. Starting from July 1, 2014, unless approved by authority, waste gas cannot be dealt by flare burner under normal operating condition. If the daily emission is over 30 thousand m<sup>3</sup>, public statement and incident description report will need to be submitted.
- 2.Reduce vented gas: Besides replacing or maintaining all the related equipment and devices, all the treatment units of waste water treatment plants would need to add emission regulation approved lids or caps. All CPI/API in the operation units would need to be sealed to prevent contacting with air to reduce the gas emission.

For now, CPC collects the data of flared gas only from the exhaustion towers in three refineries and Linyuan Petrochemical Complex which doesn't include vented hydrocarbon. Before being emitted, flared gas would be recycled by the flare gas recovery system. Therefore, there is no direct emission before burning. CPC's net emission of Hydrocarbon from flare burners in CPC's 4 plants in 2014 was 55,610.9 thousand m<sup>3</sup>, a 29.8% decrease compared with 2013.



↓ 29.8%

Net emission of Hydrocarbon from flare burners in CPC's 4 plants in 2014 was 55,610.9 m<sup>3</sup>, a 29.8% decrease compared with 2013.

Emitted Amount of Hydrocarbon from Flare burner					Unit: thousand m <sup>3</sup>
Year	2011	2012	2013	2014	
<b>Kaohsiung Refinery</b>	75,435.1	40,457.8	21,825.7	4,543.8	
<b>Dalin Refinery</b>	22,978.4	19,911.0	19,384.1	19,502.6	
<b>Taoyuan Refinery</b>	19,379.7	13,302.9	21,357.3	22,042.5	
<b>Linyuan Petrochemical Complex</b>	5,386.6	3,663.2	16,601.2	9,522.02	
<b>Total</b>	123,179.8	77,334.9	79,168.3	55,610.9	

Note: The old #3 Naphtha Cracker was decommissioned in 2012, and the trial production for the new #3 Naphtha Cracker was in 2013.

## 2.2.5 Management of Water Resource

In recent years, droughts happen frequently and globally, and water resources have drawn much attention. Water conservation as well as emergency-response measures for droughts has become increasingly important. To reach a better water efficiency, CPC is pushing for industrial water recycling and already implemented several water recycling improvement measures. Water for Dalin and Taoyuan refineries comes from Fengshan Reservoir and Shimen Reservoir of Taiwan Water Corporation, and the water usage plans are evaluated and thus supplying water to CPC would not impact the water resources.

Kaohsiung Refinery 2006 asked National Pingtung University of Science and Technology (NPUST) to evaluate the possibility of taking groundwater of Gaoping River for Daliao water supply station and work on water pumping simulation to assess its effect on the ground level. From their result, there is no land subsidence concern for the amount of water we are using. We semiannually check the ground level, analyze the ground level variation ourselves and also request Resources Engineering Services Incorporated to do independent inspection. According to their 2014 report, there is no evidence showing land subsidence in area around Daliao water supply station.

Amount of Water Used for the Four Plants in the Last 3 Years										Unit: thousand m <sup>3</sup>
Year	2012			2013			2014			
	Daliao Water Supply Station	Purchased water	Total	Daliao Water Supply Station	Purchased water	Total	Daliao Water Supply Station	Purchased water	Total	
Total amount of four plants	18,027	25,052	43,079	16,472	29,782	46,254	10,767	32,841	43,608	

## 2.2.6 Waste Water Pollution Prevention

Waste water pollution prevention for Kaohsiung Refinery, Dalin Refinery, Taoyuan Refinery and Linyuan Petrochemical Complex is briefly described below:

1. The waste water from Kaohsiung Refinery (special waste water, waste water containing oil, inorganic salt waste water, and daily waste water) is sent to waste water treatment units, and it is properly processed before being released to drainage pipes set up by Industrial Development Bureau at Oyster Village and then sent to the ocean as effluent. During thunderstorms, there are two surge tanks with the capacity of 50,000 kiloliters each to buffer the excessive rain. However, if the rain shower from Ban-Ping Mountain is too heavy for the tanks in the plant and the P12 surge tank with the capacity of 25,000 kiloliters to handle, we will collect water to the approved 5,450 kiloliters and then ask Environmental Protection Bureau, Kaohsiung City for special permission to release the water. After the permission is granted, the water which cannot be collected will be sent from the RD04 outfall to Houjin River.

2. Waste water from Dalin Refinery (special waste water, waste water containing oil, inorganic salt waste water, and daily waste water) is first sent to oil-water separator and delivered to second level waste water treatment unit. After that, it is released to ocean through the drainage pipes of Combined Wastewater Treatment Plant in Linhai Industrial Zone.
3. Waste water from Taoyuan Refinery (special waste water, waste water containing oil, inorganic salt waste water, and daily waste water) is sent to waste water treatment unit. After being processed, the water is released to Nankan River through drainage pipes. The assimilative capacity of the river can absorb the treated water and the water fits the national standard effluent quality, and actually the quality is better than the quality of the river water, so the impact would be very little.
4. After primary treatment of wastewater in Linyuan Site (special wastewater, oily wastewater, inorganic salt wastewater and domestic wastewater), some portion of it enters secondary biological treatment procedure and when meeting the influent standards, was sent to Linhai Wastewater Treatment Plant for ocean discharge after treated in the wastewater treatment plant in Linyuan Industrial Park while some enters the secondary biological treatment and advanced treatment procedures, and when meeting the influent standards, was recovered and reused in the site.

### Focal Points in Effluent Monitoring

The major pollutants in CPC's waste water are the organic compounds in petro. The main monitoring points are items of Chemical Oxygen Demand (COD), Oil, Suspended Solid (SS) and Phenol.

CPC's Monitored Items for Effluent, 2014				
	COD	Oil	SS	Phenol
Taoyuan Refinery	25.5	4.1	16.6	0.03
Dalin Refinery	53.2	< 1	8.2	0.011
Kaohsiung Refiner	33.8	0.48	19.6	0.002
Linyuan Petrochemical Complex	45.3	1.00	5.9	0.1
Effluent Standard <sup>1</sup>	100	10	30	1.0
Ocean Effluent Standard <sup>2</sup>	300	20	150	1.0

Note: 1. Effluent standard for Taoyuan Refinery.

2. Ocean effluent standard for Kaohsiung and Dalin Refineries and Linyuan Petrochemical Complex.

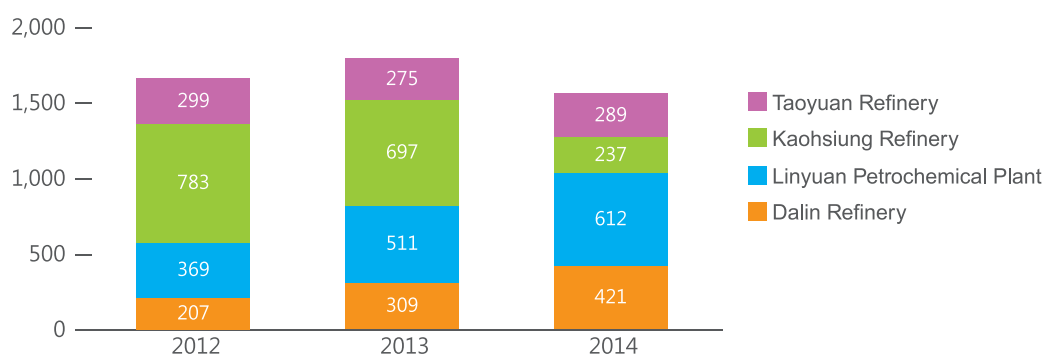


↓ 13%

CPC's waste water release amount from refineries and petrochemical plant in 2014 was 15.59 million tons, a 13% decrease compared with 2013.

### + Waste Water Released from Refineries and Petrochemical Plant in the Last 3 Years

Unit: 10 thousand tons



### Produced Water from Oil / Gas Mining and Production

Most of domestic oil or gas fields are natural gas wells. In oil mining and production, condensate (naphtha, C5-C20) and formation water would be the by-products. After coming out of three phase separator, there would be some residue condensate in the produced water. The produced water from different fields would have different quality, especially in terms of salinity (Chlo-



ride ion around 3,800-11,000ppm). Even it is not listed as part of releasing standard, it could cause soil salinization. CPC has two ways of processing the produced water. The first would be re-injecting it back to the field through reinjection well, which would help the production of extra oil or it can be sent to waste water treatment plant. After checking for the proper effluent standard, it would be released to the river. In 2014, the produced water amount is 40,373.7 kl.

The Amount of Produced Water from Oil / Gas Mining and Production in the Fields				
Name of Field	Jin-ching gas field (Ching-tsaio Lake area)	Jin-ching gas field (Jin-shuei Area)	Tieh-jen Mountain gas field	Total in Tsu-huangkun oil field
Amount of Produced Water	3,475 kl	8,290 kl	658 kl	27,950.7 kl
Method of Processing	squeeze restore	squeeze restore	squeeze restore	Treated before being released

**Description of Method of Processing: squeezed through disposal well into underground**

This method follows US EPA class II injection well regulation. Go through API oil-water separator to recycle oil and then it would be re-injected back to the field. The process is done only physically for the sedimentation of the recycled oil, and for the rest is only transported by pipes without adding any substances. The processed amount by means of this method is 12,423 kl, accounting for 31% of the overall produced water.

**Description of Method of Processing: treated before released**

Produced water with lower salinity (salinity lower than 5000ppm) goes through API oil-water separator to recycle oil and then treated with pressurized air and bio-processing before released. The processed amount by means of this method in 2014 is 27,950.7 kl, accounting for 69% of the overall produced water.

**Focal Points in Waste Water Prevention and Control in the Fields**

1. Renew or expand original waste water treatment systems, and increase the quality of the released water.
2. Continue reducing waste water source and the amount of waste water.
3. Set up torrential rain drain blocking system to separate rain water and waste water.
4. Treat waste water for recycling and re-use.

**Reduce Water Consumption and Waste Water Recycle and Re-use in Four Plants**

**Reduce the Loss of Cooling Water**

Renew water tray and honeycomb water deflector to increase water tower efficiency and decrease the cooling water lost in evaporation from 0.1% to 0.003% or less. This can effectively reduce the amount of water replenishment.

**Improve Water Usage for Furnace**

Use water purifier to generate pure water and increase the pure water production and also reduce the amount of waste water. Set up Electrolysis Reversal (EDR) equipment for raw water to reduce the water conductivity and hardness. Enhance water quality to get more water filtered from ion-exchange resin to reduce the water usage for furnaces.

**Improve Firefighting Water Usage**

Open end firewater pool can be easily degenerated. Using firewater to flush the water surface can control the fungus and increase the water quality.

**Reduce Water Usage in Manufacturing**

Set up monitor and control systems for cooling water and deflector. Always check cooling water quality and prevent usable cooling water from contamination. If there is contamination, we use electromagnetic valves to recycle the water to water tower to replenish water. Take a deaerating tank to recycle low pressure steam to get the heat and cooling water.

**Drainage Water Recycle and Re-use**

Waste water from manufacturing needs to be processed and sent to sewage treatment plant. Some of it can be recycled to wash sludge dehydrator or incineration plant. Public waste water needs to go through sedimentation and sand filter before being released. Some of it can be used to wash gutters or tanks.



↑ 14.5%

CPC's waste water recycling rate in 2014 was 65.4%, a 14.5% increase compared with 2013.

Achievement of Recycling Waste Water from Manufacturing			
	2012	2013	2014
Raw Water Replenished (in 10 thousand tons) (A)	3,712	4,362	3,284
Recycled Water Amount (in 10 thousand tons) (B)	1,796	4,523	6,208
Percentage Recycled (%) (B÷[A+B])	32.61	50.91	65.40

### Prevention and Treatment of Soil and Groundwater Contamination

Due to the aged equipment and the lack of environmental awareness in early years, tanks and pipelines in part of CPC's plants, divisions, depots, and gas stations may have situations of leakage and residuals that pollute the underground environment. Since the EPA proclaimed the enforcement of Soil and Groundwater contamination Remediation Act and related control and management standards in 2000, many sites have been listed as contamination control areas, contamination control sites and contamination remediation Site (as shown in the following table). Currently, the contamination contingency, control and remediated plans have been proposed one after another, and related investigation of soil and groundwater contamination and pollution improvement are also conducted in accordance with the law on those relevant sites.

Through choosing the proper engineering method, the best available operation procedure and regularly checking and evaluating, CPC has been doing its best to reduce the impact on the natural environment resources and the environmental footprint. We also work on pollution prevention to maximize the environment benefits while minimizing the hazards and impacts caused by the treatment on ecology, environment and the residents.

The contingency/control/remediated sites of CPC in 2014 and its related treatment improvement solution		
Item	Site	Improvement Solution
The contamination control sites	CPC Lingsuo site, Shinkong community, finished product warehouse for Northern district, east gate of Kaohsiung Refinery, Wu Cai Lin waste landfill site, 124 sites in Kaohsiung Refinery, Dalin Refinery (Area F), site of provincial highway #15 at 53.5 km, Beipu Depot in Hualien, Wugu gas station, Neihsu gas station, Zhongxiao E. Road gas station, Linsen N. Road gas station, Longgang gas station, and Luchu gas station.	Continuously proposing control, management and improvement plan and working on related investigation and improvement for soil and groundwater contamination.
The contamination contingency sites	Guangming station, Siwei station, Caotun station, Yuli station, and Xiangshan station	
The contamination remediated sites	Changrong Rd. gas station, south of Temau #2 in Linsuo site, Petrochemical plant, 9 sites in Kaohsiung Refinery, #44 and other sites in Kaohsiung Refinery	

### 2.2.7 Management of Wastes

In terms of waste, aside from general waste, CPC mostly has catalyst waste, sludge, and bed mud. Catalyst wastes are recycled for precious metal. Sludge and bed mud are first burned in the incinerator and then used as landfill. For solid waste, it would first be sorted and then the following measures would be taken as needed: recycled, sold with outsiders bidding, barreled and landfilling, burned in the incinerator, direct landfill, recycled for oil and gas or direct dumping.

Drilling mud is the most common waste material for oil and gas companies. The ingredients are oils and chemical processing agents. If not properly treated, it can cause major contamination to water and ecology. For 2014, CPC has 261.06 and 237.66

tons of drilling mud from two onshore workover wells on land (Well 138 in Tsu Huang Kun, and number 8 in Baishatun). Drilling mud is the waste produced from Taoyuan, Dalin, and Kaohsiung Refineries and Linyuan petrochemical complex. The waste of debris and drilling mud containing oil is coded as D-0903, and that without oil is coded as D-0499, and both will be either incinerated or landfilled by the qualified processing company.

Amount of Processed Waste Material for 4 Plants in 2014										
Method of treatment	Hazardous Waste				Non-hazardous Waste					
	Solidification treatment	Incinerated	Physical treatment	Others	Chemical treatment	Physical treatment	Land-filled	Incinerated	Recycled	Others
Amount treated (tons)	200.48	2,376.18	68.84	10.12	3,372.41	905	5,936.72	27,082.89	21,310.91	1,234.51
Percentage	0.32%	3.80%	0.11%	0.02%	5.40%	1.45%	9.50%	43.33%	34.10%	1.98%

### The Percentage of Recycled Waste Resources for the Last 3 Years

Achievement of Waste Resource Recycled in 4 Plants			
	2012	2013	2014
Amount of waste treated (ton) (A)	44,455.2	56,628.6	62,498.06
Amount of waste recycled (ton) (B)	6,895	20,767.6	21,310.91
Percentage of waste resource recovery (%) (B÷A)	15.51%	36.67%	34.10%

### Recycled Waste



100%

The recycled percentage of Nickel from nickel-on-alumina catalyst (LD 241) waste, catalyst waste and waste carbon reached 100%.

The total amount of waste in the 4 plants in 2014 was 62,058 tons, and 25,046 tons (40.36%) of it were recycled. The recycled percentage of Nickel from nickel-on-alumina catalyst (LD 241) waste, catalyst waste and waste carbon reached 100%.

Recycled Waste		
Category	Recycled Resources	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 active carbon	New active carbon	100%

## 2.2.8 Management of Hazardous Materials

### Toxic Chemical management

For the materials over the Environmental Protection Administration allowed amount of poisonous chemical material, CPC has the following Toxic Chemical Substances that need to be regulated: Benzene, 1,3-Butadiene, Dimethylformamide, methyl tert-butyl ether, 1,2-ethylene dichloride, tetrachloroethene, dichloro methane, potassium dichromate, aniline and potassium chromate. They are from Kaohsiung Refinery, Taoyuan Refinery, Petrochemical Business Division and Keelung warehouse for Exploration & Production Business Division. All of them are strictly regulated and reported according to EPA regulation. We

have 32 materials under the allowed amount in Class 1, 2 and 3, such as carbon disulfide. For Category Four, we have 12, such as methyl tert-butyl ether.

Whenever operating poisonous chemicals in Class 1 to 3, toxic chemical substance we will submit the risk prevention and Response Plans to the competent authorities for reference when the total amount of operation reaches the large-scale handling standard. This plan includes a contingency task group, a command and reporting mechanism, and the preparation of disaster prevention and response equipment. Each emergency response plan should be tested twice unannounced tests a year, and there should be at least an overall exercise every year to cooperate with local environmental protection units in the emergency drill for substantial prevention of toxic disasters.

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



In addition, in accordance with Article 16, Paragraph 4 of the "Toxic Chemical Substances Control Act" and Article 7 of "Implementation Rules for the Toxic Chemical Substances Control Act", all the relevant units in CPC participate in the National Toxic Chemical Substance Joint Prevention Organization.

#### List of CPC Units Participation in National Toxic Chemical Substance Joint Prevention Organization

Kaohsiung Refinery		Team 7 of Kaohsiung City Toxic Disaster Joint Prevention Team
Dalin Refinery		Team 2 of Kaohsiung City Toxic Disaster Joint Prevention Team
Taoyuan Refinery		Team 3 of Taoyuan County Toxic Disaster Joint Prevention Team
Petrochemical Business Division	Linyuan Petrochemical Complex	Team 2 of Kaohsiung City Toxic Disaster Joint Prevention Team
	Cianjhen Storage Depot	Team 4 of Kaohsiung City Toxic Disaster Joint Prevention Team
Marketing Business Division	Keelung Laboratory	Team 1 of Keelung City Toxic Disaster Joint Prevention Team
	Kaohsiung Laboratory	Team 2 of Kaohsiung City Toxic Disaster Joint Prevention Team
Refining & Manufacturing Research Institute		Chiayi City Toxic Disaster Joint Prevention Team
Exploration & Production Business Division	Keelung Warehouse	Team 3 of Area 5, New Taipei City
	Natural Gas Processing Plant	National Toxic Chemical Substance Joint Prevention Organization Central Area, Team K00001

### 2.2.9 Emphasizing Biodiversity

The vanishing biodiversity has quickly become the most important topic in global conservancy. Under the idea of co-existing with the green, CPC emphasized on biodiversity and is doing tree planting and green manufacturing as well as environmental and bio monitoring. We would like to take care of humanity, natural environment and sustainable corporation development. CPC attaches importance to the biodiversity conservation around the factories and the undersea pipelines. We also have a water quality monitoring system and conduct tree planting to reach the goal of ecological coexistence.







# 9.7 Da An Forest Parks

From 2008 to the end of 2014, the accumulated planting area was over 140 hectares. A Da An Forest Park can absorb 370 tons of carbon dioxide emission annually. So the amount of CO<sub>2</sub> that can be absorbed with the planted trees is about 9.7 Da An Forest Parks.

## Tree Planting for Ecology Conservation

On April 22 (Earth Day), 2014, CPC donated 20,000 saplings. This time, franchised gas stations were also invited to join this activity, and a total of 150 gas stations nationwide initiated the “donating invoices or recycling waste batteries in exchange of saplings” activity. Since 2008, CPC has been actively working on sapling donation and tree planting to show our determination on energy saving, carbon reducing and Earth loving. From 2008 to the end of 2014, the accumulated planting area was over 140 hectares. A Da An Forest Park can absorb 370 tons of carbon dioxide emission annually. So the amount of CO<sub>2</sub> that can be absorbed with the planted trees is about 9.7 Da An Forest Parks.

### 2.2.10 Carrying out Environmental Evaluation

To achieve a balance between industrial development and impact to the environment, CPC is devoted to environmental evaluation and the corresponding improvement. We regularly invite professional institutions and academic groups to do environmental quality survey and investigation to evaluate the environment pollution caused by our business activities. We would minimize the impact and provide a clean surrounding to the local community.

Environmental Evaluation			
Environmental Evaluation	Impact	Preventive Measure(s)	Mitigation Measure
Soil and Terrain	land subsidence and oil contamination caused by groundwater pumping	<ul style="list-style-type: none"> <li>• Factory gutter improvement</li> <li>• Build new oil pipes and move underground pipes up</li> <li>• Build sealed sludge storage tanks</li> <li>• Set up groundwater monitoring systems</li> <li>• Monitor and evaluate land substance in Daliao Water Source Station Kaohsiung</li> </ul>	<ul style="list-style-type: none"> <li>• Groundwater pollution improvement</li> </ul>
Hydrology and Water Quality	Produced water contamination	<ul style="list-style-type: none"> <li>• Modernization and rebuilding of sewage treatment center</li> <li>• Move underground pipes up</li> <li>• Complete oil recycling system</li> <li>• Underground water monitoring system</li> <li>• Sewage pipes treated 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 of waste water</li> <li>• Torrential rain pollution</li> <li>• Rain and sewage water separation system</li> <li>• Adopt the care of Houjin Creek</li> </ul>
Air Quality	Fixed amount of total suspended particles (TSP), oxysulfide (SO <sub>x</sub> ), nitrogen oxide (NO <sub>x</sub> ), and volatile organic compounds (VOCs)	<ul style="list-style-type: none"> <li>• Furnace fitted with Low NO<sub>x</sub> 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 equipment to filling and packaging machines</li> <li>• Check and monitor equipment / device</li> <li>• Use sealed, sealed sampling for API / CPI, use double axis sealing for pumps</li> </ul>	<ul style="list-style-type: none"> <li>• Add electrostatic dust collector</li> <li>• Improve denitrification and desulfurization equipment</li> <li>• Equip washing tower</li> <li>• Improve maintenance on equipment</li> </ul>

Environmental Evaluation			
Environmental Evaluation	Impact	Preventive Measure(s)	Mitigation Measure
Noise and Vibration	rotating machines, steam pipes, vibration and noise from 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 security landfill</li> <li>• Waste sorting and separation</li> </ul>	<ul style="list-style-type: none"> <li>• Ask EPA certified company to do recycling of catalyst waste</li> </ul>
Transportation	Tankers and transportation trucks, construction trucks and buses affecting traffic in communities	<ul style="list-style-type: none"> <li>• Hold or sponsor traffic safety education and seminar</li> </ul>	<ul style="list-style-type: none"> <li>• Security guards help direct traffic</li> </ul>
Industrial Safety	Oil or gas leakage, fire and explosion that would impact the safety in communities and cause demonstrations and defiance from the residents	<ul style="list-style-type: none"> <li>• Set up refinery equipment according to domestic and international standard and regulation</li> <li>• Hazard and operability study (HAZOP)</li> <li>• Hold seminars on industrial safety and inspect equipment</li> <li>• Operation training and regular checks to prevent accidental work stoppage</li> <li>• Regular drills for emergency and set up emergency procedure</li> </ul>	—



NTD **71.94**  
million dollars

“Four Saving Measures for the Offices” in 2014 saved NTD 71.94 million dollars compared with 2011 (the base year).

## 2.3 Green Effects

### 2.3.1 Green Office

CPC is actively promoting “energy and resource conservation” and “complete waste sorting and no trash”. The following measures have been implemented. Use LED for long time lighting like stair way lights and escape directing lights, turn off lights during lunch break, stop using lights for the outer loop, check for and remove unnecessary energy consuming equipment, and activate temperature control for air conditioners. We are trying our best to comply with the eco-environment and increase the added value of our enterprise.

## Four Saving Measures for the Offices



Achievement for Office Energy Conservation				
Year	Power for existing buildings (million kwh)	Water for daily usage (million m <sup>3</sup> )	Gasoline for cars (kl)	Copy paper (pack)
2011 (Base Year)	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
2012~2014 Saving percentage	13.04%	18.02%	15.09%	24.06%

## Green Purchasing Policy in Offices



90.6%

The green purchasing achieved for CPC in 2014 was 90.6%, exceeding the original target

CPC's goal for green purchasing in 2014 is 90%, and all units have to follow the green purchasing policy to finish online reporting of office supplies, office equipment and appliances. The percentage achieved in 2014 was 90.6%, exceeding the target set earlier.

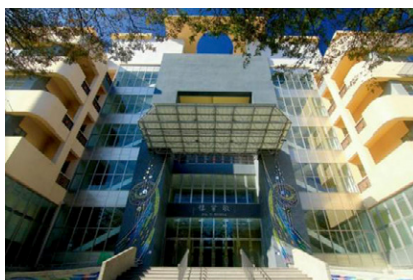


8 Green building Labels

As of 2015, 8 gas stations applied and obtained the Green Building Label

## Green Building

Before starting to be used in April, 2014, the New Instructional Building was judged with copper medal of "Green Building Mark" in 2014. In addition, we have 8 gas stations get Green Building Certificate in June, 2015.



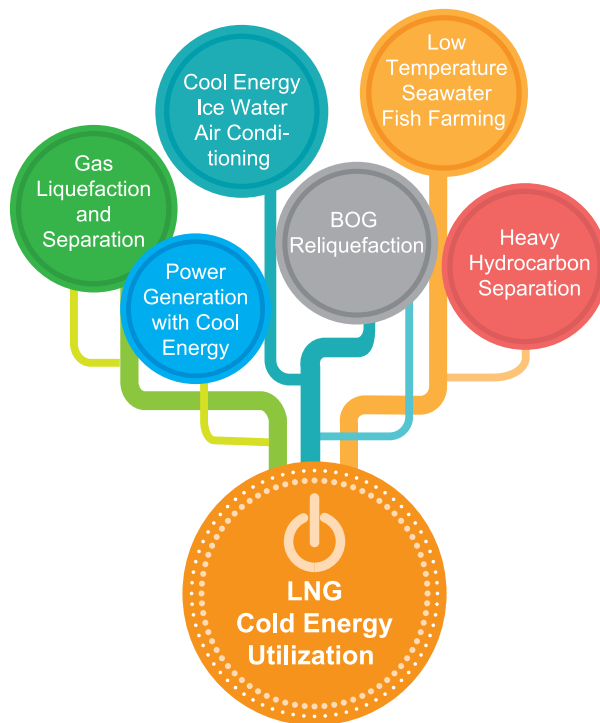


**79** thousand tons of carbon dioxide equivalent

CPC's cold energy supply from Yung-an and Taichung Plants enables the Far East Industrial Gases Co., Ltd, Blue Sea Industrial Gases Co., Ltd, Taichung Plant and Yung-an plant to reduce their purchase of power, and as of the end of 2014, the GHG reduction was 78,871 tons carbon dioxide equivalent.

### 2.3.2 Cold Energy Utilization

When warming the super low temperature LNG (-162°C) to room temperature, for every kilogram of LNG, around 200 Kcal of energy needs to be removed. It would be a terrible waste not to utilize the energy. For now, it can be applied to Gas Liquefaction and Separation, cold energy power generation, heavy hydrocarbon liquefaction and separation, cold energy air conditioning, low temperature fish farming and boil-off gas (BOG) reliquefaction. CPC's Yung-an Plant supplies cold energy that enables the Far East Industrial Gases Co., Ltd and Yung-an Plant to reduce purchased energy. The amount of GHG reduction has reached 38,755 tons of CO<sub>2</sub> equivalent by the end of 2014. The cold energy supply from Taichung Plant enables Blue Sea Industrial Gases Co., Ltd and Taichung Plant to reduce the purchase of power. As of the end of 2014, the GHG reduction has reached 40,116 tons carbon dioxide equivalent, with a total reduction of 78,871 tons carbon dioxide equivalent.



### 2.3.3 Product Carbon Footprint and Water Footprint



#### Product Carbon Footprint

CPC has pushed checking for product carbon footprint in view of the fact that international enterprises have asked the global supply chain to promote carbon footprint inventory. Product carbon footprint has been pushed in 2014 to cope up with the international trend. Linyuan Petrochemical Complex demonstrated the completion of the report for ethylene for carbon footprint inventory on Oct. 31, 2014, and was certified by SGS.

Carbon Footprint for Ethylene	
Stage	Amount of emission (kg CO <sub>2</sub> e/ton of ethylene)
Raw material stage	781.66
Manufacturing stage	728.66
<b>Total</b>	<b>1,510.32</b>

Note: The checking period for ethylene carbon footprint inventory in Petrochemical Business Division of Linyuan Petrochemical Complex is from July 1 to Dec. 31, 2012.

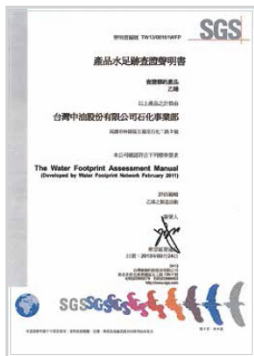


## Product Water Footprint

To adapt to the international trend, CPC has pushed checking for product water footprint. We check the water footprint for ethylene and 0.5 liter clean cleaning naphtha done by Petrochemical Business Division of Linyuan Petrochemical Complex and Solvent & Chemical Business Division, respectively. Linyuan Complex completed the report for ethylene, which is certified by SGS on Sep. 13, 2013 and Solvent & Chemical Business Division finished the report for 0.5 liter clean cleaning naphtha in 2013.

Water footprint for ethylene in Linyuan Petrochemical Plant of Petrochemical Business Division						Water footprint for 0.5 liter clean cleaning naphtha in Solvent & Chemical Business Division				
Unit: M <sup>3</sup> / kg						Unit: M <sup>3</sup> / Can				
Stage	Green water	Blue water	Gray water	Total	Percentage	Green water	Blue water	Gray water	Total	Percentage
Raw material stage	0.00	0.613	0.983	1.596	99.54%	0.00000	0.60000	8.08000	8.68000	99.99%
Manufacturing stage	0.00	0.007	0.000	0.007	0.46%	0.00000	0.00085	0.00000	0.00085	0.01%
Total water footprint	0.00	0.620	0.983	1.603	100%	0.00000	0.60085	8.08000	8.68085	100.00%

Note: The inventory period for ethylene water footprint in Linyuan Petrochemical Plant of Petrochemical Business Division is from July 1 to Dec. 31, 2012. The 0.5 liter clean cleaning naphtha water footprint was checked by Solvent & Chemical Business Division from July 1, 2012 to June 30, 2013.



**Green water footprint:** the volume of rainwater stored in the soil as soil moisture (including water evaporated from the global green water resources).

**Blue water footprint:** the volume of surface water and ground water for the products and services.

**Gray water footprint:** the volume of water that is required to dilute pollutants associated with the production of all products and services to such an extent that the quality of the water remains at or above agreed water quality standards.

Our products in manufacturing stage or products from our first level suppliers do not consume any green water, so we only calculated the blue and gray one.

## 2.3.4 Environmental Footprint in 2014

### Material Consumed

Water : 45,038	thousand kl
Crude oil : 22,380	thousand kl
Fuel oil : 425	thousand kl
Fuel gas : 1,498,497	thousand kl
Natural gas : 978,644	thousand kl
Gasoline additives (MTBE) : 552	thousand kl
Electricity purchased : 1,946,481	thousand kwh

### Amount of Refinery / Petrochemical Production

Diesel : 6,284	thousand kl
Fuel oil : 4,272	thousand kl
Gasoline for cars : 10,046	thousand kl
Aviation fuel : 1,915	thousand kl
LNG : 387	thousand tons
Ethylene (C <sub>2</sub> H <sub>4</sub> ) : 1,157	thousand kl
Propylene (C <sub>3</sub> H <sub>6</sub> ) : 988	thousand tons
Butadiene (C <sub>4</sub> H <sub>6</sub> ) : 168	thousand kl

### Material Produced

Gas emission	
CO <sub>2</sub> : 9,398,876	tons
NO <sub>x</sub> : 5,112	tons
SO <sub>x</sub> : 2,572	tons
TSP : 2.87	tons
VOC : 4,777	tons
COD : 614	tons
waste water : 16,436	thousand m <sup>3</sup>
wastes : 76,864	tons

## 2.4 Green Products

The manufacturing process, quality and transportation of CPC products all follow domestic and international environmental regulations and we can provide Safety Data Sheet (SDS) for our products to ensure the safety. Customers can check our company website for product quality testing reports. The Natural Gas Business Division provides not only “Safety Data Sheet” with detailed description of “Component Identification Information” and “Hazard Identification Information” but also the “Quoted Prices for Natural Gas” and “Product Specification” and other services under the “Product Information” in “Natural Gas Services Area” on CPC’s official website for the public to refer to. In 2014, CPC products did not have any health, product safety, product information and labeling regulations violation or even any voluntary violations.

### Recycle Crude Oil for Refinery

After years of effort, CPC dramatically increased percentage of refining recycled crude oil to 0.121% in 2014, with 27,075 kl of refined used oil in total.

Item		Unit	2011	2012	2013	2014
Feed	Crude oil (including recycled oil)	kl	24,549,203	26,741,892	22,648,022	22,380,439
Re-refining	Waste oil or non-qualified oil	kl	762	81,382	14,770	27,075
Percentage of re-refining		%	0.003%	0.304%	0.065%	0.121%

Note 1: In 2012, the reason for the higher percentage of recycled and non-qualified oil was caused by higher reserved oil in SLOP and combined with cheaper exhaust oil.

### Turn Waste Cooking Oil into Fuel

In early September 2014, it was reported that waste cooking oil was added into cooking oil, causing serious food safety concerns. MOEA and CPC’s Board of Directors hope that CPC can propose useful solutions and projects to help the food and beverage industry effectively handle the waste cooking oil issue. CPC actively proposed the disposal project to add methyl ester (waste cooking oil after transesterification reaction) into low-sulfur fuel oil for industrial use. The feasibility of this proposal has been tested and studied in CPC’s Refining & Manufacturing Research Institute, and considering the operating costs, CPC purchased 2 batches of waste oil methyl ester with a total volume of 20,000 kl in December 2014 and March 2015. The contracting of the third batch of 10,000 kl of waste oil methyl ester procurement project is being processed.



### Liquefied Petroleum Gas (LPG) for Cars

The efficiency for LPG for cars is around 85% of that of gasoline with NT\$ 10 lower in price per liter. The Carbon Oxide (CO), Hydrocarbon (HC) as well as CO<sub>2</sub> emission for LPG reduced by 71%, 89.3% and 14%~17% respectively compared to those for gasoline. As for Volatile Organic Compounds (VOC), Polycyclic Aromatic Hydrocarbons (PAH) and Ozone formation potential, LPG also has 49%~67% reduction. In Taiwan, CPC has 60 LPG stations, mostly in northern, central, and southern urban areas.

## High Value-added Petrochemical Products

CPC has been working on manufacturing process improvement for upstream petrochemical products for a long time. For the midstream and downstream, however, less effort has been involved. To speed up the development of high value-added petrochemical products, CPC set up two research institutes in March, 2012. One is Material Testing & Certification Center and the other is Green Technology Research Institute. Also, CPC have petrochemical product research group in Refining & Manufacturing Research Institute to enhance the research capability in petrochemical, green energy and new materials. In 2013, we were planning the design platform of multiple function carbon material pilot plant production and were involved in research of transforming PFO heavy cracking oil into high value-added coke and impregnation pitch. We plan to finish the installment of equipment in the carbon material pilot plant in 2015 to experiment the best operation conditions and optimal manufacturing process to shorten the commercialization process. We will then build several more platforms, develop other or our company's experimental results for production, such as DCPD purification, biomass fuel, hydrogenation and polymerization reactions and trial production of adamantane derivatives to lead us and the industry into a high value-added one.

## 2.5 Green Energy

According to the Statistical of Review of World Energy 2015 released by BP, the oil reserve for the whole world would only last for 53 more years, and for natural gas, there is only 54 more years. In the near future, the dry up of the fossil energy would be a serious problem we all have to face. Besides calling for energy saving, CPC is devoted to green energy exploration. The renewable energy we are working on includes solar, bio-mass, and hydrogen energy.



### 2.5.1 Establishment of GTRI

In March 2012, Green Technology Research Institute (GTRI) was established to provide an integrated platform for green energy research for the industry, government, universities and research organizations. We would like to provide a solid foundation for green energy research, establish core technology, and work on the commercialization of green product and technology and to lead CPC into a high value, low carbon, environmental friendly and energy saving green industry, transforming us from oil refinery into bio-refinery. The core technology and research areas include renewable energy, biotechnology, material technology and environmental protection technology to increase revenues and investment returns. In response to CPC's privatization plan, we will set up "renewable energy and biomass chemical company" to initiate the production of bio-gasoline, bio-diesel, bio-aviation fuel and bio-fuels and related chemicals at early stages.

In terms of the manpower planning and expected benefits of the GTRI, the first stage of the 5-year plan is to recruit new researchers year by year. It is expected to have 320 R&D researchers in 5 years, and the total manpower will be supported by the Refining Business Division. It is expected that after the first 5-year plan, we will launch 4~6 patents or products and technologies that can be commercialized every year.

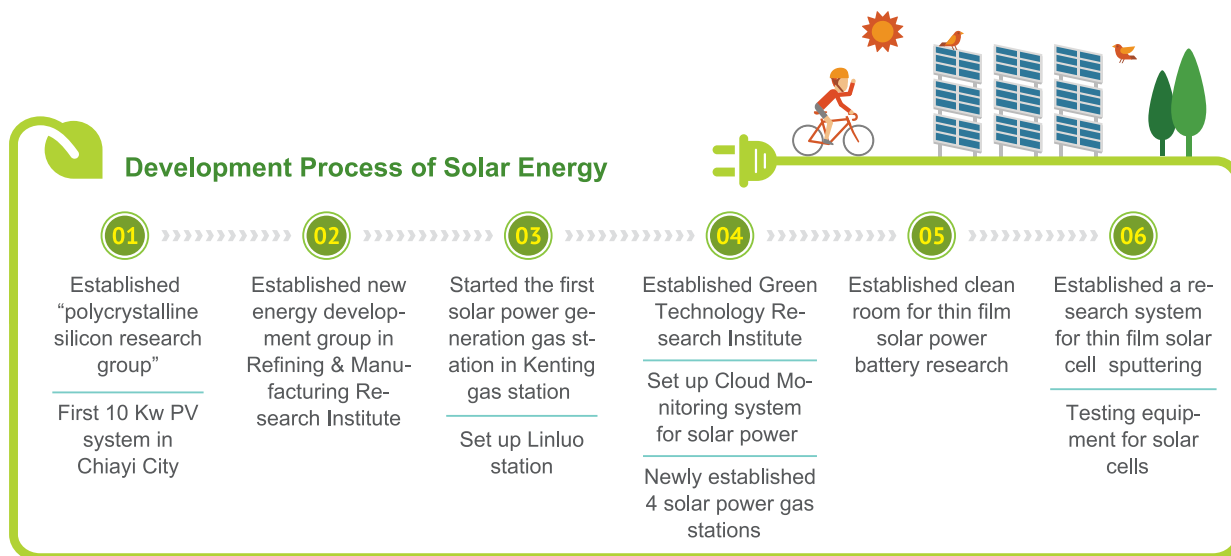

#### Major R&D Items for Green Energy

- ❖ Research on manufacturing technology for biomass fuels – biomass diesel, green diesel, biomass aviation fuel
- ❖ Develop on hydrogen production technology for renewable energy
- ❖ Develop photovoltaics technology
- ❖ Research on bioenergy technology
- ❖ Research on biomass fuel technology
- ❖ Research on special biotechnology
- ❖ Research on material technology – LED packaging and heat dissipating materials, coating materials and high value biopolymers and its composite materials
- ❖ Research on environmental catalysts
- ❖ Research on eco-friendly manufacturing



## 2.5.2 Solar Power

Solar power has the characteristic of being renewable and sustainable, and it has become a must-have industry for all the nations. GTRI would keep building a complete platform for PV systems. We would work on different types of photovoltaic systems and study their characteristics, and assist with the setup of the PV systems at 6 CPC gas stations as well as the promotion to put the PV systems onto the Cloud Monitoring system, and the latest status of power generation will be updated on the CPC's official website. In addition, we will more actively promote the self-installment of solar power system with the Marketing Business Division, Refining Business Division and the Kaohsiung Refinery. A gas station with 26 kw solar power generation station on Jyunsiao Road in Kaohsiung City is scheduled to be established in 2015, which will be considerably helpful for CPC to promote gas stations with solar power generation stations.

**400**  
thousand kwh

The cumulative amount of electricity generation in the 6 CPC gas stations installed with the PV systems reached more than 400 thousand kwh, and the amount was fully sold to Taiwan Power Company.

### CPC's Green Gas Stations

The PV system in CPC's Linluo station was selected and granted the "2014 Excellent PV system Award" by Bureau of Energy, MOEA, and the award was given by Vice President Wu Den-yih at the opening ceremony of "Taipei International Optoelectronics Week". Over the past three years after the parallel circuits with Taiwan Power Company with the solar Cloud Monitoring System, the installed capacity per unit per day is 3.42 kwh, 10% higher than the local average. Currently CPC has six gas stations with PV systems with the cumulative generating capacity of more than 400,000 kwh, and the overall output is sold to Taiwan Power Company. In 2014, we even rented 24 gas stations for the installment of PV system to actively promote the PV system in gas stations.

### The first "Excellent PV system Award"



The PV system at Linluo Station



Vice President Wu, Den-yih awarded CPC at the opening ceremony of "Photonics Festival in Taiwan".

The following table shows the cumulative generating capacity of the 6 PV system stations so far. All the generated electricity is sold to Taiwan Power Company, which helps promote the development of renewable energy and slow down the greenhouse effect.

	Kenting Station	Linluo Station	Shetou Station	Erhshui Station	Makuang Station	Nanhuan Road Station
<b>Started date</b>	2011/5	2011/10	2012/7	2012/11	2012/12	2012/12
<b>Location</b>	Pingtung	Pingtung	Chunghua	Chunghua	Yulin	Yulin
<b>Set-up cost</b>	NT\$ 5.40 million	NT\$ 2.60 million	NT\$ 3.24 million	NT\$ 2.95 million	NT\$ 3.89 million	NT\$ 3.29 million
<b>Accumulated electricity generated (kwh)</b>	102,934	43,943	78,699	50,129	102,886	50,083
<b>Accumulated CO<sub>2</sub> reduction (Unit: KG)</b>	54,761	23,377	41,868	26,669	54,736	26,645

Note 1: The statistics of accumulated electricity generated were calculated until March 24, 2015. The current accumulated generation capacity is more than 420,000 kwh. As the domestic energy supplier, CPC makes efforts to establish a low-carbon home to contribute to the sustainable development of the earth.

### 2.5.3 Bio-energy

CPC will have more diverse development of bio-energy, with gradual increase in ratio of addition. To cope with the international trend, GTRI has actively invested in the biofuel process development and been devoted to the R&D of innovative technology and patent distribution, aiming at developing the domestic bio-refinery pattern and expanding biomass energy in green bio-energy industry.

#### Biodiesel/Green Diesel

Since 2010, the addition of biodiesel in Taiwan has been increased to 2% (B2) to reduce 85,000 kl of gasoline consumption, with a reduction of 222,000 tons of carbon emission. Although the domestic addition of biodiesel has been postponed, when a solution or consensus is reached, or when the low-price of green diesel supply is stabled, CPC will continue to supply green biofuel to the public so that the general public can also be able to contribute to “saving the Earth by conserving energy and reducing carbon emission”.

#### Bioethanol

Bioethanol is made by using sugar (like sugar cane and sweet sorghum), starch (like sweet potato and corn) and cellulose energy crops through fermentation. Bioethanol is good to the environment and each kiloliter can reduce 2.1 tons of CO<sub>2</sub> emission and it can also reduce emission of CO<sub>2</sub>, hydrocarbon, formaldehyde, propionaldehyde and acetone. CPC gas stations have started providing unleaded gasoline and E3 (3% bioethanol) in 2011. The annual amount of ethanol purchased was 250 kl both in 2012, 2013 and 2014.

#### Biomass Aviation Fuel

Biomass aviation fuel is the biofuel dedicated to aircraft use with higher oil performance requirements that have to meet the petrochemical aviation fuel specifications and requires a series of engine and flight tests. However, with the implementation of European Emissions Trading Scheme (ETS) and the commitment of International Air Transport Association (IATA), we plan to achieve zero growth in carbon emissions by 2020 and to reduce 50% carbon emission by 2050 compared with 2005 (to reach the carbon reduction goal, the only way is to use biomass aviation fuel). This matures the biomass aviation fuel technology,



and many international shipping companies have also invested in the aviation fuel test flight, showing that the demands for biomass aviation fuel will be triggered and the commercialization of it is coming soon.

### **Microalgae-based Biofuel and Carbon Reduction**

With the integration of biological, chemical and mechanical technology, the environmental resistance of microalgae, its lipid oil content and carbon dioxide fixation efficiency are enhanced. This year we will build a pilot plant equipped with a 15-ton outdoor track pond for a more complete assessment of the yield of algae and research work of centrifugation harvest, spray drying and extraction. The establishment of a ton-scale heterotrophic microalgae fermentation workshop enables the evaluation of multiple sources, such as glucose, lignocellulosic hydrolysates, and crude glycerin. A platform for future technology introduction assessment can also be established to seek a cheaper method for mass production of algae oil.

#### Microalgae farming equipment



### 2.5.4 Hydrogen Energy

Hydrogen and fuel cell has been regarded as the highest potential clean energy. 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, it would continue to generate endless power, and the final product is clean water. Proton exchange membrane fuel cell and solid oxide fuel cell can reduce family carbon emission by 39%.

CPC has been focusing the application technology of hydrogen energy production, storage, and transportation. Our long term goals are to set up hydrogen supply environment, hydrogen energy application demo system and hydrogen station demo system, and to promote the fuel cell cogeneration system. In the future, we will keep watching fuel cell applications and evaluating the feasibility of fuel cell for factory power generation.







03

# Heartfelt Gratitude

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3.3.4 Workplace Safety Performance			
3.3.5 Healthy Work Environment			



## A Caring Heart to Drive Social Sustainability and Social Inclusion

**32** Loving Gas Stations

Currently, there are 32 CPC's Loving Gas Stations nationwide.

**46** Charity Car Washing Gas Stations

As of the end of 2014, CPC has 46 Charity Car Washing Gas Stations nationwide and hires 514 physically or mentally challenged persons.

**172** self-service stations

Since 2004, we have been promoting self-service stations. Currently, there are 172 self-service stations, accounting for 28% of all CPC-owned gas stations.

**594** accessible restrooms

By the end of 2014, there have been 594 accessible restrooms at CPC-owned gas stations.

Scored **91.2**

The statistical survey shows excellent performance in customer satisfaction of CPC-owned gas stations for the past 5 years (scored 91.2).

**30** suppliers

CPC has CSR assessment on our suppliers with information disclosure questionnaire, and it was implemented on a total of 30 suppliers.

**31** units

By the end of 2014, a total of 31 units of CPC have completed the establishment and verification of Taiwan Occupational Safety and Health Management System (TOSHMS).

**25,560** person-times

In 2014, a total of 25,560 person-times received work safety and health education and training.

NT\$ **98.22** million

In 2014, the total expenditure of health and sanitation was NT\$ 98.22 million.

**5%**

As of the end of 2014, CPC hires 834 people with disabilities, accounting for 5% of total staff, higher than the 1% required by "Bill of Protection of Rights on Persons with Disabilities". Of these employees, 12 are managers.

**100%**

In 2014, the reinstatement and staying rate of those taking parental leave reached 100%.

**14,787** employees

As of the end of 2014, the number of employees at CPC is 14,787.

**40** hours

For CPC employees, no matter male or female are all entitled equal opportunity of training. In 2014, the average training hours for all employees is 40 hours.

NT\$ **366** million

In 2014, CPC spent NT\$ 366 million on social care.





## 3.1 Customers and Us

CPC works hard on all business areas, and emphasizes on core corporation value of “Customer-Focused and Service First”. We pay attention to customers’ wishes, and lately have been working on customer based service system network. We would keep pursuing the ultimate customer satisfaction. One of our management ideas, “Top in Service and First in Quality”, is CPC’s essential commitment to our customers. We would base on our core technology to provide safe and diversified products. For years, CPC fleets of tankers take care of transporting gasoline around the island for oil supply and are in charge of offshore islands’ gasoline inventory. With those tankers, people in Taiwan can all enjoy the same high quality gasoline from CPC.

### 3.1.1 Providing Clean and Diversified Products

CPC provides customers with product, service, and marketing promotion according to Article 62-1 of Budget Act, and always marks “CPC Ads”. In 2014, there was no product, service, advertisement or marketing related regulation violation, nor with any fines.

CPC truly emphasizes on company logo and trademarks. All the logo and trademarks are legally applied and registered to get the exclusive usage right. We are always monitoring market trends and protecting company goodwill. All of our products are marked with our logo to prevent any confusion from customers and to protect company benefits.



#### Service for Fuel Related Products

For the CPC products, besides detailed marking and description for danger identification and ingredient list, we also list the “Product Regulation”, “Material Safety Data Sheet”, “Hazard Identification Data” and “Ingredient Identification Data” in “Product and Service” section of our company website. In that section, there are also other detailed customer service items and daily product prices with all information being open and transparent. The manufacturing process, quality and transportation of our petrochemical products all follow international and domestic environment protection regulations and we can also provide Safety Data Sheet (SDS) for all the products to ensure the safety. Customers are welcome to visit our website for the quality verification reports for all of our products. In 2014, we did not have any violation for regulation or voluntary acts.



#### Service for Biotechnology Products

CPC’s “Biotechnology Business Center” is responsible for research and development of biotechnology and health food. For the last decade or so, it has been constantly improving and introducing new products with great results. CPC’s biotechnology products, See Clean Eco-friendly Laundry Liquid and Zoeyen GSH Bio-fiber Moisturizing Facial Mask are both SNQ (Symbol of National Quality) certified. See Clean Eco-friendly Laundry Liquid is the only domestic liquid detergent to get both Taiwan Green Mark and SNQ certification. Its ingredients follow CNS 2477 category three national standard for laundry detergent. With materials from coconuts and corns and food level additives, it is sold at ease and people can buy with no worry. CPC biotech products always abide by the idea of safety and effectiveness. For more information concerning See Clean Eco-friendly Laundry Liquid, please check CPC official website at [event.topwin.com.tw/seeeclean/index\\_cf.html](http://event.topwin.com.tw/seeeclean/index_cf.html) and See Clean FB Fan Group at [www.facebook.com/SeeClean](http://www.facebook.com/SeeClean).

CPC has been upholding a philosophy of providing safe and effective biotech products. We have established the “Biotech Product Research and Development Management Handbook”, which specifies all the operation procedures and important items that need to be monitored and controlled from R&D. In addition, we also implement double inspection, with both CPC and the contract factory doing checking and inspection separately. It would be acceptable only when both reports are passed. In terms of being effective, with the professionalism of our R&D personnel, the ingredients used are all for their explicit physiology functions whose effectiveness can be fully brought out through the formulation design.



#### Explanation Concerning the Prohibited Concerted Action in Fair Trade Act

CPC’s gasoline and diesel prices are adjusted every week based on the floating gasoline price adjusting mechanism. In June, 2013, the Fair Trade Commission conducted investigation into whether the price adjustment of CPC and FPCC involved the action of Monopolistic Pricing. The Fair Trade Commission stated in January, 2014 that both CPC and FPCC are indeed oligopolistic businesses, but the floating gasoline price adjusting mechanism is supervised by regulatory authorities. In addition, it is also difficult to identify that the pricing of both companies is made to pursue illegal monopoly interests, and the followed price increase is not a unique case. Therefore, both companies were exempted from punishment.

### 3.1.2 Leading and Innovative Gas Stations



Serving over 900 thousand cars daily, we are working hard to provide perfect services and to care for the society by making efforts to create leading and innovative gas stations. CPC gas stations have clean restrooms and are characterized by “Care, Multiple Services, Self-Service, Accessibility, Complex and Casual Style, Local Cultural Characteristics, Reaching to the Highest and Farthest and Green Buildings”. In the future, we will continue to lead the creativity and provide closer, more convenient and delicate gas stations to the general public.



**32** Loving Gas Stations

Currently, there are 32 CPC's Loving Gas Stations nationwide.



#### Caring for the Underprivileged: CPC's Loving Gas Stations

Since introducing “Loving Gas Stations” in 2001, CPC has named the ones hiring more than 5 physically challenged persons as “Loving Gas Station”. In 2014, CPC-owned gas stations hired 521 physically challenged part-time workers, which is about 11% of 4,698 total part-time workers. There are 32 “Loving Gas Stations” in Taiwan, distributing in the north, central and south.



**46** Charity Car Washing Gas Stations

As of the end of 2014, CPC has 46 Charity Car Washing Gas Stations nationwide and hires 514 physically or mentally challenged persons.



#### CPC's Gas Stations with Charity Carwash

Mostly working with local special education schools, CPC's car washing gas stations provide under privileged students and families a chance to bridge them into the society through intern jobs. By the end of 2014, there are 46 gas stations with charity carwash and we hire and train 514 physically challenged persons through car washing SOP so that they could be completely in charge of the service.



**172** self-service stations

Since 2004, we have been promoting self-service stations. Currently, there are 172 self-service stations, accounting for 28% of all CPC-owned gas stations.



#### Self-service Gas Stations

To cope with the trend, CPC installed the first card-swiping system for a single pump at Dazhi Gas Station back in November, 2004. After 10 years of promotion, there are currently 172 self-service gas stations nationwide. It is expected to add 35 more card-swiping stations in 2015 to provide diverse method of payment for our customers.



**594** accessible restrooms

By the end of 2014, there have been 594 accessible restrooms at CPC-owned gas stations.



#### Gas Stations with Accessible Restrooms

With the spirit of social care and to take the needs of the physically challenged people into consideration, CPC have promoted accessible facilities at 594 restrooms of CPC-owned gas stations by the end of 2014.





Scored **91.2**

The statistical survey shows excellent performance in customer satisfaction of CPC-owned gas stations for the past 5 years (scored 91.2).

### 3.1.3 Customer Satisfaction

By understanding consumer behavior, we keep enhancing the service quality at our gas stations. Therefore, CPC continues doing customer satisfaction survey for CPC-owned gas stations and also use the data as the reference to compare the difference in the satisfaction between franchised gas stations and FPCC gas stations. We will then review and improve the items with lower satisfaction. The statistical survey shows excellent performance in customer satisfaction of CPC-owned gas stations for the past 5 years (scored 91.2).



### Protection of Personal Data and the Privacy

CPC has established mechanism to protect customer personal data and increase education and training for the employee awareness, especially for gas station operators in the awareness of privacy protection and personal data safety. In 2014, there is no privacy violation or personal data breach case.

## 3.2 Affiliated Partners

CPC affiliated partners include suppliers and engineering and labor contractors. To maintain a good partner relationship, a complete partner management mechanism is essential, of which, stable supply is the iron rule of CPC supply chain management.

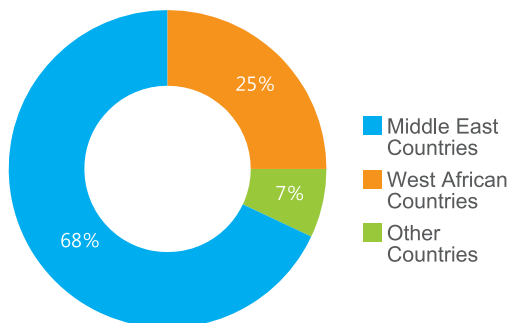
### 3.2.1 Characteristics of Overseas Purchase

About 99% of the crude oil CPC refined is imported. The types of imported crude oil have to comply with the refining structure, and the procurement strategy has to set stable supply as the priority. Therefore, we have focused the long-term purchasing contract with Middle East countries. In addition, to meet the national environmental protection requirements for low-sulfur oil, there is a certain percentage of low-sulfur crude oil purchased from West African or other countries. The total imported oil for 2014 is 140 million barrels, with the majority of 68% from the Middle East, including Saudi Arabia, United Arab Emirates, Kuwait, Oman, Iran and Iraq, 25% from West African Countries including Angola, Ghana and Nigeria, and the rest from Indonesia, Australia, Azerbaijan and Russia.

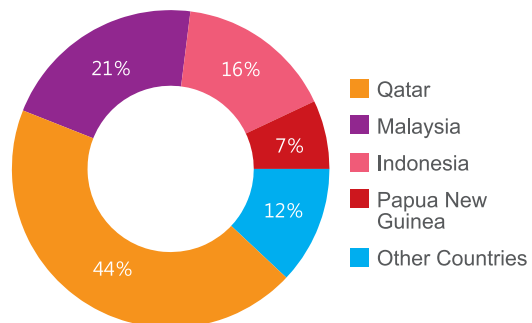
98% of the natural gas needed is also imported. In order to stabilize supply, CPC is actively pursuing long term contracts. For now, natural gas mostly comes from Qatar, Malaysia, Indonesia and Papua New Guinea, with 80% of the total import. To continue the diversification of natural gas sources to respond to sudden surge of demand, we have signed midterm and in stock purchasing contracts with 22 suppliers. Possible sources are from Nigeria, Trinidad, Equatorial Guinea, Australia and other African exporting countries.

In 2014, the percentage purchased from Qatar, Malaysia, Indonesia, Papua New Guinea and others is 44%, 21%, 16%, 7% and 12% respectively.

+ Sources of Imported Crude Oil



+ Sources of Imported LNG



### 3.2.2 Contracts for Affiliated Partners

For importing crude oil or natural gas from overseas suppliers, CPC always signs purchasing contracts, specifying that the suppliers should abide by their local regulations including labor right related ones. Suppliers, at the same time, need to provide the definite source for the oil or natural gas, and CPC can filter through it and make sure there are no violations of international regulation or involvement with commonly known wrongful oil or natural gas supply sources. In LNG supplier management mechanism, we have “Imported LNG Purchasing Operation Procedures” and “LNG Purchasing Plan Review and Advisory Committee”, through which we can manage and screen the suppliers as well as check their capability of fulfilling the contract.

As for engineering and labor purchasing, CPC, as a state-owned enterprise, has to follow Government Procurement Act. In other words, anyone having violated government regulations and having been banned from any transactions is not eligible to be CPC’s supplier or contractor. Also, when signing contracts or agreements, CPC specifically lists that the contractor must abide by government regulations in hiring labors and workers. The regulations include “Labor Standard Law”, “Labor Safety and Health Law”, and all the other related enforcement rules, acts and regulations.

### 3.2.3 Human Rights Management of Important Investment

CPC’s fixed asset investment is mostly about the replacement or expansion of public and environment protection facilities for the renew or expanding programs for oil and NG exploration, production, marketing, transportation and storage, public use, and environmental protection. All the investment projects have to be reviewed in the “Investment Plan Review Meeting” and the “High-Level Executive Sales Report Meeting”. After approved by the Board of Directors, the projects will have to be reported to higher authorities before implementation. In 2014, there is no new fixed asset investment plan, and there are 7 on-going ones. To manage the risk of human rights violations of the suppliers, under the Government Procurement Act, we require our contractors to jointly fulfill the social, environmental and ethical responsibility (such as the provision of job opportunities for more disadvantaged groups), aiming to work together to enhance our corporate social responsibility. Besides, when signing contracts or agreements, CPC specifically requires our suppliers to follow Labor Standard Law and related regulations to prevent any case of child labor and forced labor. In addition to ensuring the health and safety at work, CPC also expects our contractors’ workers to be treated with respect and dignity. In order to reduce industrial safety accidents to maintain contractors workers, we not only conduct active security management counseling and auditing but also emphasize the industrial safety outreach activities so as to reinforcement the construction of safety awareness for the contractor workers.

To adhere to gender equality and basic human rights, CPC always follows regulations from authority for planning, review, and execution of fixed asset investment. Since 2012, for any fixed asset investment over 10 billion dollars, we have followed the rules to evaluate Gender Impact Assessment (GIA) while making feasibility study and report. All the construction and labor procurement operations in each investment plan follow the relevant provisions of Government Procurement Law. It is stipulated in the contract or agreement that the contractors must abide by and enforce provisions concerning the working conditions and the human rights in “Labor Standard Law”, “Labor Safety and Health Law” and “Gender Equity Act”.



**30** suppliers

CPC has CSR assessment on our suppliers with information disclosure questionnaire, and it was implemented on a total of 30 suppliers

### 3.2.4 CSR Management of the Supply Chain

In addition to the existing management of suppliers, we are also aware of the importance of supplier management when it comes to environmental issues. Therefore, we require our suppliers to comply with local environmental regulations and provide products conforming to the international standards so as to reduce environmental pollution. In 2015, CPC introduces the self-evaluation questionnaire for our suppliers, designing evaluation standards for 5 aspects including Labor, Health and Safety, Environment, Management System and Moral Standards so as to have the initial understanding of the suppliers to see if they can have continuous voluntary improvement and take their CSR.

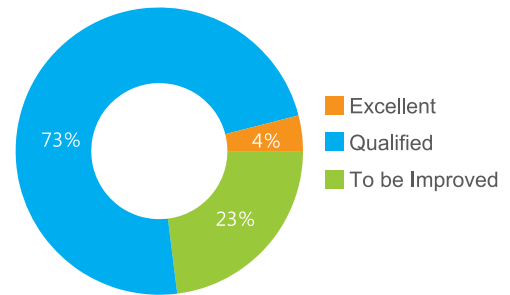
We divide our suppliers into bulk raw material suppliers, financial suppliers and labor suppliers. This year, a total of 30 suppliers completed the self-evaluation. Based on the scores obtained, these suppliers are divided into three grades of “Excellent”,

“Qualified” and “To be Improved”. The results will also serve as a reference for us to manage and improve our supplier management so that we can grow together with our suppliers.

## Analysis of Suppliers CSR Evaluation

CPC’s supplier CSR evaluation is conducted with the questionnaire for information disclosure, and a total of 30 suppliers are included in the evaluation this year. There are three grades of these suppliers, “Excellent”, “Qualified” and “To be Improved”. From the CSR evaluation results, 4% of the suppliers reach the “Excellent” grade, 73% are “Qualified” and about 23% are “To be Improved”. Among the self-evaluated suppliers, 7 of them have published CSR-related reports.

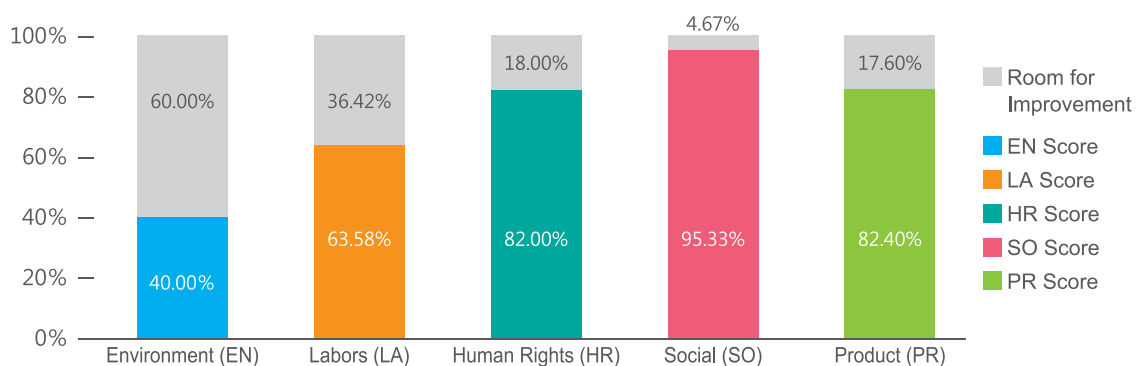
Grade	Score	Number of Suppliers	Percentage
Excellent	105~85	1	4%
Qualified	84~60	22	73%
To be Improved	<60	7	23%
Total		30	100%



Further analysis of the overall aspects and individual aspect is conducted, and the results are as follows.

Overall Scores of the 30 Suppliers in Each Aspect		
Aspect	Score (percentage)	Room for Improvement (percentage)
Environment (EN)	40.00%	60.00%
Labors (LA)	63.58%	36.42%
Human Rights (HR)	82.00%	18.00%
Social (SO)	95.33%	4.67%
Product (PR)	82.40%	17.60%

### + Score in Each Aspect of the Supplier Information Disclosure

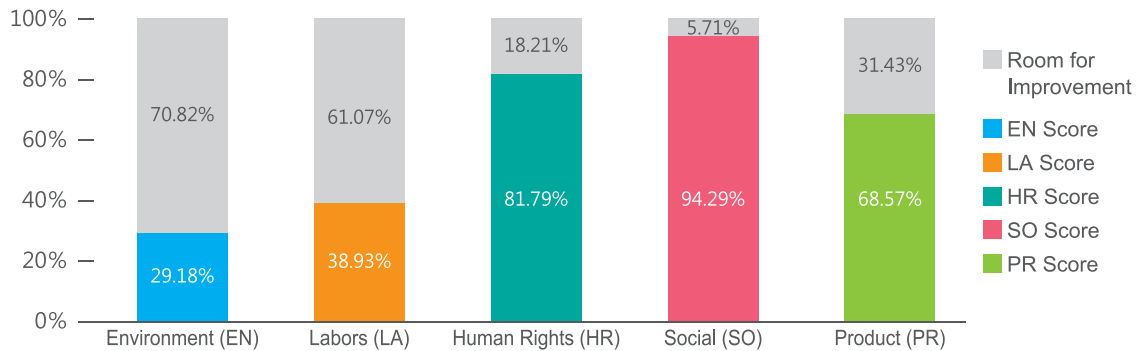


## Sophisticated Management

In the overall CSR evaluation results of CPC’s 30 suppliers, about 23% suppliers are in the “To be Improved” grade. It is found in our further analysis of these 7 suppliers that their scores in Environment and Labor Aspects are lower due to the fact that the scoring of this evaluation does not take the characteristics of some industries the suppliers belong to into consideration. The scoring and analysis methods, therefore, will be reviewed in the future, and the follow-up check of the improvement of suppliers with lower scores will continue.

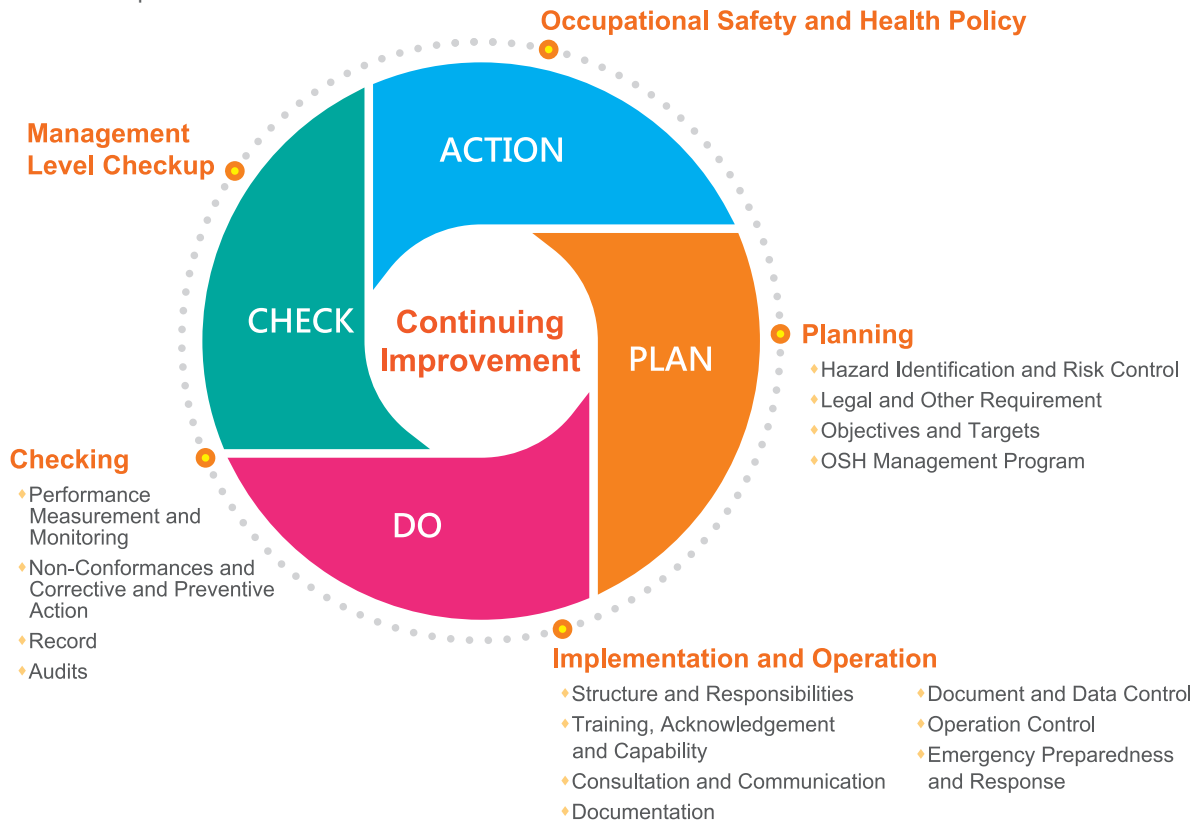
Overall Scores of the 7 “To be Improved” Suppliers in Each Aspect			
Aspect	Score (percentage)	Room for Improvement (percentage)	Total Score
Environment (EN)	29.18%	70.82%	100.00%
Labors (LA)	38.93%	61.07%	100.00%
Human Rights (HR)	81.79%	18.21%	100.00%
Social (SO)	94.29%	5.71%	100.00%
Product (PR)	68.57%	31.43%	100.00%

+ Score in each aspect of information disclosure for suppliers in “To be improved” grade



## 3.3 Sustainable Workplace

CPC participates in oil and gas exploration, refinery, storage and transportation, and sales, and provides resources and training that emphasize on safety and health from design, construction to production and also service, as required in the regulations. Through PDCA management mechanism, we would keep reducing the risks to personnel, equipment and environment, and emphasize on damage prevention and employees’ health improvement. We would treat work place safety as the core value of company management and emphasize even more on employees’ self-awareness of safety to achieve the goal of 100% safe workplace and zero accident.



### 3.3.1 Workplace Safety Policies and Goals

Workplace safety is the foundation of company operation. In order to reach the goal of “100% Occupational Safety for Zero Industrial Accidents”, CPC stands by the safety and health policy to keep elevating safety culture.



#### Advisory Committee for Workplace Safety and Health Policies

In order to enhance industrial safety culture, improve working environment and maintain the safety and health of the employees at CPC, the Advisory Committee for Workplace Safety and Health Policies is set up, which comprises internal members of CPC and experienced and famous representatives from governmental agencies, scholars, and experts. The meeting is convened every 6 months, and the first meeting was convened on Dec. 25, 2014, aiming at collecting ideas and exchanging opinions through consultation for suggestions with new thinking so as to achieve the goals for safety and health of our staffs, continuous improvement and sustainable management.



**31** units

By the end of 2014, a total of 31 units of CPC have completed the establishment and verification of Taiwan Occupational Safety and Health Management System (TOSHMS).

### 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 2014, we had total of 31 business units establishing and achieving TOSHMS certification.



#### Workplace Safety Audit System

CPC attaches great importance on the safety and health of the employees and contractors. Work safety division sets up work safety auditing principles, and work safety group from HQ would do on-site auditing. It also asks all departments to carry out self-auditing, evaluate work safety and environmental protection, implement safety auditing for managers and for each level, and promote work safety through games and competitions. It would instruct personnel of all levels the safety concept, procedures and items to push for the establishment of safety behaviors. Also, to be able to handle accidents, it sets up regulations like “principles of the emergency response program” and “the key points of emergency response training” (including the contractors and visitors). All other departments need to set up their own emergency response organization and policy according to their own operation condition and environment and need regular training and exercises to get familiar with the procedures to reduce the damage of the disaster and minimize the loss of personnel and equipment.



#### 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 chairman 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 2014, labor union members submitted 20 proposals which accounted for 100% of the issues for discussion.





### Promotion of Issues Concerning Labor 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. Through the coordination and the improvement in issues, our employees can be more focused on their work and face the challenges at work to improve the company's operating performance.



### Management of Contractors' Safety








CPC has set "Management procedures for safety and health of contractors" and "Guidance on safe work permit". The same regulations and procedures apply not only to our employees but also to the contractors' workers and are strictly enforced. The contractors' labor accidents are seen the same as the ones for our employees, and would be investigated, recorded and tracked.

In addition, we also established "inspection and auditing teams" to go to construction sites for non-scheduled on-site inspection and auditing. Any violations would be fined severely and all the team members would also act as safety coaches to correct the unsafe behavior of the contractor's workers immediately to reduce the risk.

In 2014, an accident occurred because one contractor tried to hurry up to catch up with the schedule and did not follow the SOP. We immediately reviewed and improved on system operation, work flow control and emergency response and also reinforced the establishment of safety awareness of our contractors. Everyone is expected to remember this accident and to prevent similar accident or injury from happening again. CPC has conducted 17 times of inspection and auditing of our contractors in 2014.



### Reinforcement of Safety Management Procedures for Contractors >>>>>

-  Ask contractors to follow strictly on the SOP and construction procedures.
-  Contractors need to have safety and health personnel on site to check the safety and health all the time. If there are no such personnel, construction work would be halted immediately.
-  Use computers to manage and control the entry and exit of contractor's workers at the construction site. All managers need to know the ongoing construction items and number of contractors.
-  All constructions would be categorized according to level of danger involved. Highly dangerous ones would need supervisors to do on-site monitoring all the time. Generally, we have the "no construction on holidays" policy, but if needed, managers in charge would need to be present.
-  Enhance access control, and no illegal or unsafe gears or tools are allowed. If cigarettes are taken or smoked in a nonsmoking area, the person is banned from working with CPC forever.
-  The work items and the corresponding responsibility need to be clearly stated in the contract, and the contractors would need to sign the safety affidavit to promise and guarantee the construction safety.
-  Hold safety and health trainings and tests on contractors, those who are not properly trained are not allowed to work.



### Safety Management of 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. The contracted security companies we currently cooperate with include Jungkuo Security Company, Lian-an Security Company, Guofeng Security Company, and Waylong Security Company. All security staffs in our company have to take 4 hours of on-the-job training annually and have to receive the professional security guard training as well as the emergency personnel training; operators in the control rooms have to attend disaster prevention



 **Fire Control Operation Management**

According to the fire code regulation, CPC performs regular inspection, maintenance and repair for firefighting equipment. We also establish “work plan for firefighting management”, “procedures for firefighting pump test and water pressure test for firefighting water system” and “oil and gas pipelines fire prevention check list” to make sure that regular checking and inspection are properly done and all the firefighting equipment is always ready. Also, we have professional teams to help each department with the firefighting water pump function test, and 5 manuals for 5 firefighting equipment operation have been published, including fire extinguisher, firefighting spray and sprinkle, firefighting foam, CO<sub>2</sub> fire extinguisher system, and firefighting pumps.



 **Other Safety Management**

Other safety management includes safety gear management, safety and health management for chemicals and traffic safety management. We also have all numbers of the departments in charge of emergency listed on our company website.



**25,560** person-times

In 2014, a total of 25,560 person-times received work safety and health education and training.

**3.3.3 Work Place Safety Education , Training and Advocating**

To elevate the work place safety and environmental protection functions of all employees at CPC, we 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. It stipulates that at the end of each year, the demand for training should be investigated as the basis to organize education and training of the following year to reach the objective of training for the purpose of application. Various training, exchanges and promotion of EHS-related training, and the chairperson, president and high-level management would go to different departments to promote EHS. Educational materials were created from the related issues and sent for the on-line learning classes with the tests and exemplar cases. Moreover, to ensure the safety and quality of contractors’ construction, it is required in the “Management measures of contractors’ safety and health” that the contractors’ welding and scaffolding workers have to pass CPC’s training to be qualified to enter the site for their job.

Unit: person-time

Types of Training	Year		
	2012	2013	2014
Safety and Health Certifications	6,208	4,838	3,017
On-the-job Training for Safety and Health	14,160	14,346	15,491
On-the-job Training for Health and Hygiene	5,372	9,772	7,052
<b>Total</b>	<b>25,740</b>	<b>28,956</b>	<b>25,560</b>

## 2014 Work Safety and Health Conference

CPC's Exploration & Production Business Division and Exploration & Development Research Institute held 2014 Annual Work Safety and Health Conference on October 27-28 at the Gong-Tao Building of the Exploration & Development Research Institute. The invited domestic and mainland guests included Central Occupational Safety and Health Center of OSHA, Miao-Li General Hospital, Bureau of Mines MOEA, SAHTECH, Schlumberger Overseas S. A., Great Eastern Resin Industrial. co., Chang Chun Group, China Steel, National Tsing Hua University, Chia Nan University of Pharmacy & Science as well as China's big four oil companies for the keynote speeches and research papers presentation. The 6 themes included Process Safety Technology, Disaster and Emergency Response, Cases of Occupational Accidents, Equipment Inspection, Occupational Health and Health Promotion and Engineering Safety Management, with a total of 206 participants for exchanges and learning, which has significant meanings for the enhancement of domestic workplace and health techniques. All the papers and speeches of this conference can be downloaded at our company website.



Group photo of CPC representatives and distinguished guests from China

### 3.3.4 Workplace Safety Performance

International Labor Organization (ILO) Statistics of Code of Conduct for "Record and Report of Occupational Accidents and Diseases"		
Item	Calculation Rules	
<b>Injury Rate (IR)</b>	$(\text{Number of recorded injuries} / \text{Number of hours worked}) \times 200,000$ $(10 / 32,209,528) \times 200,000$	0.06
<b>Occupational Disease Rate (ODR)</b>	$(\text{Number of recorded diseases} / \text{Number of hours worked}) \times 200,000$ $(0 / 32,209,528) \times 200,000$	0.00
<b>Lost Day Rate (LDR)</b>	$(\text{Number of day cases} / \text{Number of hours worked}) \times 200,000$ $(6,150 / 32,209,528) \times 200,000$	3.81
	$\text{Number of absent days} / (\text{Number of employee} \times \text{Annual work days}) \times 200,000$ $22,120.7 / (14,787 \times 250) \times 200,000$	1,196.76
<b>Absentee Rate (AR)</b>	$\text{Female absent days} / (\text{Number of female employee} \times \text{Annual work days}) \times 200,000$ $5,092.6 / (1,795 \times 250) \times 200,000$	2,296.69
	$\text{Male absent days} / (\text{Number of male employee} \times \text{Annual work days}) \times 200,000$ $17,028.1 / (12,992 \times 250) \times 200,000$	1,048.53
<b>Total Number of Employee for Work-related Fatalities</b>	—	1 person


Note: There is no female injury or death case in 2014.

## Accident Cases

In 2014, there are 2 fire cases and 8 workplace injury cases. The result of disabling injury severity rate is 190, serious disabling injury frequency rate is 0.31, and lost day rate is 3.81.

Description of Fire Accident in 2014		
Description	Major cause of fire	Improvement Action
On May 19th, 2014, a fire broke out at the sump of the Er-Qiao Section in the Dalin Refinery of the Refining Business Division	The lightning ignited the R-05 floating roof of the fuel tank, causing the smoldering of the seals that led to the fire.	<ol style="list-style-type: none"> <li>1. Reinforcement of inspection of the tightness fuel tank floating roof and tank wall conductive sheet.</li> <li>2. Measure the lightning rod condition periodically.</li> <li>3. Reinforcement of inspections in case of abnormal weather condition.</li> </ol>
On Sep 7th, 2014, a fire broke out in Electrical Room of the Second Wastewater Treatment Unit of the South Area Waste Treatment Plant of the Kaohsiung Refinery	Smoldering was found in the secondary current terminals of the adaptor that offers socket power supply to the Electrical Room of the second waste water treatment unit so the halon fire extinguishing system was activated.	<ol style="list-style-type: none"> <li>1. From now on, when the on-site unit reports any abnormality of distribution board, the electrical maintenance staff should conduct visual inspection first, followed by the checks with infrared night-time vision device.</li> <li>2. When the reason for the abnormality of the electrical equipment cannot be found, meetings should be continuously convened to look into the reason.</li> <li>3. This incident is used as the educational material for our education and training. The employees are also reminded to remain calm when incidents occur.</li> <li>4. Increase the patrol frequency to the Electrical Room to once every hour.</li> <li>5. When fire occurs, firefighters should be sent to the site, and when support is required, the fire team has to report to the Fire Department.</li> </ol>

In addition, in 2014, the staff from Measurement Branch, the Exploration & Production Business Division was drowned when measuring and inspecting the drill holes. We work hard to further explore the causes and improvement measures and advocate the safety concept to prevent similar incidents from happening again.

Accident	Improvement Action
<p>Death caused when measuring and inspecting the drill holes, Measurement Branch, the Exploration &amp; Production Business Division</p> 	<ol style="list-style-type: none"> <li>1. From now on, when working in the intertidal zone, sea gate or rivers, workers must wear life jackets (except for special circumstances, for example, dynamite workers are exceptional to prevent static electricity in case of explosion).</li> <li>2. Purchase lifebuoy to increase anti-drowning security protection.</li> <li>3. Organize re-education training to strengthen risk awareness and psychological counseling of team members.</li> </ol>

## Total Cost of Occupational Safety

CPC's occupational safety related costs include company operation cost, suppliers and clients related cost, management activity cost, R&D cost, society activity cost, and loss and compensation cost, with a total expenditure of NT\$ 1.88 billion.



Occupational Safety Cost			Unit: NT\$ thousand
	2012	2013	2014
Company Operation Cost	1,332,016	1,270,154	1,188,292
Suppliers and Clients Related Cost	181,634	184,062	241,894
Management Activity Cost	481,397	423,946	415,622
R&D Cost	73,262	35,381	29,795
Society Activity Cost	7,804	515	118
Loss and Compensation Cost	248	60	300
Total	2,076,361	1,914,118	1,876,021

### 3.3.5 Healthy Work Environment

CPC has established clinics for employees' convenience. We also arrange health checkups including general and special ones for all employees. Checking work environment regularly, we have been providing healthy and safe workplaces. With enhanced health management statistic capability, the foundation of employee health management has been successfully built. We also provide professional health training and carry out health and hygiene activity to protect our employees and promote better health. CPC would hold all kinds of dynamic or static health related activities or seminars, such as, weight-loss challenge, on-site physician health counseling, remedies for sleeping disorder, and stress management. We would also provide monthly health improving information to promote health awareness to all employees.

Regular Health Examination			
	2012	2013	2014
Number of employees receiving health exams (person)	13,624	16,770	13,028
Total cost (NT\$)	18,751,196	28,760,260	26,244,871

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



Anti-Cancer Charity Lecture



Photo of CPC Chairperson and the speaker (Chairperson Liu, Jin-Biao)

### Infectious Disease Prevention Measures

#### Management of Mandatory Reporting Infectious Diseases

In addition to cooperating with the government epidemic prevention works, like disinfection of workplace and flu vaccination, our Work Safety and Health Department could also hold awareness and health education activities. For example, we hold annual protection activities for awareness of enterovirus, dengue fever and the flu.



### Management of Possible Pandemic or Epidemic Diseases

For pandemic diseases such as SARS, Bird Flu, H1N1 and H7N9 or new pathogens or mandatory reporting infectious diseases which could cause large scale infection, Work Safety and Health Department would collect domestic and international data and follow suggestions from professional doctors from World Health Organization (WHO) and Center for Disease Control. According to the infectious pattern and possible impacts after recovery, preparation for disinfection materials would be implemented for disinfection immediately once everything is ready. Then the procedures will be adjusted accordingly until the infection is under control or stopped. After that, we will collect all the data and file as a reference when needed.



### Leisure & Recreation Center

CPC provides leisure and recreation centers for all staff and their family for exercise and leisure activity with facilities including swimming pools, gyms, and ping pong tables, basketball courts and aerobics classrooms. Our employees can enjoy all the facilities and obtain a healthy balance physically and mentally and improve the relationship between friends and colleagues.



### Accessible Environment

Our office facilities all follow construction regulations for people with disabilities. All facilities like outdoor guiding passage, ramps with rails, indoor hall ways, voice control and braille in elevators, stairway guidance, swirling space and restrooms are being properly constructed.



NT\$ 98.22 million

In 2014, the total expenditure of health and sanitation was NT\$ 98.22 million.



### Overall Expenditure on Occupational Health

Overall Expenditure on Occupational Health			Unit: NT\$ thousand
	2012	2013	2014
Direct Costs	100,829	98,162	68,406
Indirect Costs	18,582	15,688	14,525
Management Costs	13,187	12,763	13,141
R&D Costs	0	0	0
Social Costs	5,739	3,845	2,151
Losses and Compensation Costs	16	0	0
<b>Total</b>	<b>138,353</b>	<b>130,458</b>	<b>98,223</b>

## 3.4 Great to Have You

To stimulate the employees' potentials, we not only make long-term efforts to provide staff training and guidance but also strengthen incentives and welfare measures to actively foster managerial talents so that these excellent talents can lead the development of the company. Meanwhile, we regard our employees as the most precious assets and the essential and inseparable part of CPC. Without suitable and enough talents, sustainable management is impossible. Therefore, we cherish talents, care for our employees and strive to provide a perfect working environment with a perfect human resource development system. In addition, we have been upholding the principle to fulfill our corporate social responsibility, and over the years, have continuously been hiring aboriginal and physically and mentally challenged employees, and regard all employees as part of the company. With the concepts of "Care", "Heritage" and "Caring", we expect every employee here to enjoy working in this environment without worries that can further lead the company to the path of sustainable development.

### 3.4.1 Respecting Human Rights

CPC does not enforce over work. According to Rule 37 of "CPC working rules", when the employer needs the employees to work beyond regular working hours, agreement from the union is needed but the extended time with the regular hours cannot exceed 12 hours a day, and the monthly overtime cannot exceed 46 hours. However, in special cases, such as emergency repair work, the limitation can be lifted but it needs to be authorized by the management level and proper rest has to be given to the overtime workers. In addition to providing overtime pay based on the Labor Standards Law, additional incentives will also be given to employees who work on three major festivals or typhoon days. If the employees prefer to exchange the pay for time off, there is one-year period for them to use it. Working overtime must be reported to and approved by the supervisors, and supervisors may not authorize anyone to approve it on his/her behalf. For the abnormal overtime appears in a department or an individual, review and discussion on the case should be made, pushing the directors of a department to take the responsibility of controlling overtime in their departments. When the overtime seems abnormal in a month, relevant supervisors have to take the responsibility and are required to make reports and reviews to the company.

Regarding to the cases of layoff, CPC follows proper informing procedures according to Labor Standards Law and other related regulations to make sure the employees have enough time for preparation. Employees having worked over 3 months but not yet one year need 10 days of advance notice; over one year but less than 3 years, 20 days in advance; over 3 years, 30 days in advance. Anyone not getting proper advance notice would be paid accordingly. CPC does not have any human-right related grievance in 2014.



5%

As of the end of 2014, CPC hires 834 people with disabilities, accounting for 5% of total staff, higher than the 1% required by "Bill of Protection of Rights on Persons with Disabilities". Of these employees, 12 are managers.



#### Hire and Care for Underprivileged Groups

As of the end of 2014, CPC hires 834 people with disabilities, accounting for 5% of total staff, higher than the 1% required by "Bill of Protection of Rights on Persons with Disabilities". Of these employees, 12 are managers, showing that CPC is characterized by being an excellent corporate citizen. In addition, we hire 22 employees with aboriginal identity, and our Marketing Business Division hires a total of 119 aboriginal part-time workers and labor contracted personnel in plain and mountain townships. There were no discrimination incidents in 2014.



100%

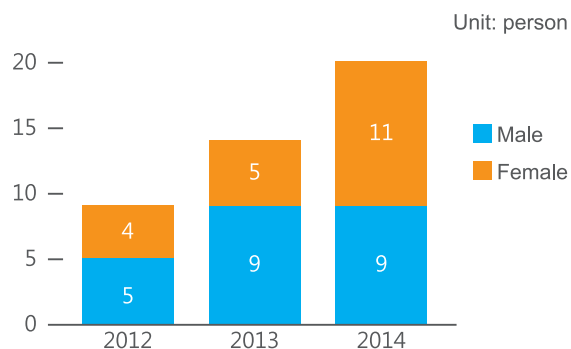
In 2014, the reinstatement and staying rate of those taking parental leave reached 100%



#### Promotion of Gender Equality

For the same jobs, the remuneration CPC gives to our male or female employees is nearly the same. However, because of the special requirement for exploration and refinery, most of the employees in this division are males. However, in the headquarters, the number of female managers is increasing annually and the percentage of female manager is over the percentage of female employees.

CPC also provides friendly working environment for female workers with quality and certified breastfeeding rooms and educational training for gender mainstreaming. In 2014, we held 14 classes with 935 person-times trained. During the class, films about work place anti-discrimination and Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) were played to inform the trainees of the work place discrimination and enhance employees' human right awareness. Based on the "Sexual Harassment Prevention Act", we set up the Sexual Discrimination Grievance Mediation Committee to be in charge of mediating sex-



ual discrimination cases. In HQ, we also have sexual discrimination web page and sexual discrimination grievance hotline (02) 8725-8422. We have sexual discrimination prevention training for managers and employees to promote the awareness and to prevent it from happening. There was one sexual harassment case in 2014, and the case was established after determined by the Committee. The case was closed after filing the results to the Bureau of Social Affairs.

CPC supports unpaid parental leave, and in 2014, 9 males and 11 females applied for it. All of the previous applicants came back to work in 2014, with 100% reinstatement and 100% staying. Also, those who reinstated in 2013 have stayed and worked with us in 2014, again 100% staying rate.



### Hire Local Residents in Important Operation Sites

To help build the harmonious relationship between CPC and residents of important operation sites and to improve the development and prosperity of local community, CPC reserves some positions and with bonus points to better hire local residents when there are openings.



### Equal Pay System

For the same grade and the same level, the starting salaries for female and male employees are the same. The salaries of female managers compare to those of male managers is 1:0.993, and the salaries of general female staff compare to those of male staff is 1:1.001.



### The Retirement System

CPC retirement system follows “Labor Standard Law” and “Regulations Governing the Pension and Severance Payment of MOEA Operated Enterprise Employees”. “The Supervisory Committee of Workers’ Retirement Fund” and “Employees Retirement Fund Management Committee” are established to take care of labors’ and workers’ retirement fund appropriation and payment. The appropriated percentage of the gross salary and the gross taxable salary for both the labor and the worker retirement funds are 15% and 2%. The pension fund is in the custody of Pension Management Committee and the Labor Pension Fund Benefits Section in Trust Department of Bank of Taiwan. Since 2005, if CPC hires employees and contract workers choose the new pension system, CPC would allocate 6% of the monthly salary into the personal retirement account, according to the Labor Pension Act. If the new system is chosen but the seniority of the old system is preserved, we would follow the Labor Standard Law and keep allocating labor pension fund monthly.



### Union and the Group Agreement

CPC Article of Corporation was revised in 2001, adding number of directors in the board to 13, including 3 from the union to be presented in the company board meeting to make the relationship between labor and management smoother. We want to have a good interaction and common understanding with the union. We also set up an agreement with the union, and it is applicable to all employees.

To reduce arguments, the common issues between labor and management are discussed and opinions are exchanged as needed. In addition, union representatives are invited to join safety and health, grievance, reward and punishment committees, engineering bid review and auditing committee and purchasing review and auditing committee. Also “Labor Welfare Committee” and “The Supervisory Committee of Workers’ Retirement Fund” consist of labor and management. CPC labor is 100% protected by the agreement, and it shows our resolve in protecting employees’ rights and benefits. In addition, CPC set up SOP for operation guidance for stability meeting, “handling grievance of labor-management disputes”, which can be used to handle grievance of disputes and emergencies. In 2014, there was no labor-management dispute and no loss occurred from it.

## 3.4.2 Hiring Employees



### Employment Status

CPC gets new employees through “new employee examination for MOEA owned company”, with educational qualification of junior college degree or above. Contract employees need to have high school degree or above, and thus all the employees are over 18 year of age. For the part-time workers, according to “Management guidelines for gas station part-time workers,



Marketing Business Division, CPC”, the limitation is over 16 years old, so CPC never hires child labor. In order to provide more job opportunities to underprivileged groups, we have special bonus points for physically and mentally challenged and aboriginal people in the new employee examination.

After hiring, CPC provides equal pay for equal work, and never has other considerations for race, belief, religion, political party, place of origin, birth place, gender, sexual orientation, marriage, appearance, being physically or mentally challenged or union member. We also ensure freedom of association for the employees, and encourage them to join clubs and cooperate with companies that follow the same principles. This is exactly the reason why there has never been a gender or race discrimination case against CPC. During 2014, there is no human right violation or discrimination case for newly hired employees. Nor is there any human rights impact on our company operation.

625 Newly Hired Employees in 2014; New Employment Rate of 4.2%						
Unit: person						
Gender		Age Distribution			Type of Employment	
Male	Female	Under 30	30~49	Over 50	Temporary Assigned	Employed
491	134	272(44%)	347(55%)	6(1%)	290	335

588 Retired/ Resigned Employees in 2014; Retired/ Resigned Rate of 3.96%					
Female			Male		
	Number	Percentage	Number	Percentage	
Under 30	5	0.03	16	0.11	
30-49	5	0.03	32	0.22	
Over 50	69	0.46	457	3.08	
Total	79	0.53	509	3.43	
Overall Retirement/ Resignation		588 people (3.96%)			

### Manpower Structure



**14,787** employees

As of the end of 2014, the number of employees at CPC is 14,787.

As of the end of 2014, CPC has 14,787 employees, with 12,992 male employees (87.86%) and 1,795 females (12.14%). All of the employees are hired from Taiwan with the average age of 50.9 years old and the average seniority of 25.4 years. In 2014, the new employees account for 4.2 % and the retired/resigned employees account for 3.96% of all employees.

Education Level Distribution				
Doctorate	Master	Bachelor	Junior College	High School and Under
1%	13%	21%	14%	51%
Job Distribution				
Direct Operation	Supporting Jobs	Management	Research	
72%	12%	13%	3%	
Age Distribution				
Under 30	30-49		Over 50	
4%	28%		68%	

Gender and Age Distribution for Managers and Non-managers								
	Managers				Non-managers			
	Number		Percentage		Number		Percentage	
	Female	Male	Female	Male	Female	Male	Female	Male
Under 30	0	0	0%	0%	193	427	1%	3%
30-49	35	89	0.3%	0.6%	419	3,625	2%	25%
Over 50	111	750	0.7%	5%	1,037	8,101	7%	55%

### 3.4.3 Human Resources Development and Training

CPC takes pride in career development for employees. Besides overall effective use of employees, we enforce the training for expertise for different business requirements and work hard on cultivating management talent. At the same time, we keep recruiting new young bloods and would like to have high quality human resources to lead the company development and elevate the competitiveness of the company. Lately, we have integrated the training system and established “CPC Enterprise University”. We analyzed and developed core technology course and divided our professional training into 4 departments of refining and petrochemical, exploration and production, marketing and sales and engineering. Each department would plan for different level of courses such as introductory, intermediate and advanced ones. To respond to lecturers’ retirement, we also introduced digital learning for all the core technology courses, built up digitized educational materials for “CPC e-college”, and activated cloud learning to continue and develop professional knowledge and technology for petroleum industry.



**40** hours

For CPC employees, no matter male or female are all entitled equal opportunity of training. In 2014, the average training hours for all employees are 40 hours.

#### Training Based on Job Requirement

According to “Operation Principles of Employees Training and Promotion”, CPC established management capability training, professional training and safety and health training certification for job requirement based on different work grades and professionalism. Classroom teaching, on-the- job instructions, job rotation, overseas education and online learning are used to build up job knowledge and experience, and to implement the spirit of “training for the job requirement”.

CPC is also working on research and investigation on professional skills needed for core professions and using it as the reference for internal promotion and interview questions. We want to be able to pick the persons with proper working attitude and ideas to join us. We also encourage employees to take part in national skill tests and certifications, and help them to get certifications in work safety and environmental protection. We also set up principles to provide scholarships to encourage employees’ education and lifelong learning including self-joining training for 2nd professional skills, on-the-job education, foreign languages and training for other job skills. We had 21 foreign language classes in 2014 with 309 person-times, participation to enhance the employees’ foreign language abilities.

To follow the trend of emphasizing social responsibility as an international enterprise, CPC held human rights related classes like industrial safety, gender equality and personal information protection in 2014. The total training hours are 127,568 hours with the participation of 24,110 person-times. For CPC employees, no matter male or female are all entitled for equal opportunity of training. In 2014, the average training hours for male is 39 hours and for female is 41 hours. We strive for gender equality for training classes and cultivating all professionalism needed for all employees.

## Employee Education and Training

Year	Manager Training		Professional Training		Second Professional Skill Training		Other Training	
	# of class	Person-time	# of class	Person-time	# of class	Person-time	# of class	Person-time
2011	55	2,481	2,094	52,800	406	12,893	547	27,077
2012	79	2,531	2,324	56,064	264	12,511	525	27,551
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

### CPC e-college

In 2002, CPC established “CPC e-college” in company intranet to improve employees’ professionalism and their work skills and to combine information technology and learning application in developing diversified e-learning resources. CPC e-college is a virtual college, emphasizing on innovation sharing, deepening knowledge and e-learning service. It was incorporated into CPC Enterprise College in 2005. 50% of courses are either self-developed or jointly developed core knowledge courses. CPC e-college also issues monthly e-publication.

Average Training Hours for Each Person Per Year					CPC e-college Unit: person/ month				
Year	2011	2012	2013	2014	Year	2011	2012	2013	2014
Managers	34	32	31	32	Max. # of People Online	43,703	57,501	46,734	51,917
All Employees	43	45	41	40	Average Reading Courses	14,900	25,221	15,489	15,140

### Employee Performance Evaluation

In the mid and end of every year, CPC would evaluate all employees for their performance and regularly track the achievement with proper rewards or punishments. CPC also is working on research and investigation on professional skills needed for core professions and using it as the reference for internal promotion and interview questions so as to select the persons with proper working attitude and ideas to join us.

Personnel Category	Percentage of People Evaluated in 2014	
	Male (Percentage)	Female (Percentage)
Staff Member	100.00%	100.00%
Contractual Employee	100.00%	100.00%

Note: The statistical number does not include newly hired employees in 2014 with the seniority of 6 months or less and those on unpaid leave.

### Medium and Long-term Talent Development Plan

To increase the overall competitiveness, CPC will keep going on core technical profession development plan to adapt the human resource demand for improvement of refinery structure, relocation of Kaohsiung Refinery and remodeling of Linyuan #3 Naphtha Cracking plant. We will keep enhancing the breadth and depth of the professional capability of the existing employees. Besides internal training and stockpiling of talents, we are planning to add staff within the allowed personnel quota to fill in the deficiencies. To cope with the needs for CPC’s mid to long term business development, the prediction of the number of retired/ resigned staff will be reported to higher authority for the adjustment of required workers in order to plan for new hiring.

### 3.4.4 Employees' Rights and Benefits

Besides building a perfect working environment for the employees, CPC emphasizes even more on and provides bonus for overall business performance, contribution and achievement for each individual employee. We provide funding according to "Employee Welfare Fund Act" and work with Taiwan Petroleum Workers' Union to establish Employee Welfare Committee for holding different kinds of employee welfare and leisure activities. To advance employee welfare, each region set up employee welfare branch under the Employee Welfare Committee. Besides joining National Health Insurance, Civil Servant Insurance and Labor Insurance for all employees, we provide additional group insurance, overseas travel and injury insurance for business trips, and subsidies for injury, disability and death caused by doing company activity to ensure employees' work and safety for life.

All business units have facilities for employee benefit, such as, clinics, restaurants, libraries and convenience stores and all kinds of exercising facilities like swimming pools, multifunction stadiums and gyms. Also, there are educational scholarships for children, university educational loans for children, medical subsidies for employee and family, subsidies for marriages, funeral and retirement as well as interest-free loans for emergency. To take care of young employees and carry out gender equality, we revised the rules for employee loaning, and added borrowing measures for marriage and birth. Also, according to the resolution from 7th labor-management meeting, if regional departments cannot afford to set up kindergartens, nearby highly evaluated and accredited kindergartens or preschools can be signed as special discounted ones for employees. CPC also helps to set up clubs for ball games, chess and bridge, mountain climbing, swimming, painting, and film appreciation to enlighten employees' life and enhance working moral.



### Assistance to Employees Involved in Lawsuits while Performing Duties

To help employees deal with lawsuits arisen while performing duties, CPC instituted the "caring and protection group" based on the "key points of legal cases of employees handling company tasks" to ensure our employees' right, benefit and dignity. The group consists of divisions of human resource, legal, ethic, administrative and public relations, the person involved and other related personnel. Besides sending someone to comfort the family, the group would gather data and hire lawyers to provide legal assistance.

## 3.5 Cheer for Love

As the leading enterprise of petrochemical industry in Taiwan, CPC has always taken the responsibility in developing essential industry and economic development of Taiwan, and has been contributing to supplying high quality living resources for food, clothing, housing and transportation. In addition, CPC has been working alongside with government policies to stabilize consumer prices and take care of the underprivileged groups. We subsidize gas for public transportation and taxi drivers and fishing boat fuel and set up gas stations in Ali Mountain and offshore islands. Besides these silent and quiet actions mentioned above, CPC also works tirelessly on "community caring", "looking after underprivileged groups", "public welfare activity" and "energy education and promotion" to build a harmonious society.





### 3.5.1 Social Care

#### CPC's Social Care Events in 2014



In early 2014, we held the Winter Pass-Warmth Activity. The instructor and members of CPC Fine Arts Club provided more than 70 works and within one month, all the paintings and works were subscribed. In the future, CPC will continue promoting charity work for a more harmonious and peaceful society.



The Winter Pass-Warmth to the Minority Activity in Miaoli Area was held by CPC's Exploration & Production Business Division from January 7~8, 2014. Carrying condolences were sent to Jinshuei Elementary School, Qiao Le Elementary School, Jingshan Elementary School in Choulun Township, St. Francis Xavier Home for Children and Juvenile and Charity Association at Hou-Long Township, Ruihu Elementary School at Shihu Township, Joy Student Association and the Pink Panther Caring Society.



The chairperson, Jing Huang of CPC's Women Association in Petrochemical Business Division led the members to visit Children's home, Orphanage located at Nanzhou Township in Pingtung County and donated materials and money from the division as well as the materials collected by chairperson Hsu in Taipei to support them.



Over the years, CPC has responded to the service philosophy of "donating blood to save lives" at blood donation centers nationwide and regularly organize blood donation activities annually. As of April, 2014, the total number of people donating blood reached 3,070 while the volume of blood donated reached 1,042,000 cc.



In 2014, the tree planting activity was different from the past. We added the "three generations joint planting" spirit, hoping to pass down the concept of environmental protection and caring for the Earth from generation to generation, and to truly implement carbon reduction, energy conservation for the earth.



After the successful Clean-up Activity at the beach and in the mountains in spring and autumn in 2013, CPC once again organized the "Care for the nature, clean our earth" activity on May 10, 2014. It was held in 10 places in Taiwan, including Taipei, Taoyuan, Hsinchu, Miaoli, Taichung, Chiayi, Tainan, Kaohsiung and Hualien.

## 03 Heartfelt Gratitude



In order to promote the sales of onions, Linyuan District Office and CPC Petrochemical Business Division co-organized an Onion Festival, “2014 promotional activity to promote onions as well as the health in the community” on February 22, 2014 at the plaza in the night market in Linyuan District.



To care for the disadvantaged and to fulfill our corporate social responsibility, the Women Association in Dalin Refinery visited the Christian Mountain Children’s House in Liouguei District in the morning on May 24, 2014 to send their care and condolences, using actual actions to show our concern and feedback to the community.



To care those losing parents and those intellectually challenged and to fulfill our corporate social responsibility, Quanling Wu, Vice Chairperson of the Women Association from HQ (also President Paul, Lie-Way Chen’s wife), and Li-cong Wu, Chairperson of Women Association in Kaohsiung Refinery led more than 20 members to visit Bethany Home in Pingtung to express our concern and presented livelihood supplies to send warmth and love.



The Green Giant Dragon Creativity Summer Camp in 2013 received praises. On July 21, 2014, CPC once again launched the summer camp to lead the children to “Meet the Future”.



CPC has long been creating a “Restroom culture”, and the staff and managers at all levels attach great importance on the environment cleaning and maintenance of the restrooms. Our “Restroom culture” is our commitment to all our consumers for a delicate and quality service (excellent restrooms).



At the time when all the people in Taiwan were worrying about the food safety issues and when the government agencies were racking their brains, CPC, as a state-owned enterprise and the leading energy corporation, integrated the upstream, midstream and downstream companies in the overall oil supply chain and invited the biomass energy firms and food industry operators to jointly set up a reliable platform for the disposal of waste cooking oil.



## Friendly Relationship with the Community

In addition to the social care activities, CPC also constantly strengthens the establishment of coexistence and co-prosperity with the local communities. For years, we have been continuously and actively working on feeding back to the residents, helping local development, sponsoring cultural and educational activities, providing emergency assistance, greening the community, providing jobs to local residents, encouraging subcontractors to hiring locals, and inviting residents join the community networking.



The Petrochemical Division has long been caring for Linyuan District. In 2014, we made contributions or donations in 630 cases, including personal emergency assistance, passing-warmth projects to low-income families in winter, subsidies to children's tuition and to the disadvantaged groups, school facilities and environment improvement and grants to local construction projects. It shows our emphasis on children's education and how much we value the co-prosperity and coexistence with the local community. Moreover, we also actively sponsor cultural and creative activities and participate in related activities so as to enhance CPC's corporate image.



2014/3/8  
Tree Planting Activity



2014/6/3  
Signing ceremony with  
Chemical Science  
Classes of Linyuan High  
School



2014/7/1  
Recognition Ceremony  
on Fishermen Festival  
at Linyuan District



2014/7/12  
Good Neighborliness  
Cup held by the Pet-  
rochemical Business  
Division



2014/7/21  
Green Giant Dragon  
Summer Camp



2014/8/13  
Donated books entitled  
"Seeing Linyuan" to  
schools



2014/8/25  
The Chemical Science  
class in Linyuan High  
School under the Indus-  
try-Academia Collabo-  
ration project visited the  
Petrochemical Business  
Division



2014/9/29  
"Petrochemical Heart,  
Linyuan Love" Exhibi-  
tion at the Arc Exhibition  
Hall in Petrochemical  
Business Division



2014/9/29  
"Petrochemical Heart,  
Linyuan Love" Exhibi-  
tion at the Arc Exhibition  
Hall in Petrochemical  
Business Division



2014/10/18  
Occupational Safety  
Cup Softball Game



2014/10/24  
Opening ceremony of  
the Yu Gang Road at  
the Jhongyun Fishing  
Port



2014/12/20  
Year end "Care for the  
planet, clean the earth"  
mountain cleaning activ-  
ity (Guanyin Mountain)

### 3.5.2 Lively and Happy Homeland

For new investment plan, we will describe clearly the purpose, the content and the impact on the environment, which include physical and chemical ones (weather and air quality, noise and vibration, hydrology and water quality, soil, waste, landform and geology), eco-environment (terrestrial and aquatic), social economic environment (population and employment, land utilization and local development), transportation, cultural environment, and other public concerned issues. CPC predicts the above possible impacts on the entire environment and seek for policy and management plans to reduce or avoid the impacts and promise to the locals with a lively, clean and happy homeland.

Impacts of Major Projects on Local Communities in Recent Years		
Engineering Project	Scale, Cost, and Duration	Positive and Negative Impacts on Local Communities
<b>Investment Plan of the 10th Sulfur Workshop</b>	Construction of a sulfur workshop with the capacity of processing 250 tons of sulfur per day, with the total investment of NT\$ 6.66 billion. The construction period was from July 2010 to June 2014.	Process the hydrogen sulfide and acid gas generated during hydrodesulfurization to improve the gasoline, diesel and fuel oil quality in order to purify the air in the city.
<b>Investment Plan for the Replacement of Distillation in Dalin Refinery and Related Workshops</b>	Construction of a refining distillation unit with the capacity of 150,000 barrels a day, a condensed oil processing unit with the capacity of 50,000 barrels a day, a diesel hydrodesulfurization unit with the capacity of 40,000 barrels a day, and a Kerosene hydrodesulfurization unit with the capacity of 30,000 barrels a day. The total investment is NT\$ 20.5 billion. The construction period is from July 2011 to June 2017.	Consolidate CPC's oil and petrochemical market, enhance the overall refining capacity and efficiency and scale to support the naphtha feed in Dalin and Linyuan Refineries so as to cope with the increasing stringent environmental regulations and to provide environmentally friendly fuels.
<b>Phase II Investment Plan of Taichung Plant in Natural Gas Business Division</b>	Construction of 3 160,000 kl ground-type LNG storage tanks, 300 tons per hour gasification facility and 21.8 km offshore pipeline project, with the total investment of NT\$ 18.5 billion. The construction period is from July 2012 to December 2018.	To supply for the increasing natural gas demand, the increased the turnover days for the reservoir capacity and to improve the stability and safety of natural gas supply for the expansion project of Tunghsiao Power Plant of Taiwan Power Company and the increased plant unit capacity in Ta-Tan Power Plant, so that Taiwan Power Company can provide more stable electricity supply and further promote the economic development.
<b>Investment Plan of the Replacement of NO. 1 Seabed and Offshore Crude Oil Pipelines at Shalun in Taoyuan Refinery</b>	Replace the No. 1 seabed and offshore pipelines and ancillary facilities (including 4,725 meters of seabed pipelines and 950 meters of offshore pipelines), with the total investment of NT\$ 1.4 billion. The construction period was from July 2011 to December 2013. Due to the weather conditions and public protests, the trial of the pipelines was postponed to July, 2014.	Reduce the risk of pipeline damage and protect the environment and ecology of the relevant sea while improving the reliability of CPC's Shalun crude oil storage system so as to ensure the normal production of the refining workshop at Taoyuan Refinery, maintaining a stable supply to the northern market.
<b>Replacement Project of Domestic Bunker Barge</b>	From July 2014 to December 2017, 5 old single-hull bunker barges are scheduled to be replaced with new double-hull ones.	The new bunker barges has a double-hull design and are with new oily water monitoring and treatment system that can effectively reduce the discharge and emission of pollutants from the barges or any risk of contamination caused by accidents. This can protect the environment and ecology of the harbor and improve the liability of fuel supply at the ports, enhancing the service quality of the port while promoting the local economic development.





## Decommission of Kaohsiung Refinery

Since Naphtha Cracker #5 began construction in 1991, Kaohsiung Refinery has been implementing the 25-year relocation plan and we promise to complete the relocation by 2015. CPC has been working diligently and pragmatically on the relocation plan, including refining production adjustment, handling the existing facility, and the redevelopment of the Kaohsiung Refinery land. In 2014, the remaining operation in the workshop only include the #8 distillation, #2 VGO desulfurization, #7 hydrodesulfurization, #2 low-sulfur fuel, hydrogen, sulfur, and public storage and transportation. The rest of refining devices and equipment have been discontinued as scheduled.



## 2014 Public Protests and Demonstrations

To all the protests and demonstrations in regard to our operation and management, CPC would heartedly work on investigation, inspection and improvement, and actively communicate with the locals to prevent any similar incidents from happening. In 2014, there were 45 incidents that needed coordination and communication. Major incidents are detailed below.

Time Year/ Month/Day	Unit	Incident Description	Follow-up Improvement Measures
2014/04/22	Kaohsiung Refinery, Refining Business division	The circuit board of the static transfer switch in the UPS1 at Naphtha Cracker #5 failed, causing large amount of emission of the Flare, resulting in flame and smoke. Each workshop at Naphtha Cracker #5 immediately followed the safety procedures and conducted emergency shutdown.	<ol style="list-style-type: none"> <li>1.The preliminary investigation decided that the cause should be device problems, not human error.</li> <li>2.Arrange education and training for relevant personnel.</li> <li>3.Gather relevant departments to set up a proper maintenance plan before critical equipment maintenance.</li> <li>4.Replace Rectifier A or Converter B when they fail.</li> <li>5.Set up the Maintenance Operation Work Instruction (WI) of the UPS.</li> </ol>
2014/10/28	Kaohsiung Refinery, Refining Business division	In the construction work for underground railway on Qing Nian Road in Fengshan District under the Reconstruction Project of MOTC, the 10-inch aviation fuel pipeline (DP-10-J) for Kaohsiung-Dalin Refinery section was accidentally ruptured.	<ol style="list-style-type: none"> <li>1.Deputy Director and Deputy Executive Director should be informed before the joint site investigation of major construction work.</li> <li>2.The competent authorities for two sides should send director-level personnel to participate in the site investigation, and precautions for constructions as well as signatures should be recorded to avoid verbal information only.</li> <li>3.The Engineering Services Group should establish the SOP for site investigation and implement training.</li> <li>4.The site investigation should be executed in accordance with the SOP.</li> </ol>
2014/5/21	Taoyuan Refinery, Refining Business division	The treatment of oily wastewater was overwhelmed because of the heavy rain, causing minor contamination on the Hou Shi Street in Luzhu Township.	<ol style="list-style-type: none"> <li>1.When the overflow was found on May 21, 2014, oil-absorbing cotton was used at the outlet of the storm sewer system to prevent the floating oil from flowing outside the plant. Tankers were also sent to withdraw the oily wastewater for treatment.</li> <li>2.The EPA of Taoyuan County issued a letter of accusation on May 27, 2014, and after the appeal from Taoyuan Refinery on June 4, 2014, EPA of Taoyuan County finally decided no penalty on June 27, 2014.</li> </ol>

Time Year/ Month/Day	Unit	Incident Description	Follow-up Improvement Measures
2014/8/19	Taoyuan Refinery, Refining Business division	After the Kaohsiung Gas Explosion incident, issues of the pipeline maintenance have received much attention. Some people reported strong gas smell at No. 1731, Chunri Road and feared that would be another bomb for explosion.	After the on-site investigation conducted by staff from both CPC and Shintao Natural Gas and after the testing, there was no gas leak. It was just a false alarm.
2014/8/27	Taoyuan Refinery, Refining Business division	On August 26, some unknown smell of smoke and gas was found from underground gutter on Ming-te Road in Gwei Shan Township. Nearby residents and businesses worried a lot in view of the gas explosion incident in Kaohsiung that just happened, and they suspected that there might be some leak in the CPC-Gwei Shan Air Force Depot pipeline.	After the report to the police, firefighters, the police, EPA personnel and staff from Taoyuan Refinery rushed to the site and conducted thorough investigation. It was proved that there was no leak in the pipeline.
2014/8/28	Taoyuan Refinery, Refining Business division	Some weekly magazine reported that "there are dense petrochemical pipelines in New Taipei City Banciao District", and the DPP mayoral candidate criticized that the pipeline information of Taoyuan Refinery was not open to the public, and people's lives were insecure.	<ol style="list-style-type: none"> <li>1.In accordance to the provisions of the county government, all the mapping data of the pipelines are included in the county-owned pipeline map for centralized management.</li> <li>2.Deputy Director Zeng stated to the media that the pipelines of Toayuan Refinery were installed in 1975, 1987, 1994, and 2008, and they are in good conditions. The inspection of pipelines is in full compliance with the US standards. In accordance with the regulations, there will be potential tests every three months and close-interval polarization potential survey is conducted every 5 years.</li> </ol>



NT\$366million

In 2014, the money spent on social care reaches NT\$ 366 million.

### 3.5.3 Social Care Expenditure

CPC has been striving for environmental protection and caring for underprivileged groups, leading the enterprises to improve industrial safety. We participate in social welfare, sponsor young and potential athletes and local cultural activities, help neighborhood area development, work on eco-preservation, push for tree planting and greening, care about the culture of the local area, broaden the environmental education, and make efforts to promote local development and prosperity.

To repay in the community welfare construction, we actively participate in and sponsor charity activity, neighborhood relation building up, and sponsoring for private organization and persons. CPC also established a special committee to strictly check and audit all of the process. For the content of the activity and the verification process, we also have the proper checking and auditing procedures. In 2014, the expenditure on these social care activities reached NT\$ 366 million. CPC has been upholding the neutral position on public policies, and has never involved in any lobbying.

Social Care Expenditure			
	Unit: NT\$		
Item	2012	2013	2014
Education and culture	24,365,310	49,137,472	20,178,641
Scholarship	2,202,997	1,697,466	267,000
Emergency assistance	4,961,000	2,954,000	2,935,000
Helping low-income families	7,161,753	3,494,214	7,450,972
Welfare facilities for elders and physically challenged	40,979,484	44,210,593	35,303,101
Other charity activities or local construction	418,749,683	365,438,860	299,875,803
<b>Total</b>	<b>498,420,228</b>	<b>466,932,605</b>	<b>366,010,517</b>

### 3.5.4 Participation of Association and Organization

All CPC divisions and departments actively join domestic or international business related associations or organizations, such as Taiwan Petroleum Worker Union (TPWU), John Tung Foundation, World Vision Taiwan, Women's Federation for World Peace-Taiwan R.O.C., Sino-Arabian Culture & Economic Association, Sino-Indonesia Cultural and Economic Association, Chinese Alternative Energy Association, Social Enterprise Innovation and Entrepreneurship Association-Taiwan, Chou Ta-Kuan Foundation, Chinese Petroleum Institute, WBCSD, Chinese Association for Energy Economics (CAEE) R.O.C., BCSD-Taiwan, Association of Industry for Environmental Protection R.O.C., Taiwan Responsible Care Association, Taiwan Association of Marine Pollution Control, Taiwan Climate Change and Sustainable Energy Association, Taiwan Carbon Association, Middle East Business Association, Chinese Association for Industrial Technology Advancement, Taiwan Institute of Chemical Engineers, Taiwan Fuel Cell Partnership, Taiwan Chemical Industry Association, Taiwan Ocean Academia-Industry Consortium and other over one hundred associations and societies.

### 3.5.5 2014 Awards and Honors

Category	Description
Social Responsibility	CPC CSR 2014 won the Taiwan CSR Rewards from Taiwan Institute for Sustainable Energy (TAISE) and won the Gold Award in large traditional manufacturing enterprise group and the "Innovation Growth Award" in Enterprise Sustainability Performance Award.
	From July 2013 to April 2014, CPC initiated the "Long-term Blood Donation, Passion of Million cc" Activity.
	Initiated the "Three-Generation Joint Planting" activity to implement energy conservation and carbon reduction for the beloved Earth.
	Obtained the certificate of appreciation from the Rare Disease Foundation for "donation to help rare diseases".
	Sponsored in the baseball themed movie premiere of KANO and was presented the bronze KANO handmade by artist Hao-ming Pu by Chiayi City Government.
	Joined "The house filled with happiness – goods bank" activity of New Taipei City government to benefit underprivileged people.
	Awarded the "Merit Medal for industry-academy cooperation" by Chinese Institute of Engineers.
	Awarded "Fostering Talent for the Country" by Kaohsiung City Government for the pilot program of industry-academy cooperation project with the Chemical Science Class in Linyuan High School.
	Awarded the Public Appreciation Plaque for "supporting and purchasing from shelter workshops" by New Taipei City Government.
Obtained the certificate of appreciation from Friends of Daan Forest Park Foundation for assisting the organization of "Mosquito Ecology and Control Seminar-A Case Study of Daan Forest Park".	

Category	Description
<b>Service Contribution</b>	Eco-friendly Laundry Liquid was awarded “the 11th National Brand Yushan Award”.
	Dazhi Gas Station won No. 1 among the listed gas stations with restrooms in Taipei City for the 9th consecutive year.
	“Top Service Awards” in gas stations and service industry for the 9th consecutive time, Next Magazine.
	1st place in gas station of “2014 Consumers Ideal Brand”, Management Magazine.
	Station Head Yu at Chianan Branch won “Outstanding Manager” awarded by TCFA.
	1st place in gas station of “2014 Consumers Ideal Best Survey”, Management Magazine.
	Awarded by Common Wealth Magazine for “Gold Service Award”: Gold medal in the utilities category.
	Awarded the Sustainable Management Practices Award by BSI.
	Awarded the Public Appreciation Plaque for “promoting the trading payment clearing mechanism between Taiwan and Iran to overcome the difficulty of severe international sanctions against Iran, benefiting Taiwanese businesses” by Taiwan Iran Business Association.
	Bureau of Standards, Metrology & Inspection, MOEA presented the “Certificate of Recognition” for more than 5 decades of CNS Mark promotion and for CPC’s great contributions.
	Obtained the Appreciation Plaque for supporting the Tong-Shin 26 exercise.
	CPC gas stations launched “promotional events assisting farmers to sell vegetables” and CPC was presented the Appreciation Plaque for “Contributions in Agriculture” by Taipei Agricultural Products Marketing co. in 2014.
	Presented the Appreciation Plate for “providing long-term clean and quality cold seawater, benefiting local fishermen” by Fishery Agency, COA.
<b>Occupational Safety and Health</b>	The PV system in CPC’s Linluo Station in Pingtung was selected and granted the first “Excellent PV system Award”.
	Keelung Storage and Transportation Division won the Bronze Award of the 2013 Annual Enterprises Environmental Protection Award.
	Won the 2013 Award in Best Workplace Safety Unit and Personnel among MOEA-owned Enterprises.
	Won the 2013 Best Labor Safety and Health Unit and Personnel from Ministry of Labor.
	CPC HQ won the Excellence Award in “The 3rd Taipei City Environmental Education Award”.
	Dalin Refinery in the Refining Business Division was awarded “2014 Excellent Adoption Unit for air quality purification zone” by EPA, Executive Yuan.
	Refining & Manufacturing Research Institute was awarded “2014 Outstanding Award for toxic chemical substances management, research and improvement group” by EPA, Executive Yuan.
	Gas stations at Gushan 3rd Road and Cheng-gong 1st Road obtained the “2014 Kaohsiung City Environmentally Friendly Certification Mark”.
	Yi Cheng Gas Station and Gung Ming Station in Hsinchu City were awarded Excellent Gas Station for “oil and gas recovery prevention efficacy and staff’s accurate refueling competition”.
	Won the Award of 2013 Excellent Unit for Labor Safety and Health Promotion by Kaohsiung City Government, Taichung City Government, Taoyuan County Government and Ministry of Labor.
	Taichung LNG Plant was granted 2014 Golden Vessel Award by TIPC for contributions in environmental protection.
Obtained the Appreciation Plaque for “full support for the 2014 Quit & Win charity activity” from John Tung Foundation.	
<b>Engineering Quality</b>	Granted 14th Public Construction Commission Golden Quality Award, special excellence in facility category, “Construction of # 10 Sulfur Workshop, Dalin Refinery.
	MOEA’s Excellent Quality in Public Engineering, 2013, “New Plant Construction, #6 Naphtha Cracker”.
	MOEA’s Excellent Quality in Public Engineering, for the R-06 fuel tank repair work organized by Dalin Refinery.



# Appendix





# Appendix I : GRI G4 Index

Category / Aspect	G4/ Notes	GRI Index	Related CSR Report Section	Page(s)
<b>1. STRATEGY AND ANALYSIS</b>				
Core	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	1
Comprehensive	G4-2	Provide a description of key impacts, risks, and opportunities.	Our Ultimate Commitment 1.3.5	1 25
<b>2. ORGANIZATIONAL PROFILE</b>				
Core	G4-3	Report the name of the organization.	1.1.2	8
Core	G4-4	Report the primary brands, products, and services.	1.1.2	8
Core	G4-5	Report the location of the organization's headquarters.	1.1.2	8
Core	G4-6	Report the number of countries where the organization operates.	1.1.3 1.2.2	11 13
Core	G4-7	Report the nature of ownership and legal form.	1.1.2	8
Core	G4-8	Report the markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries).	1.1.3	11
Core	G4-9	Report the scale of the organization	1.1.2 1.2.2	8 13
Core	G4-10	The total number of employees	3.4.2	91
Core	G4-11	Report the percentage of total employees covered by collective bargaining agreements.	3.4.1	90
Core	G4-12	Describe the organization's supply chain.	3.2.1	78
Core	G4-13	Report any significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain.	1.1.2	8
Core	G4-14	Report whether and how the precautionary approach or principle is addressed by the organization.	1.3.5	25
Core	G4-15	List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses.	About This Report 2.1.1	3 48
Core	G4-16	List memberships of associations (such as industry associations) and national or international advocacy organizations in which the organization	3.5.4	102
<b>3. IDENTIFIED MATERIAL ASPECTS AND BOUNDARIES</b>				
Core	G4-17	a. List all entities included in the organization's consolidated financial statements or equivalent documents. b. Report whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report.	1.2.4	17
Core	G4-18	a. Explain the process for defining the report content and the Aspect Boundaries. b. Explain how the organization has implemented the Reporting Principles for Defining Report Content.	About This Report 1.4.2	3 30
Core	G4-19	List all the material Aspects identified in the process for defining report content.	1.4.2	30
Core	G4-20	For each material Aspect, report the Aspect Boundary within the organization	1.4.2	30
Core	G4-21	For each material Aspect, report the Aspect Boundary outside the organization	1.4.2	30
Core	G4-22	Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements.	About This Report	3
Core	G4-23	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries.	About This Report	3
<b>4. STAKEHOLDER ENGAGEMENT</b>				
Core	G4-24	Provide a list of stakeholder groups engaged by the organization.	1.4	26
Core	G4-25	Report the basis for identification and selection of stakeholders with whom to engage.	1.4	26
Core	G4-26	Report the organization's approach to stakeholder engagement	1.3.4 1.4.1	25 27
Core	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	27
<b>5. REPORT PROFILE</b>				
Core	G4-28	Reporting period (such as fiscal or calendar year) for information provided.	About This Report	3
Core	G4-29	Date of most recent previous report (if any).	About This Report	3
Core	G4-30	Reporting cycle (such as annual, biennial).	About This Report	3
Core	G4-31	Provide the contact point for questions regarding the report or its contents.	About This Report	3
Core	G4-32	a. Report the 'in accordance' option the organization has chosen. b. Report the GRI Content Index for the chosen option (see tables below). c. Report the reference to the external assurance report.	About This Report	3
Core	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.	About This Report	3

Category / Aspect	G4/ Notes	GRI Index	Related CSR Report Section	Page(s)
<b>6.GOVERNANCE</b>				
Core	G4-34	Report the governance structure of the organization, including committees of the highest governance body.	1.3.1 1.3.3	18 24
Comprehensive	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.	1.3.1 1.3.3	18 24
Comprehensive	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.	1.3.1 1.3.3	18 24
Comprehensive	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	18
Comprehensive	G4-38	Report the composition of the highest governance body and its committees	1.3.1	18
Comprehensive	G4-39	Report whether the Chair of the highest governance body is also an executive officer (and, if so, his or her function within the organization's management and the reasons for this arrangement).	1.3.1	18
Comprehensive	G4-40	Report the nomination and selection processes for the highest governance body and its committees, and the criteria used for nominating and selecting highest governance body members	1.3.1	18
Comprehensive	G4-41	Report processes for the highest governance body to ensure conflicts of interest are avoided and managed.	1.3.1	18
Comprehensive	G4-42	Report the highest governance body's and senior executives' roles in the development, approval, and updating of the organization's purpose, value or mission statements, strategies, policies, and goals related to economic, environmental and social impacts.	1.3.1	18
Comprehensive	G4-43	Report the measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental and social topics.	1.3.1	18
Comprehensive	G4-44	a. Report the processes for evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics. b. Report actions taken in response to evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics, including, as a minimum, changes in membership and organizational practice.	1.3.1	18
Comprehensive	G4-45	a. Report the highest governance body's role in the identification and management of economic, environmental and social impacts, risks, and opportunities. Include the highest governance body's role in the implementation of due diligence processes. b. Report whether stakeholder consultation is used to support the highest governance body's identification and management of economic, environmental and social impacts, risks, and opportunities.	1.3.1	18
Comprehensive	G4-46	Report the highest governance body's role in reviewing the effectiveness of the organization's risk management processes for economic, environmental and social topics.	1.3.1	18
Comprehensive	G4-47	Report the frequency of the highest governance body's review of economic, environmental and social impacts, risks, and opportunities.	1.3.1	18
Comprehensive	G4-48	Report the highest committee or position that formally reviews and approves the organization's sustainability report and ensures that all material Aspects are covered.	About This Report	3
Comprehensive	G4-52	Report the process for determining remuneration. Report whether remuneration consultants are involved in determining remuneration and whether they are independent of management. Report any other relationships which the remuneration consultants have with the organization.	1.3.1	18
<b>7.ETHICS AND INTEGRITY</b>				
Core	G4-56	Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics.	1.1.1 1.3.2 2.1	6 23 47
Comprehensive	G4-57	Report the internal and external mechanisms for seeking advice on ethical and lawful behavior, and matters related to organizational integrity, such as helplines or advice lines.	1.3.2	23
Comprehensive	G4-58	Report the internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and matters related to organizational integrity, such as escalation through line management, whistleblowing mechanisms or hotlines.	1.3.2	23
<b>CATEGORY: ECONOMIC</b>				
Economic Performance	G4-DMA	Sector Specific Guidance for Economic Performance DMA	1.2	12
	G4-EC1	Direct economic value generated and distributed	1.2.1	12
	G4-EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	2.2.1	51
	G4-EC3	Coverage of the organization's defined benefit plan obligations	3.4.1	90
	G4-EC4	Financial assistance received from government	1.2.1	12
Market Presence	G4-DMA	Sector Specific Guidance for Market Presence DMA	3.4	89
	G4-EC6	Proportion of senior management hired from the local community at significant locations of operation	3.4.1	90
Indirect Economic Impacts	G4-DMA	Sector Specific Guidance for Indirect Economic Impacts DMA	3.5	95
	G4-EC7	Development and impact of infrastructure investments and services supported	3.1.2 3.5.2	77 99
	G4-EC8	Significant indirect economic impacts, including the extent of impacts	3.5.3	101
Procurement Practices	G4-DMA	Sector Specific Guidance for Procurement Practices DMA	3.2	78
	G4-EC9	Proportion of spending on local suppliers at significant locations of operation	3.2.1	78
<b>CATEGORY: ENVIRONMENTAL</b>				
Materials	G4-DMA	Sector Specific Guidance for Materials DMA	2.3	65
	G4-EN1	Materials used by weight or volume	2.3.4	68
	G4-EN2	Percentage of materials used that are recycled input materials	2.4	69
	G4-OG1	Volume and type of estimated proved reserves and production.	1.2.2	13

Category / Aspect	G4/ Notes	GRI Index	Related CSR Report Section	Page(s)
Energy	G4-DMA	Sector Specific Guidance for Energy DMA	2.2	51
	G4-EN3	Energy consumption within the organization	2.2.2	52
	G4-EN5	Energy intensity	2.1.2	49
			2.2.2	52
	G4-EN6	Reduction of energy consumption	2.2.2	52
			2.3.1	65
	G4-EN7	Reductions in energy requirements of products and services	2.2.2	52
2.3.1			65	
G4-OG2	Total amount invested in renewable energy.	1.2.3	16	
		2.5.2	71	
		2.5.3	72	
G4-OG3	Total amount of renewable energy generated by source.	2.5.4	73	
Water	G4-DMA	Sector Specific Guidance for Water DMA	2.1	47
	G4-EN8	Total water withdrawal by source	2.2.5	58
	G4-EN9	Water sources significantly affected by withdrawal of water	2.2.5	58
	G4-EN10	Percentage and total volume of water recycled and reused	2.2.6	58
Biodiversity	G4-DMA	Sector Specific Guidance for Biodiversity DMA	2.2	51
	G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	2.2.9	63
	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	2.2.9	63
	G4-EN13	Habitats protected or restored	2.2.9	63
	G4-EN14	Total number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk	2.2.9	63
	G4-OG4	Number and percentage of significant operating sites in which biodiversity risk has been assessed and monitored.	2.2.9	63
Emissions	G4-DMA	Sector Specific Guidance for Emissions DMA	2.2	51
	G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	2.2.3	54
	G4-EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2)	2.2.3	54
	G4-EN18	Greenhouse gas (GHG) emissions intensity	2.1.2	49
	G4-EN19	Reduction of greenhouse gas (GHG) emissions	2.2.3	54
	G4-EN21	NOx, SOx, and other significant air emissions	2.2.4	55
Effluents and Waste	G4-DMA	Sector Specific Guidance for Effluents and Waste DMA	2.2	51
	G4-EN22	Total water discharge by quality and destination	2.2.6	58
	G4-EN23	Total weight of waste by type and disposal method	2.2.7	61
	G4-EN24	Total number and volume of significant spills	3.5.2	99
	G4-EN25	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention <sup>2</sup> Annex I, II, III, and VIII, and percentage of transported waste shipped internationally	2.2.8	62
	G4-EN26	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff	2.2.6	58
	G4-OG5	Volume and disposal of formation or produced water.	2.2.6	58
	G4-OG6	Volume of flared and vented hydrocarbon.	2.2.4	55
Products and Services	G4-OG7	Amount of drilling waste (drill mud and cuttings ) and strategies for treatment and disposal.	2.2.7	61
	G4-DMA	Sector Specific Guidance for Products and Services DMA	2.4	69
	G4-EN27	Extent of impact mitigation of environmental impacts of products and services	1.2.3	16
2.5.1			70	
Compliance	G4-OG8	Benzene, lead and sulfur content in fuels.	2.2.4	55
Transport	G4-DMA	Sector Specific Guidance for Compliance DMA	2.1	47
	G4-EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	2.1	47
Overall	G4-DMA	Sector Specific Guidance for Transport DMA	2.4	69
	G4-EN30	Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce	Special Edition 1	35
			Special Edition 2	41
Supplier Environmental Assessment	G4-DMA	Sector Specific Guidance for Overall DMA	2.1	47
	G4-EN31	Total environmental protection expenditures and investments by type	2.1.2	49
Environmental Grievance Mechanisms	G4-DMA	Sector Specific Guidance for Supplier Environmental Assessment Overall DMA	3.2	79
	G4-EN32	Percentage of new suppliers that were screened using environmental criteria	3.2.2	79
			3.2.4	79
G4-EN33	Significant actual and potential negative environmental impacts in the supply chain and actions taken	3.2.4	79	
Employment	G4-DMA	Sector Specific Guidance for Environmental Grievance Mechanisms DMA	1.4	26
	G4-EN34	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms	1.4.1	27
<b>LABOR PRACTICES AND DECENT WORK</b>				
Employment	G4-DMA	Sector Specific Guidance for Employment DMA	3.4	89
	G4-LA1	Total number and rates of new employee hires and employee turnover by age group, gender, and region	3.4.2	91



Category / Aspect	G4/ Notes	GRI Index	Related CSR Report Section	Page(s)
Employment	G4-LA2	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation	3.4.4	95
	G4-LA3	Return to work and retention rates after parental leave, by gender	3.4.1	90
Labor/Management Relations	G4-DMA	Sector Specific Guidance for Labor/Management Relations DMA	3.4	89
	G4-LA4	Minimum notice periods regarding operational changes, including whether these are specified in collective agreements	3.4.1	90
Occupational Health and Safety	G4-DMA	Sector Specific Guidance for Occupational Health and Safety DMA	3.3	81
	G4-LA5	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs	3.3.2	82
	G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender	3.3.4	86
	G4-LA7	Workers with high incidence or high risk of diseases related to their occupation	3.3.4 3.3.5	86 88
	G4-LA8	Health and safety topics covered in formal agreements with trade unions	3.3.2	82
Training and Education	G4-DMA	Sector Specific Guidance for Training and Education DMA	3.4	89
	G4-LA9	Average hours of training per year per employee by gender, and by employee category	3.3.3 3.4.3	85 93
	G4-LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	3.4.3	93
	G4-LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	3.4.3	93
Diversity and Equal Opportunity	G4-DMA	Sector Specific Guidance for Diversity and Equal Opportunity DMA	3.4	89
	G4-LA12	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity	3.4.1	90
Equal Remuneration for Women and Men	G4-DMA	Sector Specific Guidance for Equal Remuneration for Women and Men DMA	3.4	89
	G4-LA13	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation	3.4.1	90
Supplier Assessment for Labor Practices	G4-DMA	Sector Specific Guidance for Supplier Assessment for Labor Practices DMA	3.2	78
	G4-LA14	Percentage of new suppliers that were screened using labor practices criteria	3.2.2 3.2.4	79 79
	G4-LA15	Significant actual and potential negative impacts for labor practices in the supply chain and actions taken	3.2.4	79
Labor Practices Grievance Mechanisms	G4-DMA	Sector Specific Guidance for Labor Practices Grievance Mechanisms DMA	1.4	26
	G4-LA16	Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms	1.4.1	27
<b>HUMAN RIGHTS</b>				
Investment	G4-DMA	Sector Specific Guidance for Investment DMA	3.2	78
	G4-HR1	Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	3.2.2	79
	G4-HR2	Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained	3.4.1 3.4.3	90 93
Non-discrimination	G4-DMA	Sector Specific Guidance for Non-discrimination DMA	3.4	89
	G4-HR3	Total number of incidents of discrimination and corrective actions taken	3.4.1 3.4.2	90 91
Freedom of Association and Collective Bargaining	G4-DMA	Sector Specific Guidance for Freedom of Association and Collective Bargaining DMA	3.4	89
	G4-HR4	Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights	3.2.2 3.2.4 3.4.1	79 79 90
Child Labor	G4-DMA	Sector Specific Guidance for Child Labor DMA	3.4	89
	G4-HR5	Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor	3.2.2	79
			3.2.4	79
3.4.1 3.4.2			90 91	
Forced or Compulsory Labor	G4-DMA	Sector Specific Guidance for Forced or Compulsory Labor DMA	3.4	89
	G4-HR6	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor	3.2.2	79
			3.2.4	79
3.4.1			90	
Security Practices	G4-DMA	Sector Specific Guidance for Security Practices DMA	3.3	81
	G4-HR7	Percentage of security personnel trained in the organization's human rights policies or procedures that are relevant to operations	3.3.2	82
Indigenous Rights	G4-DMA	Sector Specific Guidance for Indigenous Rights DMA	3.4	89
	G4-HR8	Total number of incidents of violations involving rights of indigenous peoples and actions taken	3.4.1	90
	G4-OG9	Operations where indigenous communities are present or affected by activities and where specific engagement strategies are in place.	3.4.1	90
Supplier Human Rights Assessment	G4-DMA	Sector Specific Guidance for Supplier Human Rights Assessment DMA	3.2	78
	G4-HR10	Percentage of new suppliers that were screened using human rights criteria	3.2.2	79
			3.2.4	79
G4-HR11	Significant actual and potential negative human rights impacts in the supply chain and actions taken	3.2.4	79	
Human Rights Grievance Mechanisms	G4-DMA	Sector Specific Guidance for Human Rights Grievance Mechanisms DMA	1.4	26
	G4-HR12	Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms	1.4.1	27

Category / Aspect	G4/ Notes	GRI Index	Related CSR Report Section	Page(s)
<b>SOCIETY</b>				
Local Communities	G4-DMA	Sector Specific Guidance for Local Communities DMA	3.5	95
	G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	2.2.10	64
	G4-SO2	Operations with significant actual or potential negative impacts on local communities	2.2.10	64
	G4-OG10	Number and description of significant disputes with local communities and indigenous peoples.	3.5.2	99
	G4-OG11	Number of sites that have been decommissioned and sites that are in the process of being decommissioned.	3.5.2 *CPC Corp. does not have any decommissioning plan for the mining fields in 2014.	99
Property integrity and safety drills	G4-DMA	Sector Specific Guidance for Property integrity and safety drills DMA	3.3	81
	G4-OG13	Number of process safety events, by business activity.	3.3.2	82
Anti-corruption	G4-DMA	Sector Specific Guidance for Anti-corruption DMA	1.3	18
	G4-SO3	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified	1.3.2	23
	G4-SO4	Communication and training on anti-corruption policies and procedures	1.3.2	23
			3.4.3	93
G4-SO5	Confirmed incidents of corruption and actions taken	1.3.2	23	
Public Policy	G4-DMA	Sector Specific Guidance for Public Policy DMA	1.3	18
	G4-SO6	Total value of political contributions by country and recipient/beneficiary	1.3.2	23
3.5.3			101	
Anti-competitive Behavior	G4-SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	3.1.1	76
Compliance	G4-DMA	Sector Specific Guidance for Compliance DMA	1.3	18
	G4-SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	1.3.2	23
Supplier Assessment for Impacts on Society	G4-DMA	Sector Specific Guidance for Supplier Assessment for Impacts on Society DMA	3.2	78
	G4-SO9	Percentage of new suppliers that were screened using criteria for impacts on society	3.2.2	79
			3.2.4	79
G4-SO10	Significant actual and potential negative impacts on society in the supply chain and actions taken	3.2.4	79	
Grievance Mechanisms for Impacts on Society	G4-DMA	Sector Specific Guidance for Grievance Mechanisms for Impacts on Society DMA	1.4	26
	G4-SO11	Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms	1.4.1	27
<b>PRODUCT RESPONSIBILITY</b>				
Customer Health and Safety	G4-DMA	Sector Specific Guidance for Customer Health and Safety DMA	2.4	69
	G4-PR1	Percentage of significant product and service categories for which health and safety impacts are assessed for improvement	2.4	69
	G4-PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes	2.4	69
Fossil fuel substitute	G4-DMA	Sector Specific Guidance for Fossil fuel substitute DMA	2.5	70
	G4-OG14	Volume of biofuels produced and purchased meeting sustainability criteria.	2.5.3	72
Product and Service Labeling	G4-DMA	Sector Specific Guidance for Product and Service Labeling DMA	2.4	69
	G4-PR3	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 requirements	2.4	69
	G4-PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes	2.4	69
	G4-PR5	Results of surveys measuring customer satisfaction	3.1.3	78
Marketing Communications	G4-DMA	Sector Specific Guidance for Marketing Communications DMA	3.1	76
	G4-PR6	Sale of banned or disputed products	3.1.1	76
	G4-PR7	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	76
Customer Privacy	G4-DMA	Sector Specific Guidance for Customer Privacy DMA	3.1	76
	G4-PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	3.1.3	78
Compliance	G4-DMA	Sector Specific Guidance for Compliance DMA	3.1	76
	G4-PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	2.4 3.1.1	69 76

## Appendix II : Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Corporate Social Responsibility Reports by TWSE Listed Companies

Item 2 of Article 4	Related CSR Report Section	Page(s)
Listed companies within the chemical industry shall disclose the specific effective mechanism and actions that the listed companies and their supply chains adopt to decrease the negative impact of their products, activities, or services on the environment, to protect the personnel's vocational health and safety and the interested public's lives and property security. The disclosure shall include at least the management of the production or delivery of the raw material, supplies, end products, emergency response measures against accidents inside and outside the factories and the relevant performance indicator.	2.2.1	51
	2.4	69
	3.3.2	82
	Special Edition 1	35
	Special Edition 2	41

## Appendix III : United Nation Global Compact Comparison Table

NO.	10 Principles	Related CSR Report Section
1.Human Rights	Businesses should support and respect the protection of internationally proclaimed human rights	3.2
	Make sure that they are not complicit in human rights abuses	3.4
2.Labor	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	3.4
	The elimination of all forms of forced and compulsory labor	3.4
	The effective abolition of child labor	3.4
	The elimination of discrimination in respect of employment and occupation	3.4
3.Environment	Businesses should support a precautionary approach to environmental challenges	2.1
	Undertake initiatives to promote greater environmental responsibility	2.2
	Encourage the development and diffusion of environmentally friendly technologies	2.5
4. Anti-Corruption	Businesses should work against corruption in all its forms , including extortion and bribery	1.3

## Appendix IV : ISO26000 Index

NO.	Core Subjects and Issues	Related CSR Report Section	
1.Organizational governance	1.1 Decision-making processes and structures	1.3	
	2.1 Due diligence	3.4	
2.Human rights	2.2 Human rights risk situations	3.2	
	2.3 Avoidance of complicity	3.4	
	2.4 Resolving grievances	1.4	
	2.5 Discrimination and vulnerable groups	3.4	
	2.6 Civil and political rights	3.4	
	2.7 Economic , social and cultural rights	3.4	
	2.8 Fundamental principles and rights at work	3.4	
	3.1 Employment and employment relationships	3.4	
3.Labor practices	3.2 Conditions of work and social protection	3.3	
	3.3 Social dialogue	3.3	
	3.4 Health and safety at work	3.3	
	3.5 Human development and training in the workplace	3.3	
4.The environment	4.1 Prevention of pollution	2.2	
	4.2 Sustainable resource use	2.5	
	4.3 Climate change mitigation and adaptation	2.1	
	4.4 Protection of the environment , biodiversity and restoration of natural habitats	2.2	
5.Fair operating practices	5.1 Anti-corruption	1.3	
	5.2 Responsible political involvement	1.3	
	5.3 Fair competition	3.1	
	5.4 Promoting social responsibility in the value chain	3.2	
	5.5 Respect for property rights	3.1	
	6.1 Fair marketing , factual and unbiased information and fair contractual practices	3.1	
	6.2 Protecting consumers'health and safety	2.4	
6.Consumer issues	6.3 Sustainable consumption	2.4	
	6.4 Consumer service , support , and complaint and dispute resolution	1.4	
	6.5 Consumer data protection and privacy	3.1	
	6.6 Access to essential services	3.1	
	6.7 Education and awareness	3.1	
	7.Community involvement and development	7.1 Community involvement	3.5
		7.2 Education and culture	3.5
7.3 Employment creation and skills development		1.2	
7.4 Technology development and access		1.2	
7.5 Wealth and income creation		1.2	
7.6 Health		3.5	
7.7 Social investment		3.5	

## Appendix V : Assurance Statement

### INDEPENDENT ASSURANCE OPINION STATEMENT

#### CPC Corporation, Taiwan 2015 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 and focus on systems and activities during the 2014 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 2015 Corporate Sustainability Report provides a fair view of the CPC Corporation CSR programmes and performances during 2014. We believe that the 2014 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.
- 25 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, however, the future report should be further enhanced by the following areas:

- Continually watch latest development for sustainability to correspond in society's needs for future reporting.

### **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, however, the future report should be further enhanced by the following areas:

- Encouraging during the materiality identification process, it may consider international peers' practices in dealing CSR risks.

### **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 the 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 the 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.



*Peter Pu*  
Managing Director BSI Taiwan  
16 June, 2015



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