



นวัตกรรม
สร้างอนาคต
INNOVATION
CREATES
THE NEXT



Contents

002	President and CEO Statement
004	Our Business
016	Report Introduction
020	Sustainable Governance
046	Our Priorities
	• Supply Chain Management
	• Product Stewardship
	• Climate Change
	• People
	• Operational Excellence
	• Capital Project Management
	• Corporate Citizenship
111	Performance Summary
127	Awards and Recognition
129	GRI Content Index and UNGC Principles COP
135	Assurance Statement

As the world faces greater challenges, yet with resource limitation, the promotion of energy efficiency, innovation creation, and technological breakthroughs are viable tools to keep our world in balance – meaning business growth hand in hand with better lives, economies, and surroundings.

That is why PTT Group constantly seeks better solutions while pursuing ways to incorporate Thai wisdom with academia so as to create new knowledge.

All these to drive Thailand for better and more secure tomorrow.

INNOVATION

SUSTAINABLE



Mr. Pailin Chuchottaworn

President & CEO

CEO Statement

The energy business has become more challenging over years. Securing energy supply from increasing limited sources to meet demand for energy needed to support population and economic growth is more competitive than ever. In addition, climate change issues are becoming more severe. In response to these challenges, PTT has set a strategic vision to become a Technologically Advanced and Green National Oil Company (TAGNOC). It is a strategy to drive business through advancement in innovation and technology that are designed to minimize environmental impacts. TAGNOC represents PTT's vision to strategically transform from a resource-based company into a knowledge-based company. To this end, PTT has crafted the Technology Roadmap to drive innovation and the Green Roadmap to guide the entire organization covering products, processes as well as public awareness. PTT has rolled out clear targets and developed work plan to reduce greenhouse gas emission and environmental impacts. Sustainability Management Framework is an integral part of our organization management.

PTT is committed to operate with transparency and respect to the rule of law. PTT has joined the United Nations Global Compact (UNGC) initiated and urged companies within PTT Group to participate as well. UNGC membership demonstrates our commitment to apply international standard to promote human and labor rights and environmental protection as well as to defend against corruption. As the only Thai company that is a member of the World Economic Forum (WEF) in the industrial partner level, PTT played an important role in supporting the 21st WEF on East Asia which was held in Thailand. More than 600 government and business leaders participated in the forum. At the forum, PTT proposed energy principles for sustainable development including energy security, robust energy systems, social responsibility and knowledge dissemination.

Working with the Ministry of Energy, PTT has set up the Energy Academy to promote in depth knowledge on energy issues to both public and private sector which is important for steering the country development in long term. PTT understands the importance of creating shared value between business and society, thus aims to develop the Rayong Science Academy (RASA) into a leading science educational institution as well as promoting the Rayong Institute of Science and Technology (RAIST) into a world-class research university. The goal of these efforts is to develop Thai students' competency as well as expanding the country's knowledge base in order to achieve sustainable development.

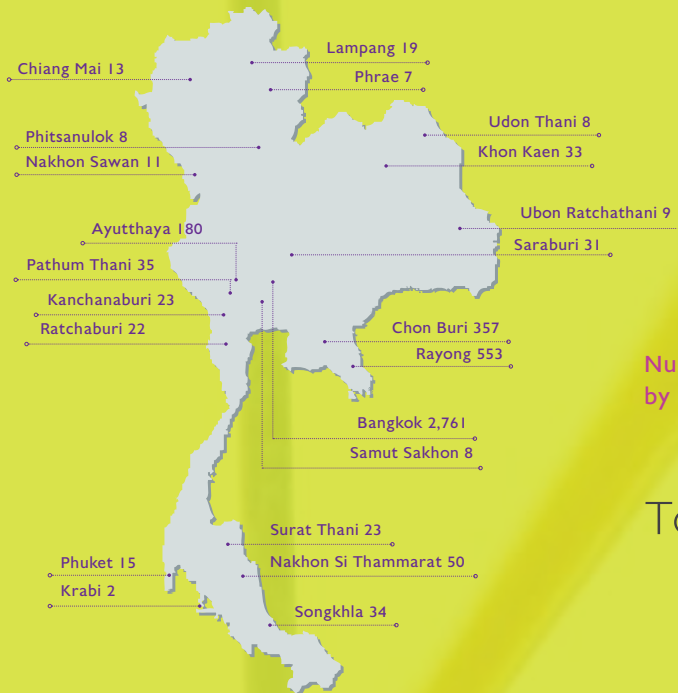
Our efforts and commitments have successfully propelled PTT into the 95th ranked company of the Fortune Global 500. PTT has also been selected as a member of the Dow Jones Sustainability Index (DJSI 2012/2013), a result that was achieved ahead of our targeted date. I would like to take this opportunity to thank all who has helped and supported PTT on our path to become the Thai Premier Multinational Energy Company and promise that PTT remains resolute in our commitment to become a 100-year organization and a strong support for Thailand in the coming years.

Our Business

PTT Public Company Limited or PTT was incorporated on October 1, 2001 through the privatization of the Petroleum Authority of Thailand where the organization was transferred to the state-owned enterprise including business, rights, debts, obligations, assets and employees under the State-Owned Enterprise Capital Act, B.E 2542 (1999). The company was first registered with 20,000 million Baht initial capitals and was debuted in the Stock Exchange of Thailand (SET) on December 6, 2001. PTT's major shareholder remains the Ministry of Finance while its status remains a state-owned enterprise under the Ministry of Energy's supervision. The head office is situated at 555 Vibhavadi Rangsit Road, Chatuchak, Bangkok. As of December 31, 2012, PTT boasted a total of 4,227 employees including secondments, of whom 2,851 were male and the remaining 1,376 were female working in the operations worldwide.

PTT is a national oil company whose business consists of, firstly, **PTT-operated business; namely**, (1) natural gas business which refers to procurement and distribution of natural gas, natural gas separation plants, natural gas pipeline system and natural gas for vehicles; (2) oil business including retailing, commercial marketing, procurement and distribution of petroleum, oil depot management and operation, foreign investment and investment in subsidiaries and joint-venture firms; and (3) international trading business which covers trading of crude oil and condensate, refined oil and petrochemical and overseas procurement and transportation; and, secondly, **PTT-investment business through other companies within the group** in (1) exploration and production business; (2) petrochemical business; (3) refinery business; and (4) foreign investment business.



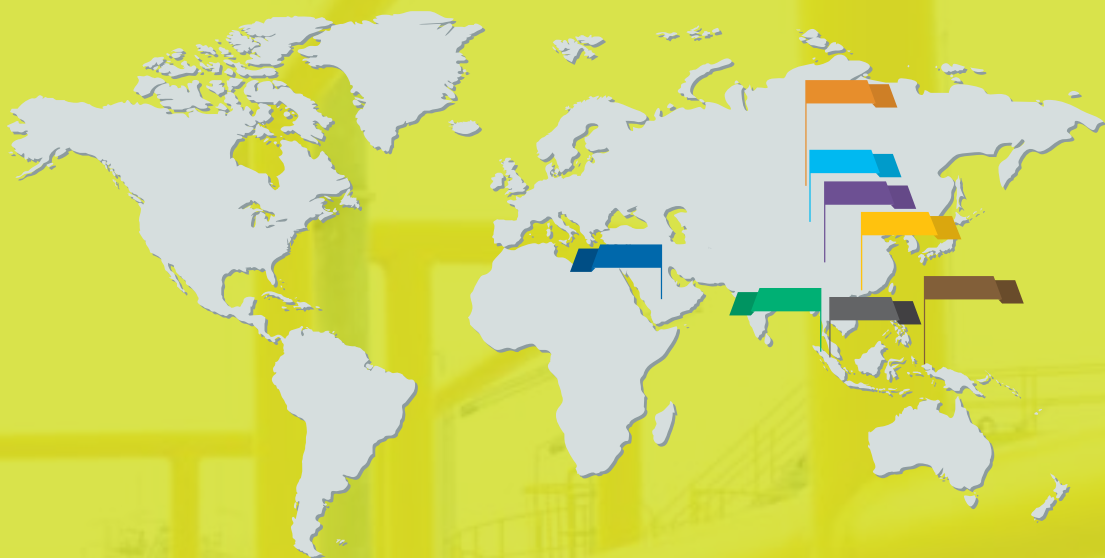


Number of PTT's employees by area in Thailand

Total 4,202

Number of PTT's employees by area overseas

Total 25



■ Dubai	2	■ Laos	1	■ Singapore	9
■ China	1	■ Vietnam	1	■ Philippines	6
■ Cambodia	3	■ Malaysia	2		



Business Principles

PTT's vision is to become a Thai Premier Multinational Energy Company. The firm has dedicatedly committed to the stakeholders where priority is the interests of the public and the country. PTT's duty is to establish energy security for the country through exploring, producing, researching and distributing activities. At the other front, PTT constantly encourages and reminds the public of their rights and duties to consume and conserve natural resources in a balancing manner for today's wellbeing and tomorrow's future. By committing to the core value "SPIRIT", the management, employees and companies within the PTT Group are bound to commitment in creating a common path and direction to reach the common goal.

PTT pursues the business on the basis of the sustainable growth strategy through balancing of **High Performance Organization (HPO)** which involves technology development, innovation and knowledge management in work process, production, sales of products and services. This is balanced with **Corporate Governance (CG)**, PTT pursues this goal on the basis of the business Code of Conduct where action taken must be transparent, fair, trackable and compliant with all the laws and regulations. Lastly, the balance takes into account the responsibility to the environment community development through **Care, Share and Respect (CSR)**, as well as creation shared vales (CSV).

Sustainable business

Aspirations

PTT aspires to become a BIG company with a variety of business units that are extremely competitive, to be a company with sustainable growth and investments throughout the LONG integrated value chain in order to create added values, and lastly to be a company with **STRONG** and outstanding operations and financial performances. To fulfill PTT's aspiration, PTT has defined three goals of success in which the progress is summarized as follows.

BIG

Goal: To become one of the world's top 100 companies with the highest revenue in Fortune's Global 500 by 2020.

Today (2012): PTT is currently ranked No. 95 among the world's largest 500 companies (based on the 2011 performance), up from No. 128th in 2011, with sale revenues of 2,428,165 million Baht, or a jump by 529,483 million Baht or 27.9 percent from 2010.

LONG

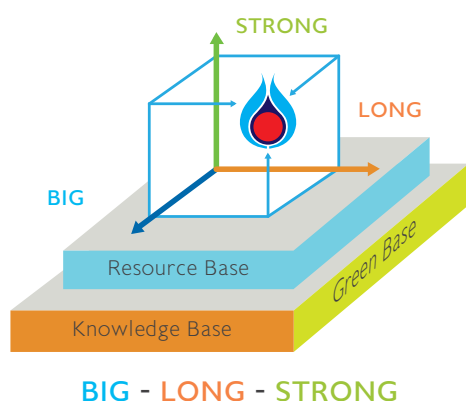
Goal: To be listed in the Dow Jones Sustainability Indexes (DJSI) by 2013

Today (2012): PTT, having successfully assessed by the SAM Corporate Sustainability Assessment that covered economic, social and environmental factors, is currently ranked among the top 10 percent companies or one of the fifteen companies out of 125 firms to become Dow Jones Sustainability World Index's 2012/2013 member (DJSI World) in the oil and gas producer sector before the targeted goal.

STRONG

Goal: To achieve the Top Quartile Performance with 20 percent Return on Invested Capital (ROIC) by 2020

Today (2012): PTT Group's average ROIC rate is currently 11 percent. However, to achieve the goal, PTT plans to improve the efficiency in each operation area; namely, project investment management, operation system, marketing and sales, business development, corporate strategy and investment, corporate finance, human resource and organizational management, stakeholder management, social responsibility and R&D and management of technology.



Strategic Objectives

PTT defines core strategic objectives in order to support the 3 goals comprising:

- Cost-cutting and profit-enhancing strategy which has been translated into Performance: Best-in Class; and Synergy: Deeper and Broader Collaboration.
- Sustainable growth and added value creation strategy which has been translated into Growth: Sustainability and Innovation and Stakeholder Excellence: Multi-stakeholder Balance.

The goals and strategic objectives are deployed into short-term and long-term strategic plans, business plans and operation plans at corporate and business unit levels.



Major events in 2012

- PTT and NECTEC joined hands to conduct research and development project on solar energy.
- PTT and Thai Airways International Public Company Limited signed a memorandum of understanding to develop bio-jet fuel.
- PTT introduced the Amazon Bio Cup, a cup made of bio-plastic material, in the coffee chain store Café Amazon for the first time.
- PTT established the Learning Institute for People to promote a learning process of vocational knowledge based on community experiences to allow communities to resolve problems on their own in order to encourage a stronger self-development process.

Strategic Direction

Today, the energy business is increasingly challenging due to much greater demands for energy, rising population and dynamic economic development worldwide while energy is and remains a scarce resource coupled with rise of global warming issue. All of these does affect PTT's ability to sustain long-term value creation. Therefore, to provide Thailand with energy security in the coming years, PTT needs to acquire the reserve use of knowledge to innovate technologies and new sources of energy to reduce the dependence on natural resources while seek opportunities to expand investments in an environmental-friendly energy business.

In 2012, PTT rolled out TAGNOC (Technologically Advanced and Green National Company) as the core strategic direction. TAGNOC consists of the following:

TA (Technologically Advanced)

The business will be conducted on the basis of own knowledge or own technology development. PTT has defined the technology roadmap to develop technology in 7 major fields that incorporate 2 common platform technologies related to both upstream and downstream businesses.

G (Green)

Investment in environmental-friendly energy and petrochemical businesses where priority is focused at Creating Shared Value (CSV) to the society and the business. The concept has led to PTT's Green Roadmap covering three areas as follows:

- Development of Green Products such as the second generation of biofuel, environmental-friendly plastic and chemical products and biodegradable materials
- Development of Green Process to increase energy efficiency and to reduce greenhouse gas
- Promoting Green People/Public Awareness in which PTT has initiated various activities as a green role model such as reforestation of another 1 million rai of trees: the 84 Tambon on a Sufficient Path Project, the Green Globe Institute, the Sustainable Energy Foundation, etc.

NOC (National Oil Company)

PTT sustainably provides Thailand with energy security.

In addition, PTT has defined business directions and strategies to take the entire organization onto the TAGNOC path as follows:

- Group-wide directions and strategies in technology roadmap, green roadmap and organizational health index with collaborative taskforce to support the implementation.
- Business unit specific directions and strategies for Upstream Petroleum & Gas Business Group and Downstream Petroleum Business Group.



Business Units

Upstream Petroleum & Gas Business Group

Oil and Gas Exploration and Production

Goal: To increase production to 900,000 barrels of crude oil equivalent per day within 2020 with proved reserves/production (R/P Ratio) greater than 10 years and a higher Return on Capital Employed (ROCE) than the average of the oil and gas exploration and production business.

Today (2012): PTT is currently investing through PTT Exploration and Production Public Company Limited (PTTEP) who currently explores and produces petroleum in 44 projects located in 12 countries with production capacity of 313,969 barrels of crude oil equivalent per day and 901 million barrels of crude oil equivalent reserves. To achieve the goal, PTTEP has defined key action plans as follows:

- To expedite the exploration and production and an assessment process for drilling and exploration work in Thailand, Myanmar, Australia, Algeria, Indonesia and others through projects such as the Zawtika and the Floating Liquefied Natural Gas (FLNG) projects.
- To expand the investment in the North American continent by focusing at liquefied petroleum gas projects such as shale gas and shale oil.
- To seek strategic partners to expand investments in various regions around the world.

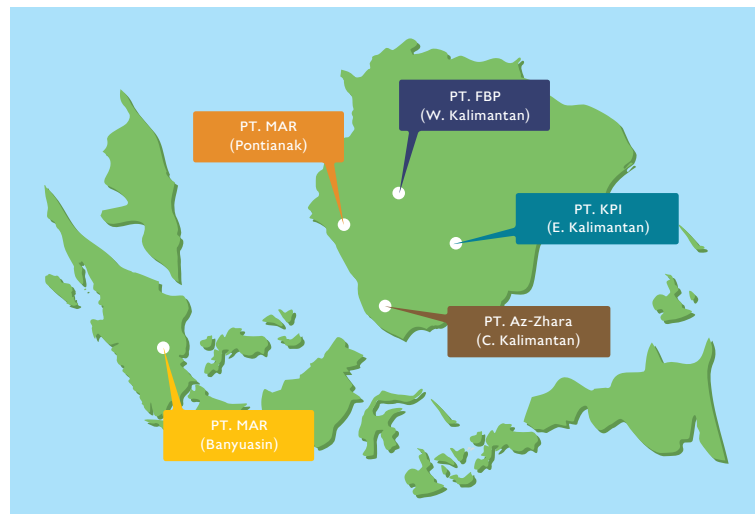
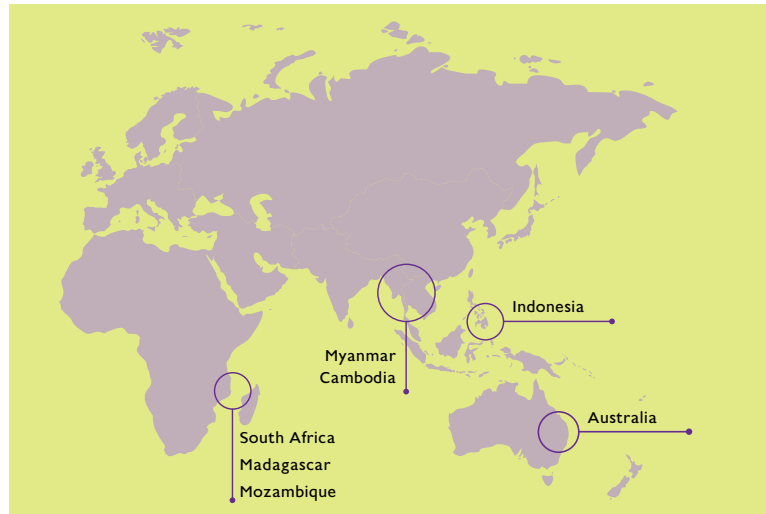


Coal

Goal: To achieve 70 million tons of production capacity (based on control ratio) within 2020 by increasing production capacity in existing resources and searching for new opportunities.

Today (2012): PTT is currently investing through PTT International Company Limited where it has invested in a coal mining business in Indonesia through PTT Mining Limited (PTTML). Through PTTML, the shareholding ratio in Sakari Resources Limited (SAR) has been increased which contributes to increases of coal production from 5 million tons to 10 million tons and coal reserves from 680 million tons to 1,400 million tons. Exports are now being made to Japan, Hong Kong, South Korea, India and Taiwan.

In addition, PTT is currently investing in a coal mining project in Madagascar through PTT Asia Pacific Mining Proprietary Limited (PTTAPM). The project is currently under an investment feasibility study while the coal mine is expected to boast 330 million tons of reserves. At the other front, a joint venture was set up to study coal reserves potential in Brunei and Cambodia while new investment opportunities are constantly being analyzed in target countries such as Indonesia, Australia, Myanmar, etc.



Plantation

Goal: To be a competitive palm plantation in Indonesia.

Today (2012): PTT is currently investing through PTT Green Energy Company Limited (PTTGE) which has a control over 196,258 hectares (PTTGE's investment ratio only) of which 23,337 hectares have already been developed. PTTGE now owns 2 crude palm oil (CPO) mills that boast a production capacity of 45 tons per hour and 30 tons per hour, respectively.

In addition, PTTGE has collaborated with local communities through an initiation of social responsibility activity/project. It has also introduced the zero waste management system to effectively manage the community's environment.



Natural Gas

Goal: To be one of Asia's Top 3 gas players with 1 trillion Baht revenues within 2020.

Today (2012): PTT is currently supplying, transporting, and distributing natural gas and products derived from gas-separation plants as well as retailing gas for vehicles and investing in other related businesses. PTT is sourcing natural gas from both domestic and overseas sources, in total contributes to over 969 cubic feet of liquefied natural gas imported per day which are being distributed through transmission pipeline stretching over 3,714 kilometers. Six gas separation units that produce more than 6.4 million tons of production per year.

Power

Goal: To expand investment in the power business with a production capacity of 6,000 MW within 2022 and the Return on Invested Capital (ROIC) and the reliable supply rates in the First Quartile.

Today (2012): PTT is currently investing through Independent Power (Thailand) Company Limited (ITP) and PT Utility Company Limited (PTTUP) with production capacity of 1,038 MW and plans to expand investments in Thailand and overseas with an intention to invest more in renewable power.

Downstream Petroleum Business Group

Petrochemicals

Goal: To operate integrated petrochemical businesses of PTT Group with Top Quartile Performances in Asia Pacific, the Return on Invested Capital (ROIC) above 14 percent and the revenue growth rate exceeding 5.5 percent per annum within 2020.



At present (2012): PTT is actively investing in the petrochemical business through 9 companies including PTT Global Chemical Public Company Limited (PTTGC), HMC Polymers Company Limited (HMC), PTT Phenol Company Limited (PPCL), PTT Asahi Chemical Company Limited (PTTAC), PTT Polymer Logistics Company Limited (PTTPL), PTT Polymer Marketing Company Limited (PTTPM), PTT Tank Terminal Company Limited (PTT TANK), PTT Maintenance and Engineering Company Limited (PTTME), and PTT MCC Biochem Company Limited (PTTMCC). This is to add values to locally-produced natural gas as well as products derived from PTT Group refineries. This bold action is also a mean to enhance the development of Thailand's petrochemical industry in order to substitute imported petrochemical products as well as to support other major industries heavily relying on petrochemical products as their raw materials.

PTT has already expanded the investment in an environmentally-friendly petrochemical business which is a project to study and develop biodegradable Polybutylene Succinate (PBS) plastic pellets derived from farm products. In addition, PTT MCC Biochem Company Limited in collaboration with the Industrial Estate Authority of Thailand (IEAT) has jointly developed the PTT Eco Industrial Park (PTT ECO-IP) within the Asia Industrial Estate for sustainable co-habitation between the industry, the community, the society and the environment. Moreover, the joint venture has launched the Phase 2 project in which bio-plastic bags would be used to separate organic waste which would then be transformed to produce organic fertilizer at Koh Samed to minimize waste and rehabilitate the environment at the Khao Leam Ya - Mu Ko Samet National Park.

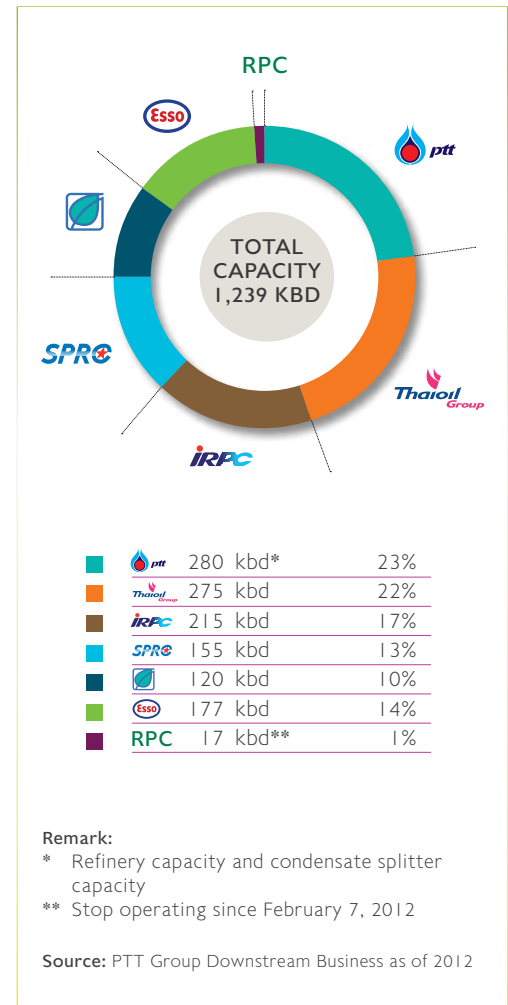
PTT Global Chemical Public Company Limited has been certified as a carbon footprint label holder by Thailand Greenhouse Gas Management Organization (TGO) for the high-density Polyethylene (HDPE) currently retailed under the InnoPlus Trademark. PTT also continues to develop the PTT Group Operational Excellence Project to apply an excellent system management to maximize operation efficiency and resource exploitation.

Refining

Goal: To operate refinery businesses of PTT Group with Top Quartile Performances in Asia Pacific, the Return on Invested Capital (ROIC) above 14 percent and the revenue growth rate exceeding 5.5 percent per annum within 2020.

Today (2012): PTT has invested in 4 companies; namely, Thai Oil Public Company Limited (TOP); IRPC Public Company Limited (IRPC); Star Petroleum Refining Company Limited (SPRC) and Bangchak Petroleum Public Company Limited (BCP) to secure fuel oil for the country and reduce imports. The total refinery capacity is 1,040,000 barrels a day or 84 percent of the country's total refinery capacity. Based on PTT's shareholding ratio in all refineries, the company has a total refinery production of 436,000 barrels a day or 35 percent of Thailand's total refinery capacity.

In addition, refineries under PTT Group are seeking to expand investment in related businesses to enhance their competitiveness through investment in the petrochemical industry, the lube base oil industry, the power business, the solvent business, and the renewable energy business such as ethanol and biodiesel derived from oil-based crops. Also, more investments are being made in an environmentally-friendly business such in the case of Bangchak Petroleum Public Company Limited which recently launched the Bangchak Green Station Prototype, also marks Thailand's first green service station, and investment in the Phase 1 solar energy power plant with capacity to generate 44 MW of power. Refining business is also part of PTT Group Operational Excellence Project that strives to apply the excellent system management to maximize operation efficiency and resource exploitation.



Thailand Refinery Capacity 2012

Oil

Goal: To become a Regional Top Brand and the Most Admired Brand as Brand Carrier of PTT; with the second largest market share following only that of a national oil company in countries where PTT invests by 2020.

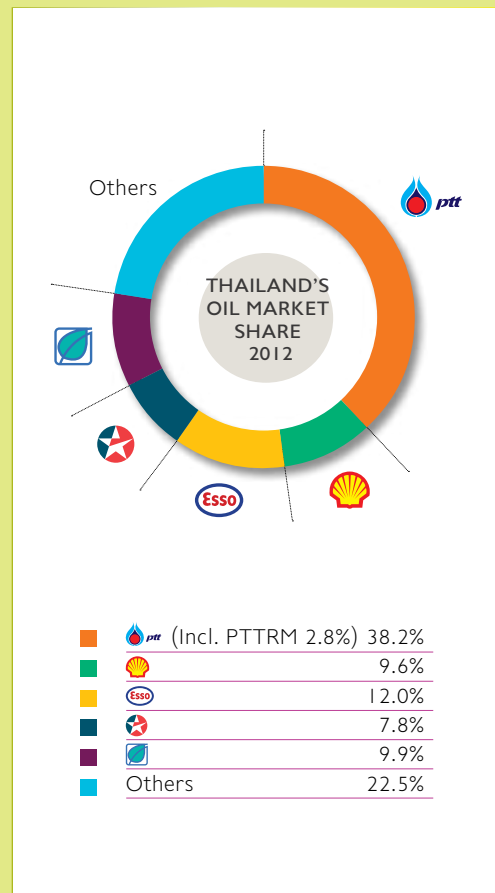
Today (2012): PTT is operating a business through the distribution of quality petroleum products such as refined products, liquefied petroleum gas, lubricants, and other products through various commercial markets, foreign markets and retail markets via sophisticated and full-scaled service stations which meet the needs of consumer varieties.

PTT plays a role in pushing and supporting the government's policy on renewable energy where it has been a frontrunner to distribute biofuel in the form of gasohol and biodiesel. In collaboration with PTT Research and Technology Institute, PTT is developing the second generation of biofuel. This year also marks the launch of environmentally-friendly lubricants, aviation biofuels and Zero Waste prototype project at PTT service stations.

PTT's oil business continues to strongly command No. 1 market share in Thailand. This accounts for 38.2 percent market share or a total sale of 16,982 million liters of refined products (including those sold by PTT Retail Management Company Limited: PTTRM). Similarly, it holds No. 1 market share in the lubricants market of 38.9 percent with a total sale of 143 million liters.



Zero Waste



International Trading

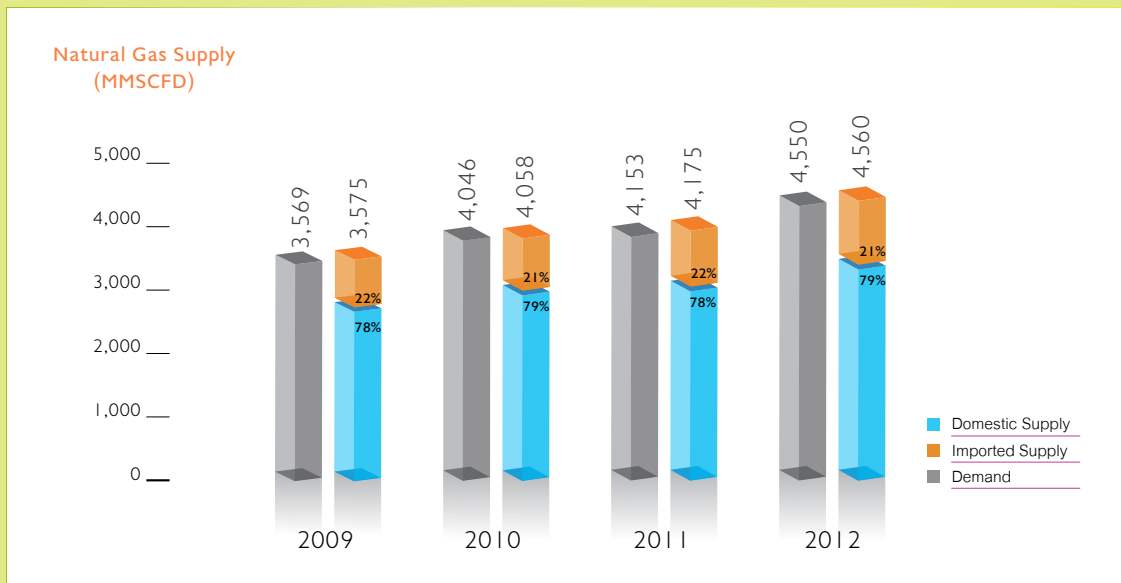
Goal: To be a multinational trading house of petroleum, petrochemicals and other products with a revenue reaching 100 billion US\$ within 2020, in which the 10 percent of the revenue will come from other commodities and a net profit margin of 0.5 percent.

Today (2012): PTT is currently conducting an integrated international trade business under a strategic framework to secure Thailand energy supply, expand the business base to every region worldwide, and produce new products aside from petroleum and petrochemical products. The company currently boasts a total sale volume of 72,338 million liters (or approximately 1,243 million barrels of crude oil equivalent) while simultaneously providing international logistics as well as market analysis and price risk management services to support PTT as Thailand's leading company in the world economic stage.



Energy security

PTT through the Gas Business Unit is sourcing natural gas from domestic and overseas sources via the natural gas transmission pipeline system. During the same time, the firm imports Liquefied Natural Gas (LNG) to fulfill increasing demands for natural gas in the power, industrial and transportation sectors. In 2012, PTT managed to secure 4,560 million cubic feet of natural gas a day, a 9 percent increase from 2011. Of the total, the ratio of domestic to imported natural gas was 79:21.



Natural Gas Demand and Supply

Report Introduction

Approach

The Corporate Sustainability Report is prepared to align with the same consolidation as used in financial report with a period of reporting between January 1, 2012 and December 31, 2012. The purpose of this Report is to provide reliable and quality information regarding policy, management approach and performance in economic, environmental and social dimensions. For comprehensive financial information of PTT, please refer to the financial report. Additional information regarding the governance and performance of the Board of Directors are provided in the Annual Report.

PTT has published its Corporate Sustainability Report annually since 2008. The Report is developed in compliance with the Global Reporting Initiative (GRI)'s Sustainable Reporting Guidelines Version 3 which aims to disclose PTT's responses to challenges and stakeholder expectations and interests including local communities, non-governmental organizations, shareholders, investors, customers, partners, suppliers, contractors, employees, government officers, the press, and the academics. In addition, to capture the issues that matter most for oil and gas sector, the 2012 Report has been leveraged to comply with the GRI Sustainability Reporting Guidelines and Oil and Gas Sector Supplement (OGSS) Generation 3.1. PTT has declared a GRI Application Level A+.

PTT has become a member of the United Nations Global Compact (UNGC) that promotes compliance with 10 international principles which include, human rights, labor, environment and anti-corruption. As a result, communication on progress has been disclosed in this Report.



Stakeholder Inclusiveness

PTT identifies stakeholders at both corporate and business unit levels. It has determined channels and mechanisms to respond and maintain relationships with them at various levels. This includes recommendations from investors, image survey, review of relationship with stakeholders, website visitors and etc. Details of PTT's stakeholder engagement and results are provided under the section Roles of Stakeholders.

PTT values and incorporates readers' opinions in report development. For example, it was recommended that awards of success to be consolidated in one report preferably in the Annual Report, and contents to be separately published in Thai and English versions to minimize printing.

Materiality

Materiality assessment is performed in accordance with methodologies as prescribed in GRI Reporting Framework to ensure complete reflection of PTT's significant economic, environment and social impacts in the short-term and long-term or decisions of stakeholders. This Report therefore intends to focus at challenges and issues not only closely related to PTT but also relevant to the nature of PTT's business and material to stakeholders.

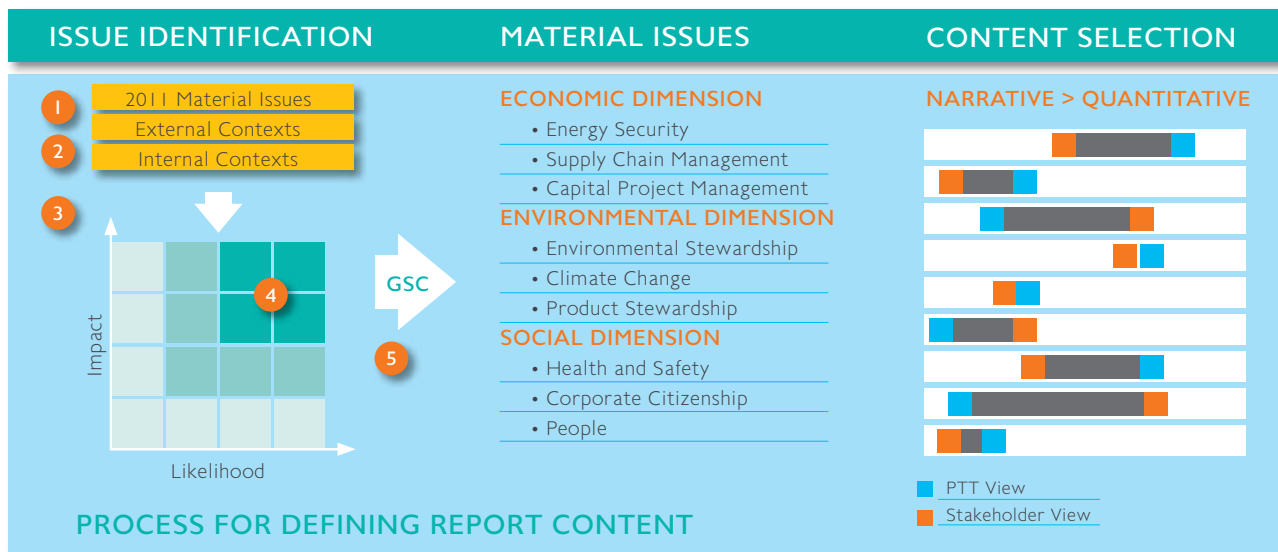
PTT assesses the materiality of the contents encompassing the PTT's strategy and activity, concerns directly expressed by stakeholders, social expectations, international standards or voluntary or mandatory obligation. By assessing the materiality this year, PTT found no essential change from its prior report.



Content Selection

PTT implemented a detailed process for content selection incorporating combination of internal and external factors, consisting of:

- Step 1: Identify and understand the topic materials of stakeholders through engagement process.
- Step 2: Identify topic materials for business strategies through an internal process such as risk assessment.
- Step 3: Consolidate the topics in the matrix and assess each topic on the basis of their economic, environmental and social impacts and weighting based on their sustainability agenda. The evaluation also takes into account the basic expectations and global trend such as World Business Council for Sustainable Development (WBCSD) Vision 2050; or international sustainability index such as RobecoSAM Corporate Sustainability Assessment (CSA), research information, analysts' viewpoints and publications by the public institutions and the public sector.
- Step 4: Select contents from topics earning the highest ranking in terms of importance and those with lower rankings but containing significant weight for sustainability reason. The rest of the topics will be disclosed on the company's website or presented through other channels.
- Step 5: PTT Group Sustainability Committee (GSC) reviews and approves the materiality assessment, and content selection to ensure the contents are comprehensive and balanced (in both narrative and quantitative aspects) and that major contents relating to the company are covered. The GSC Committee will also recommend the Report's theme.



World Business Council for Sustainable Development (WBCSD)

WBCSD currently boasts 190 leading companies in 22 industrial sectors from 36 countries worldwide. PTT has been WBCSD's member since 2005 having its President & CEO as a council member and its Executive Vice President as Chairman of the GSC who also acts as a liaison delegate. PTT has regularly engaged in information exchange and implementation of WBCSD's practices to develop PTT Group's sustainable development.

Scope

Scope of reporting is determined by level of management control over PTT's affiliates. The scope covers only businesses in Thailand that PTT operates itself; namely, natural gas business unit, oil business unit and international trade business unit; and that PTT investment business; namely, PTT Exploration and Production Public Company Limited (PTTEP). The scope however excludes joint-venture companies, co-venture companies, other related companies, partners and contractors unless otherwise stated that it is under PTT's direct management or that the operation essentially affects PTT. However, PTT encourages companies within the group to apply international practices when preparing a report as already stated in the PTT Group sustainability management framework. At the same time, it intends to expand the scope of reporting to correspond with financial statements and to include additional companies within the group.

This Report therefore will cover PTT's sustainability policy and management guidelines as well as operation effectiveness in operation areas directly supervised by PTT and PTTEP. For comprehensive information of PTTEP's sustainability, please refer to PTTEP Sustainability Report 2012 prepared under GRI 3.1 OGSS framework as well.

Reliability

PTT Group Sustainability Committee reviews and approves information disclosure. In addition, PTT engaged third party to review accuracy, transparency and credibility of the Report for the second consecutive year. Assurance statement is provided on Page 135, moreover, PTT intends to continue the review annually.

Clarity and Accessibility

This Report is prepared to allow all stakeholders to gain access to appropriate information that they can use to make an informed decision. As a result, technical terms are used only when necessary. The Report is available both in Thai and English with GRI Content Index at the end of the Report for quick and easy reference. The Report is published in a hard copy and CD and is posted on website which has been revamped and re-launched since January 2012. (All Reports Including this Report can be downloaded from www.pttplc.com).

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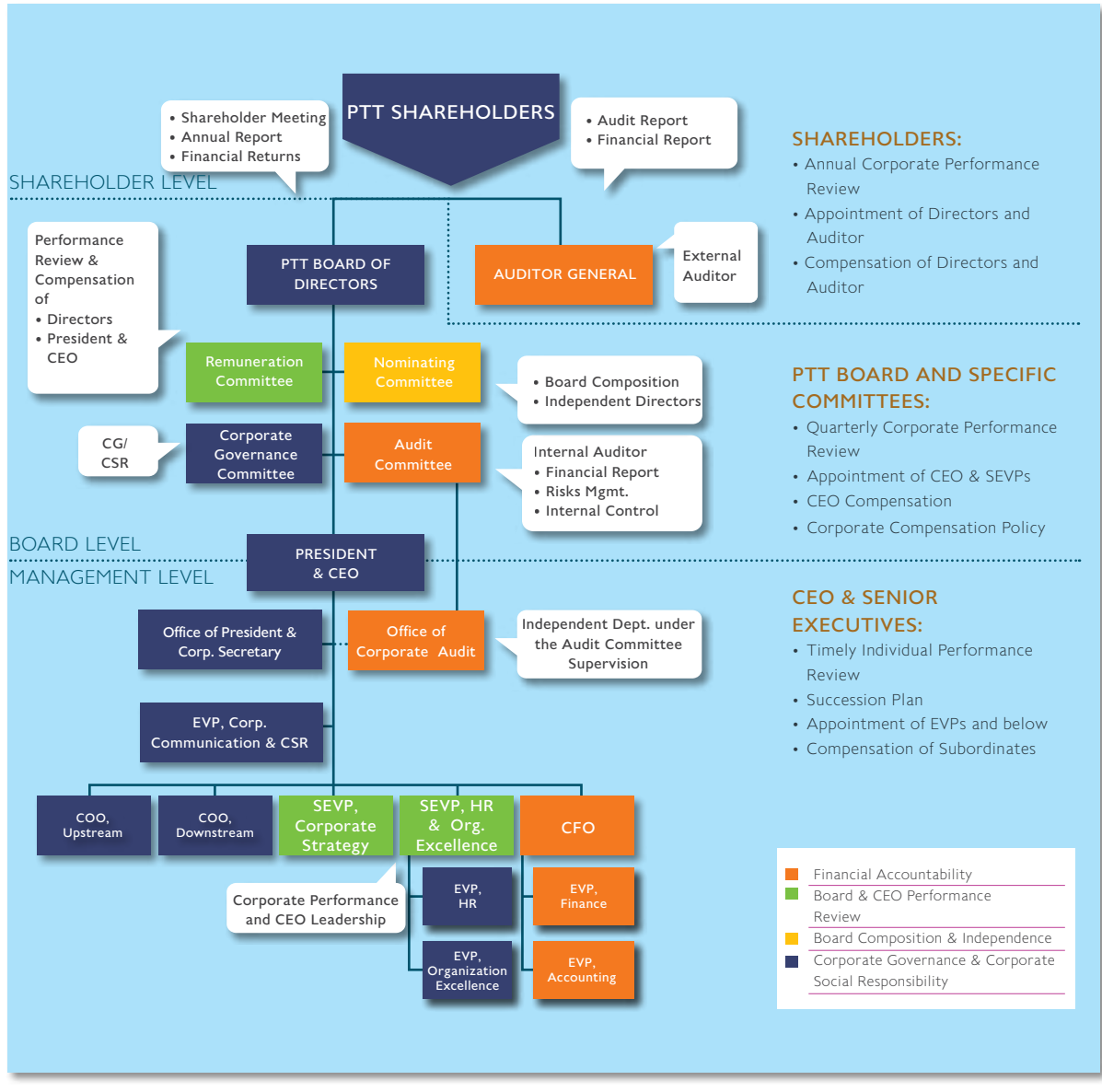


Sustainable Governance

Governance

PTT is a state-owned enterprise under the supervision of government agencies as designated by relevant laws. It is also a public company under the supervision of the Securities and Exchange Commission (SEC), the Capital Market Supervisory Board of Directors (CMSB) and the Stock Exchange of Thailand (SET). PTT, therefore, is governed by three levels including the shareholders, Board of Directors and the Management. Relationship in each governance level has been elaborated in the company's Articles of Association and regulations.







PTT Board of Directors

The Board of Directors consists of members who are knowledgeable, having right expertise, and experiences proven favorable to the company's business. Members of Board of Directors are professionals who are willing to dedicate their time to perform duties. Members of the Board of Directors are appointed by shareholders. The committee is responsible for steering PTT's operation direction, appointing management team to run PTT's business, establishing a specific committee to handle a specific issue and appointing the company's auditor as well as the Corporate Secretary to provide legal advices that require the Board of Directors acknowledgment and compliance, and may also manage the meetings and keep the company's important documents.

For the purpose of accountability and transparency, PTT requires that the chairman cannot hold an executive position in the company. This has been PTT's practice since it was first registered in the Stock Exchange of Thailand (SET) in 2001. As PTT is a state-owned enterprise under the Ministry of Energy, the chairman is elected from one of the directors and usually is an executive from the Ministry. However, the chairman's performance is independent from the Ministry.

PTT restricts the number of the Board of Directors' members to be no less than 5 but not exceeding 15 with equal treatment to both genders. At least half of all existing directors shall be independent directors who must be entirely impartial from the control of both the management and major shareholders. Independent directors must not be involved in or have any interest in the management's decision. At present, the PTT Board of Directors consists of 15 members, one of whom is female, with 10 independent directors who have been nominated by the Nomination Committee. Each director is an expert in a particular field with years of experiences as senior executive in major organizations from various professional fields considered necessary for PTT's balanced management. For example, directors are knowledgeable in energy and petroleum sector, law and jurisprudence, as well as accounting and finance. Curriculum vitae and details of directorship of all directors are in Annual Information Registration Statement (Form 56-1), Annual Report (Form 56-2), and PTT's website.

Board of Directors' meeting dates and agendas are set in advance throughout the year. The Board of Directors meeting is an agenda-based meeting with a purpose to verify, monitor, and review the company's policies. In 2012, the Board of Directors convened 15 times, of which 12 were scheduled meetings and the remaining 3 were special meetings. In addition, 1 independent director meeting was held with no executive present at the meeting.

PTT Board of Directors represents the shareholders. Therefore, the Board of Directors is responsible for determining the company's major business directions as well as making important decisions for the company. The Board of Directors steers and supervises management's performance, manages risks, and sets remunerations. Most importantly, members of the Board of Directors must demonstrate leadership and high ethical standards. To ensure that the Board of Directors' performance is efficient and effective, 4 sub-committees have been organized, all of which consist of non-executive members, to carefully screen work issues under the Corporate Governance Principles.

The 4 sub-committees consist of:

- 1) Audit Committee whose duties are to review legal compliance, internal control, financial reports, connected transactions, and inter-party transactions to maximize the company's interests. In 2012, the Audit Committee convened 16 times, submitted report to the Board of Directors and held a meeting with external auditors and accounting departments to review financial statements on a quarterly basis.
- 2) Nomination Committee whose duty is to recruit and nominate candidates as directors, President & CEO. The Nomination Committee convened twice in 2012.
- 3) Remuneration Committee whose major responsibility is to review remunerations of the Board of Directors, President & CEO and the senior executives. In 2012, the Remuneration Committee convened twice.
- 4) Corporate Governance Committee which is responsible for proposing corporate governance practices, reviewing corporate governance approaches and principles to be in line with the



international practices, and monitoring corporate social responsibility activities to ensure that they fully, equally, and effectively respond to the needs of all stakeholders under the Corporate Governance and the Code of Business Ethics. In 2012, the Committee convened 4 times.

PTT focuses on auditing and balancing the Board of Directors power to ensure that corporate governance is effectively and fairly carried out. Each year, an evaluation to assess whether or not director's performances are in line with PTT's Corporate Governance is conducted. The assessment is conducted on the entire committee (evaluation of the entire Board of Directors or the entire sub-committee) and on individual director (both self-evaluation and peer evaluation) to review performance, problems, and obstacles during the past year as well as to improve the operation. Results of the evaluation are disclosed in Annual Registration Statement (Form 56-1) and Annual Report (Form 56-2).

The Board of Directors is evaluated by independent assessor through Ministry of Finance's Office of the State Enterprise Policy Office (SEPO) on an annual basis, and also through the Thai Institute of Directors (IOD) once every two years. Board of Directors continues to receive the outstanding State-owned Enterprise Award by Ministry of Finance. Likewise, PTT has been bestowed the Board of Directors of the Year Award from the Thai Institute of Directors regularly that PTT receives the prestigious Board of Directors of the Year-Hall of Fame Award.

The Remuneration Committee reviews annual remunerations of Board of Directors' members that appropriately reflect the level of responsibilities and the company's financial status while making sure that the remunerations remain competitive with other companies in the same industry. The remuneration is in a form of bonus that reflects the company's performance or net profit. Annual remuneration is submitted for approval by the Board of Directors and shareholders, respectively. The Board of Directors' remuneration packages are subject to approval at the Annual General Meeting's (AGM) for shareholders.

Management

The Management is responsible for managing the company's business and daily activities as entrusted by the Board of Directors. President & CEO is the top executive who has the power and duties to manage PTT under the guidance of Board of Directors. The President & CEO must also strictly manage the company in accordance with work plan or budget already approved by the Board of Directors with integrity and accountability for the best interests of the company and the shareholders. The President & CEO manage the company through the PTT Management Committee (PTTMC), which appoints a sub-committee to appropriately handle and manage internal affairs with maximum efficiency and effectiveness. In 2012, the PTT Innovation Promotion Committee was appointed, making a total number of committees to rise to 15.

PTTMC convenes weekly and the meeting date and agendas are set well in advance throughout the year. The Management meetings are agenda-based. The meetings are used for reviewing, revising, and monitoring operation performances on the basis of pre-determined indicators. Executives are tasked to set directions and encourage their supervisees in their respective line of authority to perform under a common goal, which their performance in cascading the company common goal is used as basis for determining factor for remunerations. In 2012, PTTMC convened 40 times.

The Remuneration Committee reviews the President & CEO's performance based on the 2 factors. The first factor is the company's performance in a relevant fiscal year (70 percent weight) which is based on an acquired performance score resulted from an appraisal of state enterprises quality in 6 domains. The second factor is the management capability and leadership quality (30 percent weight), which include the ability to steer the company to achieve the goal, to increase the company's efficiency and capacity in the long run, to set vision that will enhance a long-term corporate value, and to turn the company into a recognized organization and a prestigious example of Thailand's leading corporation.

The management's remunerations will be in line with policies and criteria set by the Board of Directors which will be closely linked with PTT's performance as determined by the Ministry of Finance's Performance Agreement (PA) that covers economic, social, and environmental aspects. President & CEO as well as executives of all levels jointly determine Key Performance Indicators (KPIs) each year as a guideline to direct PTT's business. The KPIs will also be used to evaluate performance of the President & CEO and executives of all levels.

Decisions on salary increase and annual bonus for executives and employees are made by Board of Directors based on the annual performance success in relation to the KPIs, as this will constantly encourage employees to remain committed to their tasks under the Corporate Governance Principles.

PTT at the World Economic Forum on East Asia 2012

The 21st World Economic Forum (WEF) on East Asia was hosted by Thailand between May 30 and June 1, 2012, under the theme "Shaping the Region's Future through Connectivity". The forum allowed leaders in East Asia to share ideas on regional economic, social, and energy issues with world-class private entities who have already invested in or are expressing interest to invest in Asia. The WEF is the world's renowned economic meeting that is closely followed by the leaders around the world. The Bangkok meeting was attended by more than 630 participants including government, opinion leaders, and senior executives who gathered to express their opinions openly.



Dr. Pailin Chuchottaworn, PTT's President & CEO, shared his vision at the private industry session and the public session in which he co-chaired. His session focused on the possible cooperation and direction in the energy market expected to be seen in 2015 under the ASEAN Economic Community (AEC). Dr. Pailin underlined the energy security issue under the concept of New Energy Architecture, which is a concept of energy structure that consists of 3 major components: (1) equitable energy access for every sector since energy is a major factor that drives the economy; (2) environment concern which is a global issue; and (3) adequate and sustainable energy supply. Dr. Pailin stated that the region's view towards energy must be changed to focus more on effective energy use. ASEAN countries are suggested to let energy price freely float according to market mechanisms to reduce energy consumption, since currently prices do not reflect the real cost of energy.

One hopeful conclusion is the energy collaboration within AEC which will not only help increase energy security but should also allow each country to invest less in domestic energy projects. At the WEF, all 10 ASEAN countries share a common view and willingness to collaborate more on the energy issue, which is considered a true milestone, since the cooperation, which was once a national level, has now been upgraded into a strong regional commitment.

Although the curtain has already been closed for Thailand's WEF, PTT continues to move towards the goal to become Thailand's leading multinational energy company who is well aware of a possible co-habilitation between the business, the Thai public, and the green environment; and sustainable growth on the basis of technological development and knowledge reliance.

Integrating sustainability

PTT employs both top-down and bottom-up approaches in the preparation of the strategic and business plans. The PTTMC and senior executives within the PTT Group companies review and determine PTT Group's business directions for the next 5 years at the Top Executive Thinking Session (TTS) to duly reflect economic conditions, energy situations, and changing business circumstances. The TTS meets 4 times during April and June. Then, the Strategy and Corporate Planning Department communicates TTS's ideas with various business and supporting units for them to formulate their own strategic plans. The business directions are presented at PTT Group's Strategic Thinking Session (STS) which is attended by the management, at the executive vice president level and higher, who will mobilize their ideas for PTT's business directions and long-term strategies. Major strategic directions from the STS will be proposed to the Board of Directors for approval. If there is any additional suggestion, the unit who is the strategy owner will review it and use it as a framework to formulate a state-owned enterprise plan and budget later.

When formulating a strategic direction, it is important that all executives and employees are clear in the "End-Way-Mean" model. "End" refers to strategic objective. "Way" refers to strategic initiatives that will help achieving the strategic objective. Finally, "Mean" refer to a critical success factor that allows strategy/procedure to be implemented effectively.



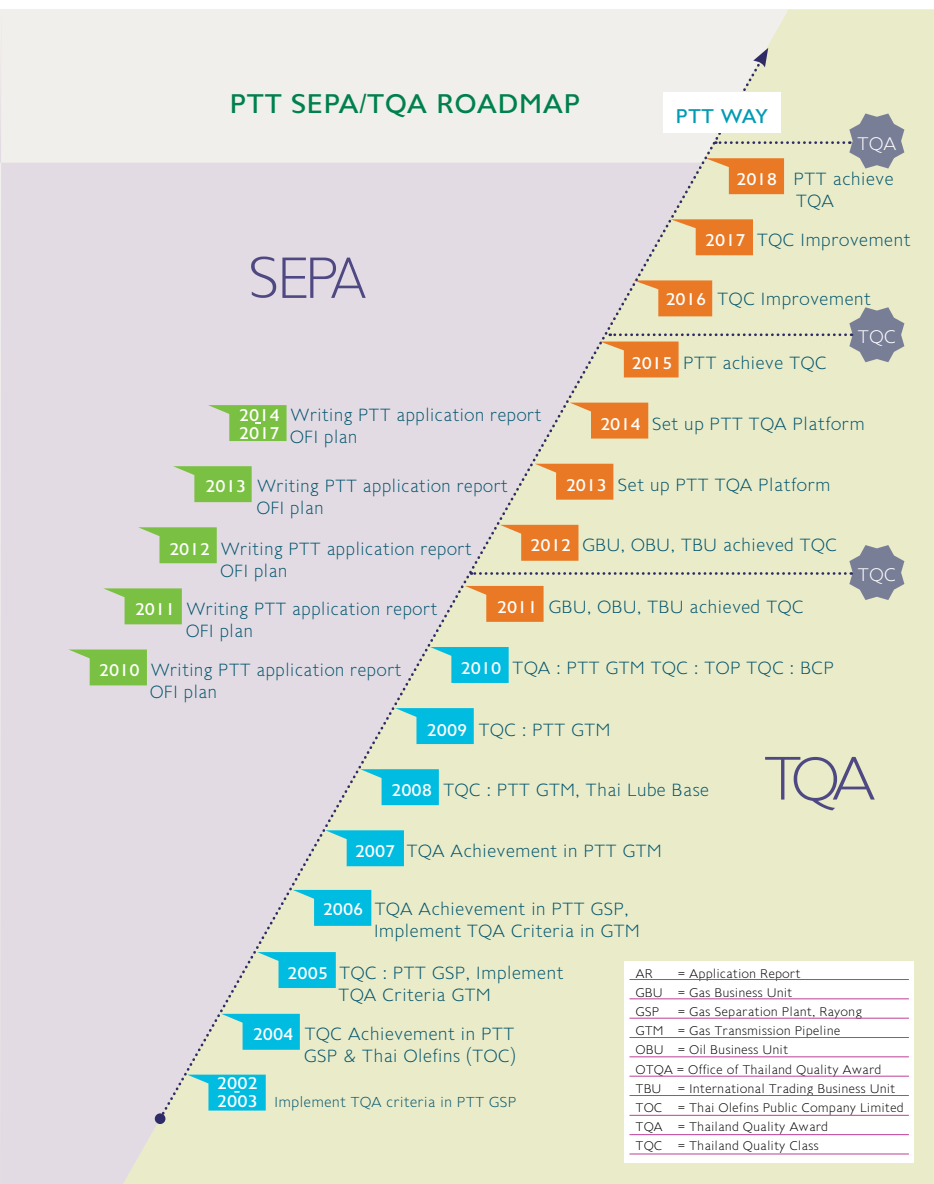
Management for Excellence

From 2002, PTT has implemented criteria of the Thailand Quality Award (TQA) for performance appraisal. The TQA's concept is based on the Malcolm Baldrige National Quality Award (MBNQA), the management system that is widely recognized by as many as 38 countries around the world as measurable criteria for quality. As a state enterprise under the Ministry of Finance's supervision, PTT is also subject to the State Enterprise Performance Appraisal (SEPA).

Under the "PTT Way," PTT strives to be strong in 3 areas: operating system, management system, and people system. PTT manages the 3 pillars using the TQA's concept which covers corporate management for excellence in both process and outcomes. PTT continues to improve related systems starting from the department level to the main business units, including PTT's gas, oil, and international trading business units. In 2012, PTT was awarded the

Thailand Quality Class Award (TQC) for the second consecutive year from the Thailand Quality Award Office.

At the same time, the Sub-Committee Supervising State Enterprise Performance Appraisal (SubPAC) has set a goal for Grade-A state enterprises to pass a process appraisal (Categories 1-6) with at least 350 scores by 2013. Consequently, PTT has set the goal to achieve 335 scores in 2012. This reflects the fact that PTT is a company with systematic management, efficiency in transforming concepts into real actions and processing the evaluation and improvement mechanisms based on fact-based information to achieve management excellence in all aspects in order to achieve the target. The Appraisal results are not available in time for inclusion in this Sustainability Report. However, PTT is keen to disclose the results in the next report.



PTT focuses on improving the quality of the corporate management processes in order to become a High Performance Organization. Each business process has been configured to achieve world class management standard as well as to be in compliant with the TQA criteria. To this end, PTT has set a goal for the entire organization to win the TQC Award in 2015 and the TQA Award in 2018. In 2012, PTT increased the effectiveness of the monitoring process by using fact-based system to benchmark the results and targets with peers in the industry. The benchmarking process is adopted to further the innovation of PTT's management process.

PTT also strives to be an organization of innovation, therefore, the PTT Innovation Promotion Committee and the PTT Innovation Working Committee have been established. PTT organized activities to promote and recognize innovations; for example, innovations were exhibited via the PTT We Can Corner and the PTT Innovation Award was established. As a result, PTT has regularly been named the outstanding state-owned enterprise. Recently, PTT won the HM the King National Innovation Award for the Electromagnetic Induction Device on the National Innovation Day 2012 organized by the National Innovation Agency.



"PTT Electromagnetic Induction" – PTT Innovation

In 2012, the PTT Electromagnetic Induction was awarded first prize from the National Innovation Agency, the Ministry of Science and Technology for Best Innovation of the year. In 2013, the innovation also won 'SEPO Innovation Award' given by State Enterprise Policy Office (SEPO), and for best engineering and industry innovation given by the National Research Council of Thailand. Additionally, PTT Electromagnetic Induction will represent Thailand in the 41st International Exhibition of Inventions in Geneva which will take place between 10-14 April 2013.

A major problem in the production and transportation of crude oil is the crude oil that contains a high amount of large hydrocarbon molecules. The compositions of hydrocarbon molecules in crude oil are specific to the geology such as crude oil from onshore Thailand and Africa. When the temperature of crude oil drops below a certain level, these molecules are deposited into wax. Wax deposits present problems in production and transportation because the wax can accumulate in production wells and pipeline or, in the case of Sirikit production, in the locomotives used to transport crude oil from Phitsanulok to refineries in Bangkok and Sriracha. A team of researchers from PTT Research and Technology Institute has developed a tool to resolve the issue using the principle of electromagnetic induction. The electromagnetic induction is used to heat the metal's surface by generating Eddy current within the metal. The solution views metal not as the problem (from high heat loss through the surface) but as an opportunity to use metal properties to address the problem of the crude oil wax.

PTT Electromagnetic Induction has been designed in accordance with health and safety standards. The device is convenient for use and portable in itself. Therefore it helps to reduce cleaning time of locomotives used for transporting crude oil and a procedure which requires energy from steam and could lead to potential contamination from wax into the environment. It can be said that the electromagnetic induction is truly an innovation that is friendly to the environment and communities.

PTT Electromagnetic Induction can be leveraged for use with crude oil transmission pipeline, wells, other production assets worldwide with similar type of crude oil. At the moment, this innovation is undergoing a process for technology license registration both in Thailand and overseas.

Approach to Sustainability

PTT is the first Thai company to be assessed as Member 2012/2013 of the Dow Jones Sustainability Work Index (DJSI Index) in the Oil and Gas Producers (OIX) sector. PTT passed the sustainability evaluation by the Sustainability Asset Management (SAM) before the targeted aspiration previously set by the company. This achievement is a proof that PTT has a sustainable business conduct and performance. PTT can also maintain a balance between being a High Performance Organization through knowledge-based management and technology development, and being committed in energy innovation for environmental purpose and social accountability under the Corporate Governance. PTT continues to pursue the business for mutual developments and intends to maintain the prestigious DJSI member status. Based on the past evaluation, there are areas that PTT can improve on. Moreover, PTT urges other companies within the group to also be assessed by the SAM to learn how they perform in comparison to their industrial peers. The process is beneficial to the risk management and is considered to be a golden opportunity to make businesses under PTT Group to be more sustainable.

The 2012 work program focuses on improving work system and management that will lead PTT to become a sustainable organization through an engagement process. Related departments are advised and persuaded to be part of the process and to approve target and development guidelines in the same direction. In addition, the company is strengthened to better respond to the current situations and to be ready to confront future challenges. The President & CEO has already approved the project along with a specific line of command known as the PTT Group Sustainability Management Project, with the Executive Vice President of the Organization Effectiveness acting as the project director, which directly governed by the PTT Group Sustainability Committee (GSC). PTT Group Sustainability Management Project monitors progress, assesses performance and reports results to GSC in the meeting held at least on a quarterly basis. GSC then periodically reports progress, problems and obstacles to the PTTMC.

The PTT Group Sustainability Management Project is a core driving force, working with Subject Matter Experts (SME) to improve the formulation of operation plan to ensure that it corresponds with sustainable strategy and the international practice. The Business Units Sustainability Committee (BUSC) is responsible for governing sustainable operations at business unit level for the entire company to pursue the common and shared success.

On April 25, 2012, the PTT Group Sustainability Management Project organized a workshop at the headquarter office under the topic of **"Driving Change and Creating Value thru Reporting."**

The event received participations from various departments whose duty is to gather information based on economic, social and environmental indicators as practiced internationally to gain better understanding of the reporting process in order to constantly improve the process. The workshop also set a stage for external party to share best practices and recommendations that allowed information to be disclosed accurately, with transparency and credibility. About 30 employees from related departments and representatives from companies in the PTT Group attended the event.



To celebrate the 20th Anniversary of the United Nations Conference on Environment and Development (UNCDE) which has been widely known as the Earth Summit, the United Nations organized the United Nations Conference on Sustainable Development (UNCSD), known shortly as the Rio+20 Meeting in Rio de Janeiro, Brazil. It is expected that results of this meeting will give an impact on how country will be developed as well as how the world is going to manage the environment in a wider scale, the same way the Earth Summit did to the world 20 years ago.

On July 24, 2012, the PTT Group Sustainability Management Project organized a seminar to share information relating to the Rio+20 Meeting. The meeting, which was held under the topic of "What's next for corporate sustainability?" was conducted to prepare PTT for the concept of sustainable development and the impact towards PTT Group's operation. The guest speaker was Ms. Linden Edgell, Partner and Global Sustainability Program Director who represented the Environmental Resources Management Group, Inc. (ERM), a company that was invited to attend the Rio+20 Meeting. The seminar was also attended by members of the PTT Group Sustainability Committee (GSC), the PTT Group CSR Committee, the PTT Group Corporate Social Responsibility and Communications Committee in Rayong, and employees from PTT Group companies. In total, approximately 60 participants attended the seminar.

PTT Group CSR Policy and Framework has been implemented since 2008. The policy and framework was reviewed to ensure constant updates in the sustainability domain to keep up with the international practice. The review reflects changing business landscapes and provides an opportunity for PTT to prepare for and respond to challenges while marching towards success in a strategic manner. This update covers standards, practices and assessment criteria relating to the energy industry such as the ones implemented by Global Reporting Initiative (GRI), Oil and Gas Sector Supplement, Dow Jones Sustainability Indexes (DJSI), and World Business Council for Sustainable Development (WBCSD): Vision 2050. The final outcome after the update is the PTT Group Sustainability Management Framework.



PTT Group Sustainability Management Framework



PTT Group Operational Excellence (OpEx)



In addition, PTT is currently running the PTT Group Operational Excellence (OpEx) Project whose main objective is to drive operation performances of companies under the PTT Group to pursue the Top Quartile Performance. The project is driven by the OpEx Committee which consists of representatives from 10 companies to craft the Operational Excellence Management System (OEMS) handbook that contains 12 OEMS Framework elements. The sustainability management that is in line with the PTT Group Sustainability Management Framework has been added as one of the OEMS Framework elements. On September 18, 2012, executives from 8 companies: PTT Public Company Limited, PTT Exploration and Production Public Company Limited, PTT Global Chemical Company Limited, Thai Oil Public Company Limited, IRPC Public Company Limited, PTT Phenol Company Limited, PTT Utility Company Limited, and PTT Energy Solutions Company Limited, signed the OEMS to pledge that they, too, will turn this into an actual implementation.

To reinforce and connect PTT Group's operation with the sustainability strategy, the GSC continues to monitor and learn from international practice. All potentials and strengths of the operations are connected and weakness and unclear work processes are improved. In 2012, a workshop was conducted to update the strategies, the short-term and long-term roadmaps as well as the PTT Group Sustainability Policy so that they not only better reflected the change but also leverage from the original five-year roadmap (2009-2013). The update will also provide information to support the preparation of PTT Group's annual state enterprise plan. The brainstorming session at the workshop came up with important conclusions that will be transformed into PTT Group's Sustainability Vision Management and the Sustainability Strategy and Roadmap 2013-2020. In addition, engagement sessions with relevant departments were carried out to review ideas so that the roadmap can be constructively implemented and that the company can actually achieve the sustainability goal. This will be submitted to the PTTMC for further approval and implementation.

PTT has developed a report to disclose the economic, social, and environmental performances based on the Global Reporting Initiative (GRI) practice since 2008. On September 14, 2012, the PTT Group Sustainability Management Project organized a workshop entitled "Paving the way to more and better sustainability reporting" at PTT's headquarter. The workshop was held to inform objectives, processes, duties and responsibilities as well as work plan for report makers to prepare a report in a systematic manner and to ensure that the report will continue to be developed with support and understanding from appropriate personnel. Representatives from PTT Global Chemical Company Limited, PTT Exploration and Production Public Company Limited, and Thai Oil Public Company Limited shared their best practices regarding the reporting of each companies. 55 participants from the PTT GSC, representatives from PTT, and the subsidiaries attended the event.

To monitor PTT Group's progress in turning the CSR Policy and Framework into actions in targeted areas, PTT has in place the PTT Group CSR Framework Verification Program to periodically review performance. The program can be divided into 2 phases as follows:

- Self-assessment of CSR Framework - is carried out on an annual basis. The PTT Group Sustainability Management Project sends out a survey questionnaire to a designated area for a self-assessment. This has been done first in 2010 and later in 2012. Results from the 2012 survey will be reported to the GSC's Q1 Meeting in 2013.
- External assurance of CSR Framework is carried out every 3 years. An external team conducts a field visit to review the project's operation based on PTT Group CSR Framework's 10 elements. The first field visit took place in 2011, therefore, no activity was undertaken in 2012.

In 2013, PTT is reviewed the CSR Framework Verification Program to ensure that it is in line with the PTT Group Sustainability Management Framework for universal and across-the-Board of Directors implementation group-wide.



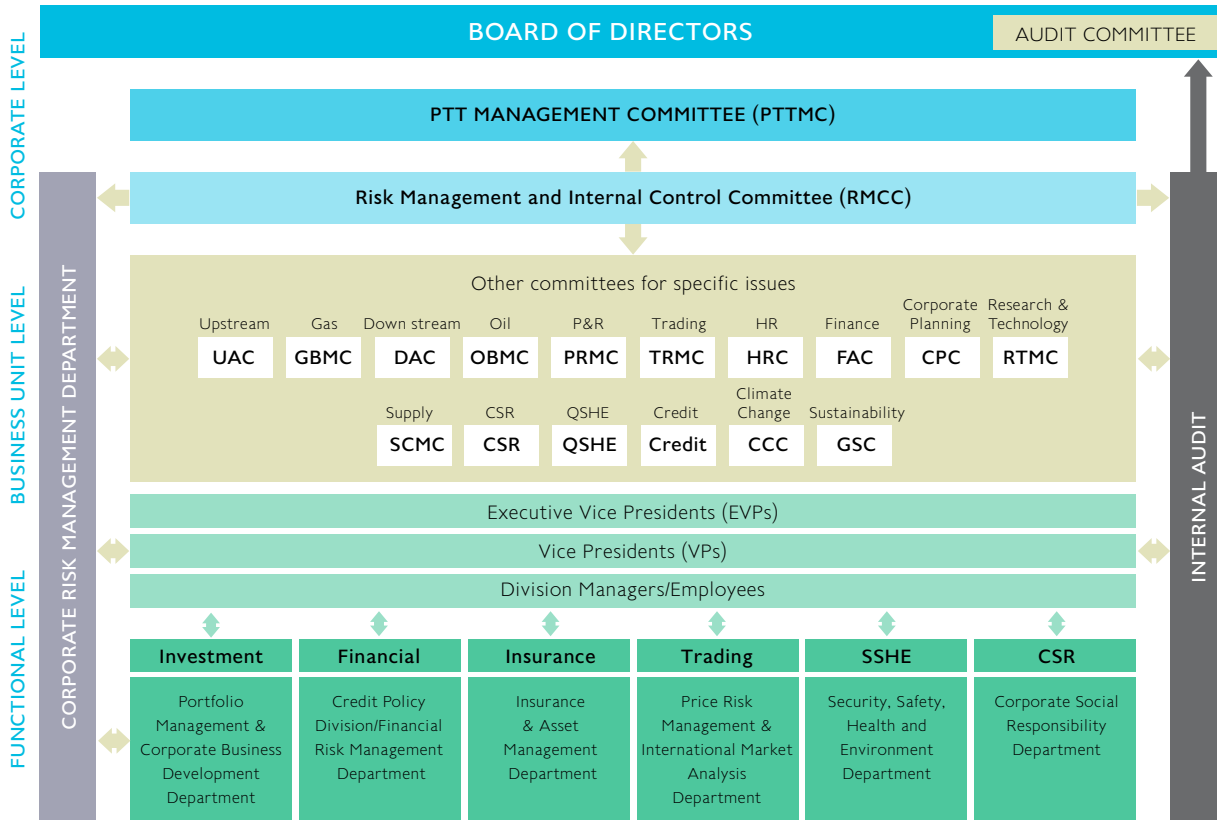
Risk and Crisis Management

Risk Management

PTT is committed to the Enterprise Risk Management Policy. Under the policy, the Risk Management and Internal Control Committee (RMCC) is directly in charge of the effective management of risks. Specialized committees have been appointed to oversee specific internal areas of work for effective and systematic implementation. Corporate Risk Management Department is responsible for managing the risks within an acceptable level. In addition, PTT's 2012 Risk Management Handbook elaborates operation framework and risk management procedures that are corresponding with criteria of the Committee of Sponsoring Organizations of the Treadway Commission (COSO), ERM, and ISO 31000 Risk Management – Principles and Guidelines, all of which are international standards for relevant parties to understand the risk management principles and to apply them soundly.

Risk management is an integral component of all processes in all PTT business operations. Every year PTT develops the Corporate Risk Profile encompassing strategic risk, business risk, operational risk and financial risk. These risks can potentially affect PTT's performances, employees, customers, suppliers, reputation, the public, and the environment. In addition, PTT also takes event risk that may occur during the year into consideration. PTT requires the Risk Management Report to be submitted to the Audit Committee on a quarterly basis. The committee reviews the risk management system to assess whether it is intact in order to ensure effective operation while leaving room for suggestions and recommendations. At the same time, the Office of Corporate Audit performs audit and assesses the efficiency of risk management procedures including provisions of recommendations to improve the risk management work to the Audit Committee and the Board of Director.





Enterprise Risk Management Framework

PTT's risk management framework is interlinked with the entire strategic planning process. A risk management plan has been formulated and implemented to reduce negative impacts. In addition, risk management is monitored and reported. Each year, an annual corporate risk profile is analyzed from potential target value during the next 5 years as well as risk factors of major projects or roadmaps that may prevent each business unit from achieving the operation goal. Additionally, the world's economic trends and Thailand's economic situations that may affect PTT's performance are analyzed. Impacts to each year's net profit, environmental tendencies and climate change, expectations of stakeholders, and opinions from the Board of Directors meeting and the Audit Committee are also considered. Risk owners from all units are required to develop a corporate risk management plan and report a risk management plan to the RMCC.

PTT's risk management extends to a create an opportunity and add values to the business arising from the same risk factors whereby risks are managed through the Portfolio View of Risk method. The method combines both qualitative and quantitative risk analysis to identify and assess potential risk that could occur and affect corporate goals while ensuring that the company can achieve both short-term and long-term targets. This risk factor management will be carried out in tandem with the use of appropriate measures to reduce external threat and to create value from opportunity.

Due to PTT's continuous efforts in 2012, PTT managed to do all the risk management work as stipulated in the corporate risk profile that covered both risk and business opportunity from economic, social, and environmental uncertainties. Details of the risk factors are further described in our 2012 Annual Report. However, material information that may affect our intention to fulfill the sustainability goal is as follows:

Corporate image and public expectation risk

PTT conducts a corporate reputation survey each year to learn demands, satisfaction levels, and attitudes of all stakeholders. Survey results during the past years signal that PTT has an image as entity that is committed to do everything for Thailand and the people. It also has an image as a national oil company with capability to be in a front line to drive Thailand in all major areas in a sustainable manner. PTT therefore identifies public expectation as corporate risk that is subject to risk management procedures and effective mitigation. In addition, based on PTT's action under the sustainability roadmap, investors and stakeholders continue to remain convinced in PTT's position as a corporation that maintains sustainable growth as PTT is now listed as Member 2012/2013 in the DJSI World Index. The achievement allows PTT to compare the operation with other firms in the same business that benefit PTT's future risk management and corporate development.



Risk from environmental and social regulations

As environmental and social related laws and regulations become increasingly more stringent, PTT is making sure that the company is ready to cope with legislative changes that could increase the operation costs or delay of the projects. As a result, PTT requires that risk management is conducted in this area where related agencies monitor and review possible impacts to the operation which resulted from changes of environmental and social laws and regulations. In addition, relevant departments are required to keep a closed contact with the authorities to stay updated and to be able to produce measures and plans in a timely manner. In addition, media relations focusing on community participation should be constantly maintained.

Risk and opportunity from climate change

Although Thailand is not subjected to the legally binding greenhouse gas (GHG) reduction under the Kyoto Protocol; however, due to the increasing concerns over climate change all over the world, new measures, rules and regulations relating to global warming mitigation have been introduced in the country. PTT is aware of the issue and has defined proactive measures to manage the climate change risk by implementing business strategic plan that reflects the increasing concerns related to climate change. The Climate Change Steering Committee (CCC) has been set up under the supervision of the PTTMC to systemize and maximize the way PTT Group pursues the climate change management. In addition, climate change risk assessment has been carried out to assess regulatory risk and physical risk resulted from the climate change, the results of which will be used for further management purpose.

Business Continuity Plan (BCP)

PTT is committed to securing energy for Thailand and protecting interest and maintaining trust, security, and safety of every stakeholder. PTT Group has developed the Business Continuity Management System (BCMS) based on the BS 25999 international standard framework. This covers protection, response, accommodating, and rehabilitation. Actions will take place in 3 phases: (1) Prevent/prepare phase, (2) Response/restore phase, (3) Recovery/restore phase. The Security, Safety, Health and Environment (SSHE) Department, the Corporate Communications Department, the CSR Department, and the Corporate Risk Management Department are core parties responsible for the BCMS under the supervision of the RMCC and the QSHE Committee.

It is a challenge to run a business that can continue to achieve the goal years after years. More often than not, there are unexpected events, natural disasters, and all kinds of threat that could prevent the business from continuing or simply disrupt the operation and thereby harm both properties and lives while simultaneously sending extensive impact to stakeholders. Without the ability to restore the business to normal operations, the corporation may not survive. As a result, PTT feels that it is important to create coordinated corporate management strategies that include preventive measures, preparedness, and promotion of awareness and responsibility in accordance with the BCP.

PTT has formulated preparedness plan to prepare and respond to safety issues and emergency. The plan is broken down into 4 levels depending on engagement with external bodies. To elaborate, it is an event that PTT cannot respond on its own and needs to seek help from local, provincial or national external agency, the emergency will be upgraded to Level 2, 3 and 4, respectively. Responsible person is determined to authorize appropriate management power to each emergency level to ensure effective solutions and to efficiently respond to both public and private agencies and neighboring communities. PTT truly believes that by creating the protection and by having proper devices to help managing the operation for the purpose of business continuity at a time of crisis, the firm will be able to continue winning confidence from stakeholders while creating superior competitive edge at the same time.

- PTT attains the highest scores of 100 percent in risk and crisis management criteria from the Sustainability Asset Management (SAM) 2012's evaluation that covered economic, social and environmental aspects.
- PTT Risk Model has been updated to assess risk in the stress test survey in order to evaluate financial impacts to PTT and other companies within the group amidst financial volatility.
- PTT manages to pass the BCMS Surveillance Audit (BCMS-HO Network) assessed by the ISO Accreditation Institute on the basis of the TIS 22301 business continuity management standard without any deficiencies.
- PTT continues to enhance capacity building for the human resources where in 2012, 28 PTT personnels passed and now become the Business Continuity Certified Planner. This accounts for more than 25 percent of all business continuity certified planners in Thailand.



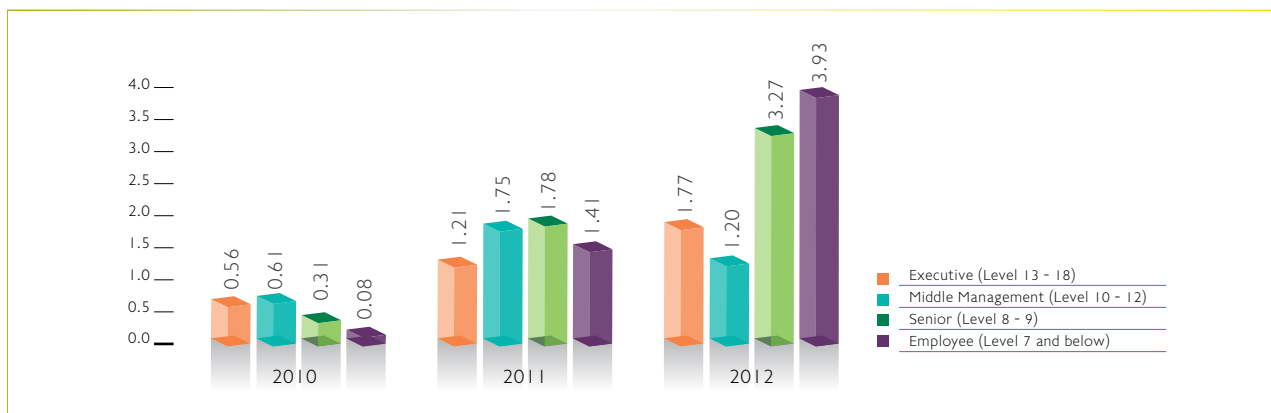
Fair Operating Practice

Code of Business Ethics

In 2012, the Corporate Governance Committee approved an update of PTT Public Company Limited Corporate Governance and Code of Ethics Handbook (CG Handbook). This marked the third time that the CG Handbook has been revised after it was amended the first time in 2005 and the second time in 2009. Last year's update was conducted to ensure that the handbook is synchronized and incorporate the recommendations and opinions made by the Thai Institute of Directors' (IOD) Corporate Governance Assessment Report, the Stock Exchange of Thailand (SET)'s corporate governance principles for listed companies, the State Enterprise Policy Office (SEPO)'s corporate assessment under the Performance Agreement and the Thailand Quality Award criteria, international indicators, and the Code of Conduct under the Thai Constitution. The goal is to make the CG Handbook fully comprehensive so that it can become a standard and a recognized practice in which directors, executives and all employees will comply after signing and acknowledging it. The new CG Handbook is also available on PTT's intranet and website.

PTT's Code of Business Ethics extends to cover legal compliance and respect to international principles of human rights as well as topics such as political support, interests and conflict of interest, confidentiality and use of insider information, treating customers and consumers, treating business competitors, procurement and treating suppliers, community and social responsibility, treating employees, internal control and auditing, giving or receiving gifts or other benefits, SHE, intellectual property, use of computer systems, and protection of whistleblowers.

PTT has required the Code of Business Ethics to be one of PTT employee's competencies. It is used in an annual employee performance evaluation to urge everyone to be competent and to comply with the Code. All new staff will be informed of this subject matter during orientation. Refresher course is given to current staff to keep their understanding intact. The goal is to make sure that all employees are fully aware of corporate governance. In addition, PTT is currently developing the CG E-Learning Program as a means to create awareness and understanding among employees that will also extend to a process to measure the system's effectiveness. PTT has periodically organized activities to communicate and promote CG awareness in various forms such as internal magazine, mobile activity, and town hall meeting with the President and CEO. In addition, employee's understanding of the CG principles and the Code of Business Ethics are regularly evaluated to enhance a communications process and to allow employees to effectively implement the Code of Ethics with their work.



Number of hours of Code of Business Ethics training per employee per year broken down by employee level

Anti-Corruption

Integrity and transparency are the essence of PTT's business operation. PTT has formulated the Transparency and Anti-fraud Management Policy within the company. This refers to a transparent audit and internal control process. Organization structure also formulated on the basis of the good corporate governance followed by communication activities that will establish recognition and practice. In addition, PTT has conducted anti-corruption awareness. Human resources are managed in a transparent manner where corporate value and corporate culture of being a smart employee with integrity is constantly promoted.

PTT has provided a channel where employee can file a grievance and has also established a response process that is fair and quick with a hope that employees will use the channel to monitor company operation on the basis of Corporate Governance and the Code of Business Ethics. Employees can ask questions in case of doubt or if there is any question about business ethics. Employees can file a complaint if encountering inappropriate or unethical behavior or simply ask question at the Office of the President and Corporate Secretary, the Office of Corporate Audit, the Human Resources or their direct supervisor. PTT is keen to listen to all complaints with transparency, care and fairness to every party. In addition, an appropriate timeframe will be catered for investigation purpose. Whistleblower's confidentiality will be kept and prevented from being reprisal during and after the investigation. In 2012, no complaint was made regarding corporate governance. However, department of internal audit and other related departments are currently reviewing the corruption risk management process as well as the whistleblowing policy for a better and more effective coverage.

In addition, PTT is conducting the control self-assessment questionnaires (CSA) based on the internal control and assessment of internal control result guidelines determined by the State Audit Commission. This is to evaluate PTT's own internal control system on the basis of 5 factors of internal control that includes integrity and ethics. The 5 factors are Control Environment, Risk Assessment, Control Activities, Information and Communications, and Monitoring.

The CSA will be conducted once a year as a basis to improve and sharpen PTT's internal control system as well as to adapt the control self-assessment questionnaire to meet the needs of each department, reduce complexity, make it easier to understand and be more accurate. In 2012, new questions regarding corporate governance assessment were added to the questionnaire for clarifying purpose.

Since 2010, PTT has been one of the first 27 companies expressing their intention to be part of the Private Sector Collective Action Coalition against Corruption (CAC), a national project supported by the government and the National Counter Corruption Office (NCC). The coalition has organized several anti-corruption campaigns, the latest of which was on October 17, 2012 where a seminar entitled "Practices regarding the certification process to become member of the Private Sector Collective Action Coalition against Corruption" was held by the Thai Institute of Directors (IOD) who was the CAC's Secretariat. The seminar explained the entire certification process and it also distributed a self-assessment survey to companies signing and thereby committing to become the CAC's members. PTT is currently working on the certification process to acquire status approval from the CAC in the future.

In 2012, PTT found no material issue with regards to anti-competitive behavior, anti-trust, monopoly, discrimination and corruption. In addition, there was no fine or non-monetary penalty resulted from violation of the relevant laws as well as violation of the Code of Ethics.

Human rights

The Board of Directors, executives and all employees are to respect different rules, customs, traditions and cultures in countries where PTT has investment or operates in. In addition, they must commit to the international principles of human rights. PTT personnel must not support businesses that violate human rights where compliance shall be exercised on the basis of PTT's Code of Ethics and compliance to the international principles of human rights and the PTT Group CSR Policy and Framework that has human rights as one of the components for voluntary compliance. PTT also actively supports the international principles of human rights by joining the United Nations Global Compact (UNGC) on March 1, 2012 and is currently urging companies within the group to do so as to signal that PTT Group will implement the principles of human rights and labor rights, environmental conservation and anti-corruption at the international level as business operation approach.

Furthermore, PTT is promoting and supporting basic human rights on a practical level. PTT supports the government's policy such as compliance with the National Human Rights Plan No. 2 (2009-2013) which consists of 4 strategies, 14 sub-strategies, and 43 tactics which was approved and announced by the Cabinet on October 20, 2009. The government requires relevant authorities to transform the policy into action plans and to organize activities to underline actions thereunder. PTT has implemented these strategies and tactics in several areas including building personnel's capacity in human rights, promoting a sound exercise of power by the authorities, woman executives, surveillance of human rights violation, promotion of news and information consumption, enhancing capacity of network organizations to promote and protect human rights, etc.

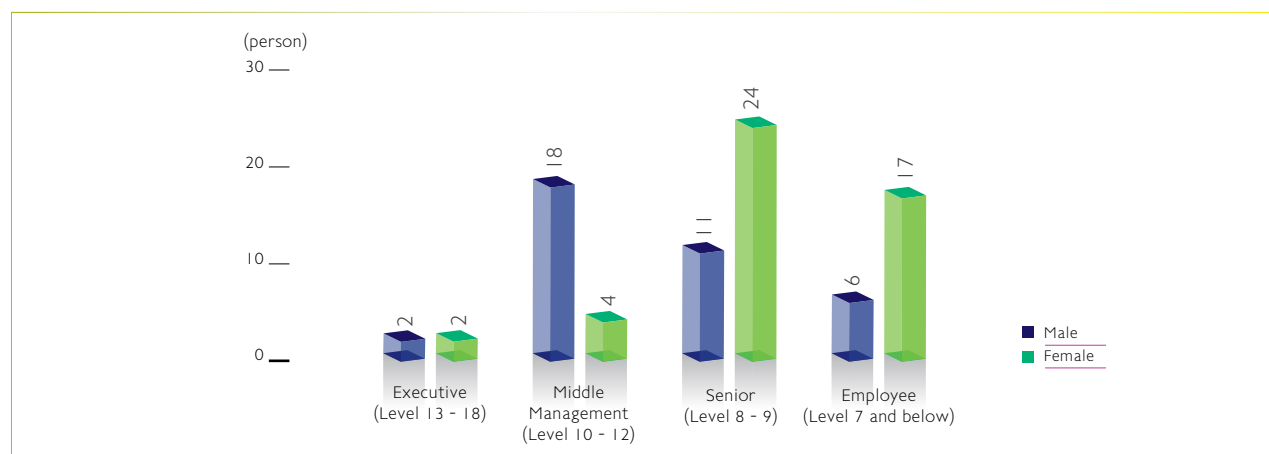


Building personnel's capacity in human rights

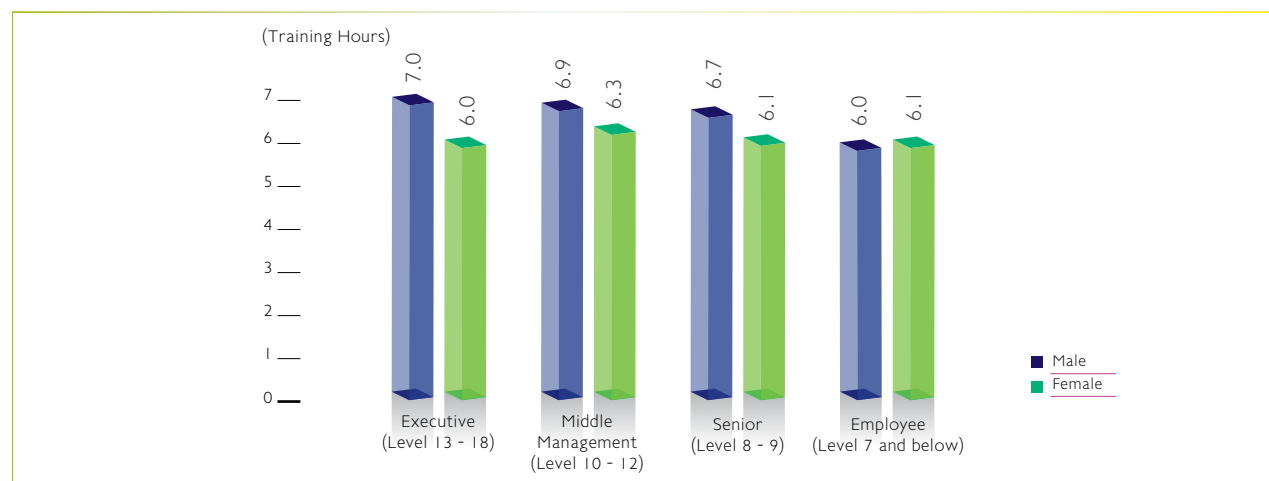
PTT respects for human rights under the Universal Declaration of Human Rights. The company respects labor rights under legal principles and supports government's policy where all principles and rules regarding human rights are applied as a basis to manage human resources in a sustainable manner and to develop the working system for transparency, fairness, equality and recognition by employees all over the company. Information on human rights has also been incorporated into PTT's employee manual.

In 2012, to increase understanding and to promote the application of human rights, PTT initiated one-day training to the HR Department's personnels, who are the first group of employees to be exposed to such training. The training focused on establishing an understanding of major requirements when managing human resources on the basis of international principles and sustainable HR development. During the training, participants shared their experiences in labor relations management, labor laws, and how to handle labor disputes on the basis of labor rights. The event aimed to provide HR personnel with knowledge of HR management principle and to drive the human rights and labor rights compliance policy to PTT employees in other departments.

In 2012, 84 HR personnel out of a total of 135 attended the Harmonizing by Human Rights training course. Details are as follows.



Number of human rights trainees classified by employee level and gender



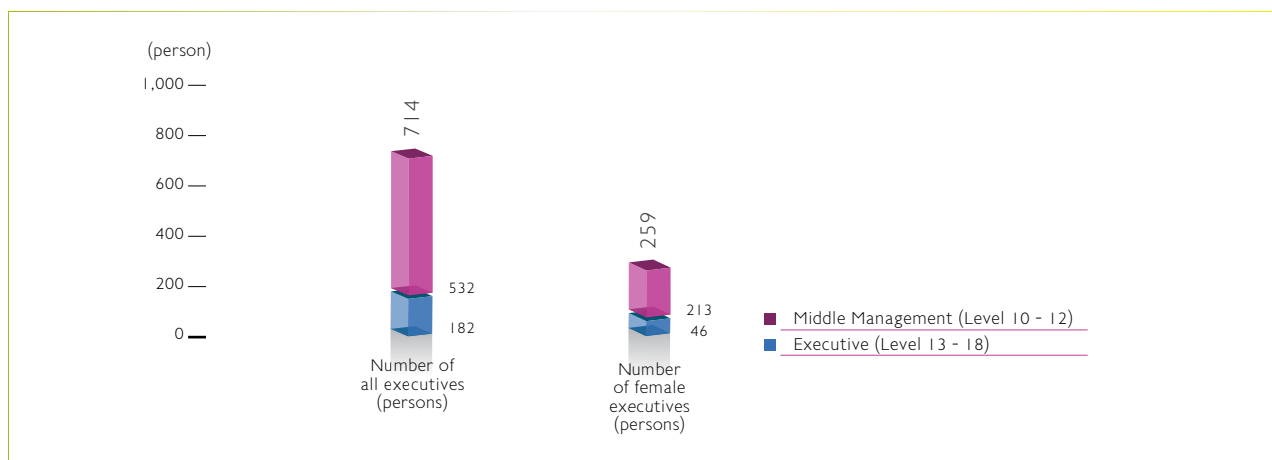
Number of average training hours in human rights per employee per year classified by employee level and gender

Promoting a sound exercise of power by the authorities

In 2012, PTT organized training for employees who are responsible for security matter on the appropriate way to examine people and properties in order to maintain security without violating human rights. Security chiefs, security officers and operation-level staff participated in the training which was organized under the “Khun_Khem_Kheng” (ethics, strictness and strength) campaign at 11 PTT offices including: PTT’s headquarter, Phrakanong Oil Terminal, Bangchak Petroleum Oil Depot, Khao Boya Gas Terminal, Surat Thani Petroleum Terminal, Rayong Gas Separation Plant, PTT Global Chemical Public Company Limited (Refinery and I-1), Thai Lube Base Public Company Limited, PTT Tank Terminal Company Limited and Energy Complex Company Limited. In all, 252 participants attended the training.

Female Executives

PTT’s sustainable HR management policy and guideline was designed on the basis of the UN “Protect, Respect and Remedy” Framework of Business and Human Rights 2011 and the OCED Guidelines for Multinational Enterprises. The guideline is used to plan and monitor HR management for fair and equitable treatment to employees at all levels. This is in line with Section 15 of the Labor Protection Act, B.E. 2540 (1997) which states that “employer shall treat both male and female employees equally unless otherwise prohibited by nature of work.” It is also in accordance with Article 30, paragraph two, of the Constitution of Thailand which declares that “Men and women are equal.” Therefore, PTT is an employer with equal opportunity unless limited by nature of work or unless there is other fair and legitimate reason that contributes to PTT’s status as a corporate governance company in the management and that significantly affects PTT staff’s commitment to the company.



Female executives

Surveillance of human rights violation/ Promotion of news and information

PTT has systematically established a grievance mechanism where there is a grievance channel and a process to fairly supervise the grievance filing. Priority is given to confidentiality and respect for human rights principles. Grievance process focuses on promoting an understanding between employees and between employees and the corporation. A committee is established to examine and make a decision on a case-by-case basis; a representative of the HR Department appears as a member of the committee. Employees may officially file grievance to the HR Department of each business unit. They may also make their complaint at the Employee Relations Management, the HR Department, and the Labor Relations Grievance System in the company's intranet which was launched on July 1, 2012 or through the Joint Consultant Committee in several local areas. In 2012, 2 employees filed their grievances through the Labor Relations Grievance System which the Employee Relations Management have already resolved the problems before notifying concerned parties through such grievance system as well as by e-mail.

PTT Public Company Limited State Enterprise Union is an independent agency with a major role to engage in the examination and ruling process as well as to resolve grievance that has large impacts to employees through the committee which consists of representatives from the management and the union itself. The committee, which meets monthly, has the responsibility to provide opinions on enhancing the company's operation efficiency, to update work regulations for the benefit of the company and staff, seek compromise and reduce corporate conflicts, provide advices based on staff's grievances and improve terms of employment. In 2012, one grievance was filed to the PTT Public Company Limited State Enterprise Union through the committee. The grievance, which concerned a request to amend the staff's title based on his education certificate, was duly resolved.

PTT also feels that disseminating human rights information to a wider audience is an important task. The Employee Relations Management has distributed human rights leaflets to employees and customers at various PTT premises. The leaflets also contain other information such as rights of the alleged criminal offender, the fundamental state policy, children's rights, women's rights, citizen's rights, political rights, community rights, rights of ethnic minority, rights of the disabled, migrant labor's rights, and labor rights.

Enhancing capacity of network organizations to promote and protect human rights

PTT is urging human rights compliance among the investors, suppliers and contractors. The sustainability practice of PTT's suppliers also contains a topic of human rights. In other words, when considering to investment or engagement with suppliers or contractors, human rights compliance and compliance to Thailand's labor laws will be major factors taken into consideration by PTT.

PTT is supporting International Labor Organization. International labor practices are applied to supervise and take care of rights and liberty of PTT's employees. This includes, for example, employee gathering at a labor union, disclosure and consumption of news and information of changes in business and corporation in advance, freedom of expression, etc.

Responsibilities towards stakeholders

PTT is well aware that stakeholders play a significant role in determining the company's business direction. PTT emphasizes the importance of engaging all stakeholders, both internal and external, to promote sound engagement when required. PTT classifies the stakeholders into 6 groups and as set in the company mission to respond to the needs and expectations of each group of stakeholders in a balanced manner. Past actions and results of a satisfaction survey of various groups of stakeholders show that PTT's stakeholders engage with the company on a meaningful basis.

PTT requires the senior executives to effectively communicate vision, missions, and values and to transform them into actual implementation through leadership and strategic planning. The PTTMC discusses with the Board of Directors to determine business directions and guidelines. Each department then will formulate the strategic plan for the purpose of integration, flexibility, and good response to all stakeholders based on PTT's missions on a balanced manner.

Senior executives will communicate PTT's vision, missions and values to all groups of stakeholders through a pre-determined channel frequently. Communication is made through several channels; for example, an executive can communicate with employees informally after an information brief. Official communication can be made via surveys and questionnaires given to employees and stakeholders which are conducted annually. Results and analysis will be presented to the PTTMC to improve both the means and the channels. One of the examples is when the PTTMC approve the sharing of vision, missions and values through a social network such as Facebook that would allow stakeholders to get access and learn PTT's vision, missions and values in an user-friendly way.

Since 2008, PTT has included engagement and participation of stakeholders as one of the CSR Framework's elements. Related departments are required to comply therewith while stakeholders themselves are periodically reviewed to ensure sound and effective engagement. The procedures can be summarized as follows.



Mission to respond to needs/expectations of stakeholders and examples of engagement channels of various groups of stakeholders

Stakeholders	Missions to respond to concerns/expectations	Examples of stakeholder's engagement	Engagement Progress
Country means public agency, policy maker, the press (national/regional), opinion leader and private company.	To provide long-term energy security by supplying quality and standardized energy in an adequate amount and with a fair price to support the economic growth.	<ul style="list-style-type: none"> Through the negotiation of SEPA indicators early in the year to respond to the public sector's need as one of Thailand state enterprises in the energy sector having Finance Ministry as a major shareholder and Ministry of Energy as an oversight. 	More details can be found under the Sustainable Business topic in this Report.
Society/Community means community, the general public, youth and education institution.	To be a good corporate citizen, running a business while managing environmental impacts based on international standards and engaging in improving wellbeing to the society and community.	<ul style="list-style-type: none"> Activity such as public hearing. All kinds of media. Electronic media such as website, Facebook. Print media such as press release. Video. Other media such as mobile exhibition. 	More details can be found under the Corporate Citizenship topic in this Report.
Shareholder means shareholder, investor, entity and institution investing in the stock exchange.	To conduct a commercial business that yields attractive returns and expansion of business for continuous and sustainable growth.	<ul style="list-style-type: none"> Activities for shareholders/debenture holders, institutional investors such as the AGM to report performance and to answer questions; The Executives Meet Investors event to meet shareholders during the annual company visit. Print media such as Annual Report, Financial Statements, the Sustainability Report, quarterly newsletter for shareholders and quarterly financial statements. 	More details can be found under the Shareholders topic in 2012 Annual Report
Customer means industrial client and consumer.	To build customer satisfaction and relations by offering quality products and services of international standards at a fair price.	<ul style="list-style-type: none"> Direct contact such as meeting, visiting, training, customer seminar attended by senior executives. IT-based contact such as phone call, fax, website, electronic media and the Customers Relations Center. Customer satisfaction survey. 	More details can be found under the Products Stewardship topic in this Report.
Business Partner means supplier, deliverer and business partners.	To jointly run a business on a fair basis with intention to create trust and collaboration to enhance long-term business potential and efficiency.	<ul style="list-style-type: none"> The Annual Supplier Seminar to present desirable work patterns set by corporate values under a joint business policy for effective work collaboration. Set the value as one of the criteria for the selection of suppliers and for awarding the most outstanding gas station. 	More details can be found under the Supply Chain Management topic in this Report.
Employee means executive, employee and worker.	To support employee's ability to handle work as professional; to provide confidence in better work/life quality for employees compared to other leading companies to reinforce employee's commitment to the company.	<ul style="list-style-type: none"> Meeting, seminar, training and activities. Print media such as books, manuals, internal journals. Electronic media such as What's News. Video. Linking corporate value with the HR management system to change employee's work patterns. 	More details can be found under the People topic in this Report.

Our Priorities

Supply Chain Management

PTT and its subsidiaries operate a comprehensive petroleum and petrochemical business along an entire supply chain of the petroleum business. This includes exploration and production of crude oil, managing crude oil tankers, operating refineries, petrochemical plants, petroleum terminals and transmission pipelines, service station network as well as conducting international trading. The values of its purchasing and procurement have already exceeded 100 billion Baht involving an extensive network of suppliers. Thus, it is extremely important for PTT to invest the effort in the subject of supply chain management and to allow its suppliers to sustainably grow with PTT on the basis of the PTT Suppliers Sustainable Code of Conduct.



PTT has set the procurement structure with clear roles and responsibilities into two categories: procurement of hydrocarbon products required for production process and procurement of non-hydrocarbon. In 2012, there were 5,139 suppliers with recorded procurement values exceeding ten billion Baht. PTT's procurement activity is diversified to each business unit.

PTT is committed to the principles of integrity, transparency, fairness and accountability when managing and conducting business with suppliers. To ensure that the business can continue on a sustainable basis, PTT has laid down a foundation for suppliers through the PTT Suppliers Sustainable Code of Conduct whose contents and scopes are in sync with relevant rules, regulations, and laws. The Code of Conduct sets standard for PTT's suppliers to conduct their businesses on the basis of the Code of Business Ethics with respect to human rights, employees' health and safety, and the environmental.

To manage supply chain risks including human rights risk, the company has required that risks are evaluated based on PTT's risk management handbook. Executives from relevant agencies must manage the risk to an acceptable level. In addition, the Risk Management and Internal Control Committee will supervise and offer opinions regarding the effectiveness of their risk control. More details on risk management are presented in PTT's 2012 Annual Report.



Supply Chain Management is a system that links an entire network of suppliers, manufacturers and distributors to administer their delivery of products or services to customers. Data on raw materials, products and services, capital and delivery activities are populated into the system to facilitate coordination within the supply chain network. Under the principle of information integration and linkage, Supply Chain Management system is used to ensure that the delivery is effective, punctual and responsive to customer needs, which drive down shipping costs and increase the system's efficiency.

Hydrocarbon Procurement

In order to deliver premium products to its customer, PTT focuses on the quality of finished oil products, LPG, and biofuel it procures from suppliers. PTT strives to deliver its products in a timely, accurate, transparent, and environmentally sound manner. The company also supports adding value to its products throughout the PTT Group supply chain.

PTT's policy is to conduct business in a fair, sustainable, and accountable manner as well as provide good governance in its dealing with the community, society and environment. This policy is also applied to PTT's dealing with suppliers. Stipulations on environmental and social sustainability are included in all PTT's short-term and long-term contracts with refineries and biofuel suppliers. PTT Environmental, Social and Governance (ESG) factor is one of the criteria for assessing the minimum quantity or quality of the vendor in both new and existing contracts. Quality, economics, community, health and safety, and environmental risks are evaluated in accordance with supply chain management strategy.

PTT complies with the Quality, Safety, Health and Environment Policy to control, prevent and reduce risks, and to preserve ecology and biodiversity.

For land transportation, PTT prefers oil to be transported through transmission pipelines of both Thai Petroleum Pipeline (Thappline) and Fuel Pipeline Transmission (FPT) to reduce environmental impact from transport truck's engine combustion and minimize accident. This policy has resulted in reducing more than 3,000 trucks to pass through Bangkok and its vicinity per month.

For maritime shipments, PTT has created the PTT Group Ship Vetting Standard to vet vessels not qualified for shipping transport or which are at higher risk of being involved in accident. In addition, PTT has formed an alliance with refineries and major oil suppliers to help relieve marine accidents. PTT has also become a member of the Oil Spill Response Limited (OSRL) to receive assistance and to lessen marine environmental impact in an event of oil spills. This is one of the guidelines under PTT supply chain management strategy regarding social and environmental risk.

Supplier Selection, Audit and Evaluation during the selection process,

PTT gives the potential suppliers the opportunity to demonstrate their reliability and ability to respond to PTT's needs. Supplier evaluations are based on the principles of PTT's business security as well as the supply chain management strategy for the procurement of finished oil products, LPG, and biofuel. In 2011, PTT conducted a four onsite audits with its Tier 1 suppliers, most of whom were companies under PTT Group with high volumes and values of transactions. The four were Thai Oil Public Company Limited, PTT Global Chemical Public Company Limited, Star Petroleum Refining Company Limited, and Energy Absolute Public Company Limited. The onsite audits were conducted to jointly identify economic risk from oil loss, to formulate corrective action plans, and to conduct post-corrective action plan evaluations. The onsite audit helped reduce damage from oil loss by no less than 70 percent.

PTT has put in place the supplier audit and evaluation system to manage sustainability risk in its supply chain. The system takes into consideration quality, volume and delivery of goods and services as well as minimum requirements according to the labor and environmental laws and quality management systems such as ISO 9001, ISO 14001 and OHSAS 18001 as well as

PTT's code of conduct. All procurements with PTT's suppliers emphasize product and delivery safety as well as good governance of the supplier.

PTT conduct supply co-ordination meeting with the refineries monthly and face-to-face customer satisfaction survey feedback to address issues concerning the delivery of oil products and to find common solution to solve the problems. In some cases involving economic, environmental, and social risks, PTT will conduct an onsite audit with the supplier to find the root cause of the problem, determine the path forward, and evaluate the response.

In 2008, PTT started an evaluation program for its biofuel (Ethanol/B100) suppliers which are generally small companies. Assessment questionnaire is used for preliminary evaluation of the supplier and an onsite audit is conducted as a follow-up to determine product quality as well as environmental and safety performance.

For refinery suppliers, monthly supply co-ordination committee meeting is conducted instead of a formal assessment. However, starting in 2013, PTT will hand out assessment questionnaires to these suppliers.

Supplier Assessment	Number of Supplier Assessed	Remarks
2012	20	Assessed the delivery of Biofuel (Ethanol/B100) of suppliers. Four of the 24 suppliers were not assessed because there were no business transactions.
2013 Target	30	Additional assessment is expected due to anticipated transaction with Ubon Ethanol.
Percentage of Tier 1 and corrective action plan	100%	Thai Oil has formulated a corrective action plan regarding oil loss while weight-bridge calibration was carried out with biofuel suppliers.

Performance Indicators

PTT commits to enhance supplier's operation capacity so that they are in sync with PTT's business operation policy and direction for sustainable development and growth of both parties. As a result, PTT has introduced a work plan that will enforce the greenhouse gas emission, evaluation of product carbon footprint and control and reduction of volatile organic compound at workplace. In addition, zero logistics transportation accident will also be enforced with refinery suppliers and third party logistics within 2013 before being subsequently extended to other suppliers. PTT also plans to educate and encourage all biofuel suppliers to be accredited by the ISO 9001 quality management assurance system.

Value optimized through PRISM

PTT has introduced an initiative project called "Group Integrated Supply Chain Management and Optimization" (GISMO) with refineries under PTT Group (Bangchak Petroleum Plc., Thai Oil Plc., PTT Global Chemical Plc., and IRPC Plc.). The object is to increase competitiveness and create synergy within the petroleum supply chain where information of facility use is shared among one another to reduce capital investment and to generate higher benefit for the PTT Group. The GISMO initiative boasts five major projects; namely, Petrochemicals and Refining Integrated Supply Chain Management (PRISM), Group Logistics Management (GLM), Supply Chain Optimization (SCO), Indochina++ and Multinational Trading House (MTH).

The PRISM project is a result of collaboration between the PTT refinery group and its petrochemical business. This reflects the creation of value and synergy for the PTT Group which has been going on since 2007 under the name of the Oil Integrated Supply Chain Management project where the collaboration has been expanded into PRISM since 2011. During its first year, as much as 72 million US\$ added value was created. It was expected

that added value of no less than 120 million US\$ would be generated from six workstream under PRISM in 2012.

PRISM collaboration includes, among a few, a creation of value under the Petroleum Product Management Workstream. Following an information-sharing forum, technology and innovation regarding IRPC's bio hydrogenation diesel (BHD) was further enhanced after the information of utilization rate was shared by the Diesel Hydrotreating Unit (DHT). As a result, PRISM combined what had been lively discussed at the forum with the PTT R&D Center's project on green diesel before successfully giving birth to the BHD, a product resulted from the refinery of palm oil together with diesel in the DHT unit and of which the utilization rate was increased in order to turn the product into value-added and environmental-friendly diesel. IRPC has already patented the BHD production process with the DHT unit as part of PTT's goal to be the technology-based company.

PTT has introduced measures to constantly examine and assess suppliers in the finished oil products, LPG and biofuel procurement supply chain process. This refers to when the product is being delivered at supplier's refinery or factory in every delivery mode where PTT employees will examine volume of the product, its quality, safety and its social and environmental impact. Should any error or defect is found, supplier refinery or factory will be immediately informed to seek a solution and the event will be recorded as non-performance before relevant refinery/factory is officially notified to avoid repeated mistake. A case in point is when unusual volume oil was transmitted through Thai Oil's Thapline to PTT. PTT coordinated with Thai Oil to look for a possible cause. A joint working committee was set up between PTT and Thai Oil to resolve the problem. In the end, an error regarding the transmitted oil volume was found and instead of measuring oil in a tank as practiced by Thai Oil, an oil-measuring device was introduced instead. This device was constantly monitored and PTT and Thai Oil subsequently joined hands to regularly check the measuring device on a scheduled date.

Non-Hydrocarbon Procurement

At present, the PTT suppliers sustainable code of conduct has been enforced with suppliers whose contract value is worth 2 million Baht or higher. The code of conduct is also enforced with suppliers whose work have environmental and safety impact. During the past year, there were 574 projects with contract value exceeding 2 million Baht, of which 242 suppliers (42 percent) signed PTT's code of conduct. In an effort to increase participation, PTT also distributed the PTT suppliers sustainable code of conduct to its supplier relationship management seminar attended by PTT's major suppliers where 111 suppliers signed and pledged their compliance to the Code. As a result, during the past year, a total of 353 suppliers had committed to the PTT suppliers sustainable code of conduct. PTT has a plan to solicit more signatures from suppliers. A handbook of the PTT suppliers sustainable code of conduct was drafted to allow suppliers to understand an actual practice as well.

In 2012, PTT organized three suppliers relationship management seminars to encourage information sharing between PTT and its suppliers. The seminars also aim to enhance supplier's performances, business continuity and social responsibility so that they, too, are ready to support PTT's operation.

Supplier Selection

The PTT approved vendor list has been created to select potential suppliers to engage in transactions with PTT in a systematic and fair manner. In 2012, PTT required suppliers whose names were in the list to answer pre-qualification questionnaire (PQ) in order to evaluate their potentials in various aspects. Product suppliers are evaluated in six areas; namely, business potential, production, stock and product quality, transportation, industrial standard, safety, health and environmental standards, and service standard. Service suppliers are assessed for their business potential, readiness to provide such service, industrial standard and service provision.

In addition, to manage risk incurred from product delivery, PTT has stipulated conditions in the Terms of Reference to ensure that supplier's operation is conducted in compliance with relevant legislations; and that suppliers comply with executed contracts especially those involving risk as in the case of health and environmental safety. In 2012, PTT initiated a pilot project to assess risk levels of contractor's work, designed to select potential contractors. Suppliers whose scores are lower than a required level will be disqualified. During the past year, no suppliers or contractors had been found to violate Thailand's labor laws.

Year	PTT Supplier selection process
2012	Registration was opened to list suppliers providing 24 groups of work out of the total 280 groups of work, or 8.6 percent. 177 suppliers going through evaluation after answering the questionnaires were eventually registered. All suppliers must pass both commercial and technic appraisals and all PTT suppliers were to sign the PTT suppliers sustainable code of conduct.
2013	Supplier's work groups whose work may have high business impact and risk to PTT will be analyzed for information which will be a basis for supplier selection as soon as registration is opened. In addition, the PTT suppliers sustainable code of conduct audit will be carried out.

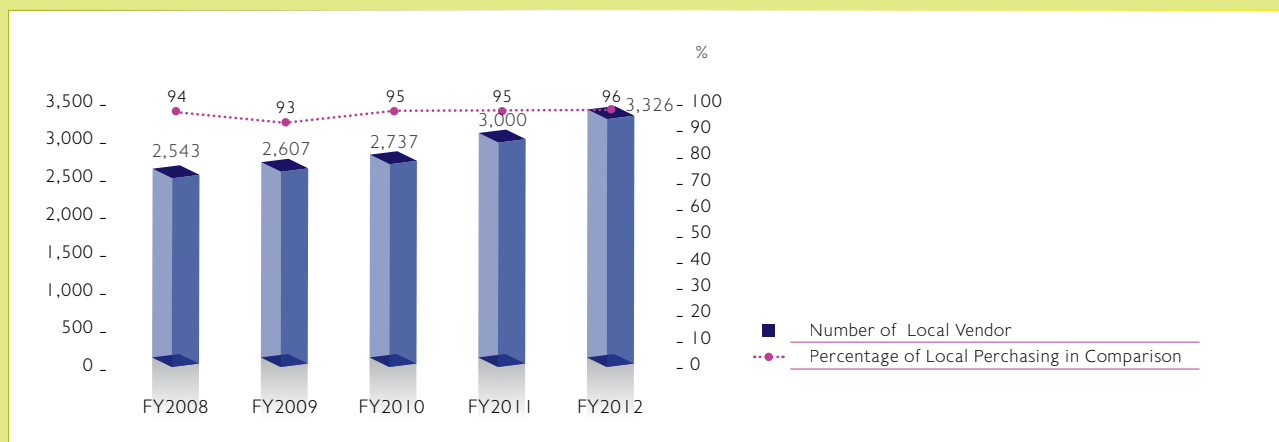


PTT Gas Separation Plant in Rayong province scheduled a turnaround, a high-risk task involving a large number of contractors. In addition to a usual examination of contractor's performance (e.g. issuance of work permit and conducting safety audit), GSP added extra activities to promote SSHE awareness during the turnaround. GSP advised contractors from each company to promote the SSHE project in their firms through activities such as a tool box talk, a daily meeting with the company's SSHE staff to review its SSHE operation, SSHE areas that need to be improved, and SSHE best practice for participating contractors to learn and enhance their SSHE capacity. GSP evaluated contractor's SSHE performance and issue certificates to contractors who achieved SSHE standard as an incentive for them to pay attention to the SSHE activity. PTT also allowed its security officers to constantly check and provide operational advice at all time. As a result, no major accident was recorded at the turnaround during the past 2-3 years.

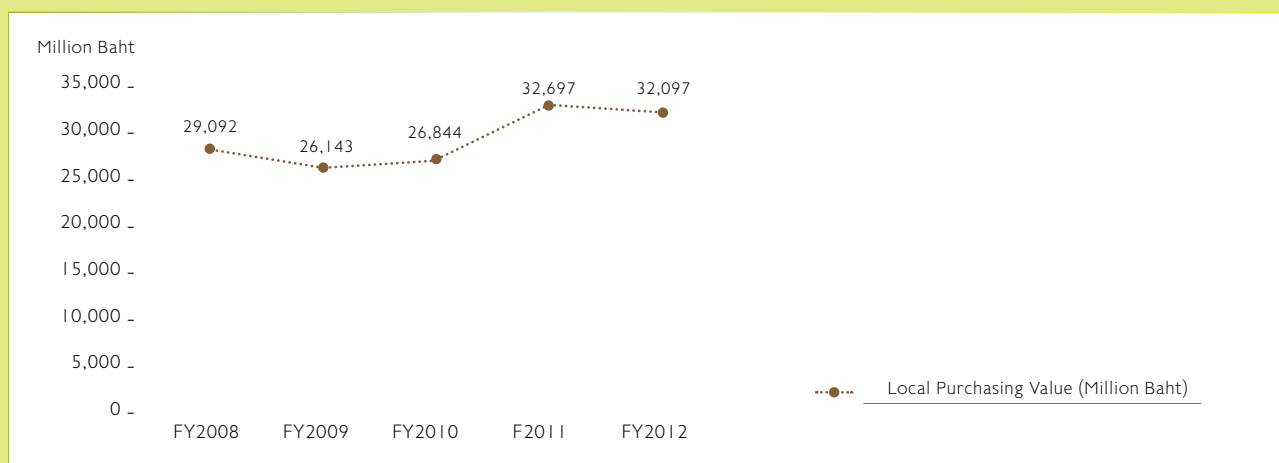
Local Procurement

Since PTT operates in various areas throughout the country, the definition of local, therefore, shall refer to Thailand. PTT feels that local procurement is extremely important and this has reflected this belief in its requirement that procurement from Thai suppliers and businesses are recommended and encouraged as part of PTT's procurement policy. Based on the company's procurement records, during the past five years PTT has procured more than 90 percent of its products locally. This not only generates capital flows within the Thai economy but also promotes procurement from areas where PTT operates. Local procurement policy helps generate incomes and promote job opportunities in communities where PTT operates as well. If one is to look at this issue from the business point of view, when the cost of products or services are considered on the basis of the Total Cost of Ownership (TCO), local suppliers will have more advantages when it comes to issues such as transportation cost and ease of contact and service.

PTT urges its suppliers to take care of communities and to procure locally as this helps reduce the product cost as well.



Locally-based Supplier






Local Purchasing Value (Million Baht)

Product Stewardship

Product Safety

Realizing the importance of safety of its products and services, PTT has set research and development and procurement of safe and environmental-friendly products as part of the PTT's Quality, Safety, Security, Health and Environment Policy while allowing related business units to manage their safety. PTT has come up with a list of products and services and an assessment of health and safety impacts starting from development of product concept to raw material evaluation as well as risk management of major process through life-cycle stages of relevant products and services. Details are as follows.




Safety assessment	Oil 	Natural Gas 	International Trading 
Products and services	<ul style="list-style-type: none"> • Gas station • Petroleum terminal • Finished oil products • Lubricants • LNG 	<ul style="list-style-type: none"> • Natural gas separation plant • Natural gas pipeline • Natural gas for vehicles 	<ul style="list-style-type: none"> • Product trading • Transport service • Price risk management
Development of product concept	●	●	Not relevant
Research and development	●	Not relevant	Not relevant
Certification	●	●	Not relevant
Manufacturing and production	●	●	Not relevant
Marketing and promotion	●	●	Not relevant
Storage distribution and supply	●	●	●
Use and service	●	●	Not relevant
Disposal, reuse or recycling	Not relevant	Not relevant	Not relevant

In 2012, PTT started the PTT Group Logistics Zero Accident Project to improve safety standards of product transportation and distribution to its customers and consumers. The project aims to assess and analyze causes of accident, prevent accident from happening, provide a safety management system, and promote safety culture within the PTT Group's raw material and product logistics to employees and related stakeholders.

As a result of our focus on products and services safety, in 2012, PTT found no legal violation in any of our operations. There were no practice of non-compliance with laws and regulations concerning PTT's products or services which resulted in fines. PTT's marketing activities were within the laws, standards, and voluntary codes of ethics. In addition, no substantiated complaints regarding breaches of customer privacy and loss of personal data were claimed.

Safety Information of Products and Services

All PTT products and services including logistics fleet, are required to have appropriate safety information and signage that are in compliance with laws, regulations, and international standards. Moreover, PTT provides additional information relating to a particular product and service that helps customers make an informed decision. PTT does not misrepresent our product and services or attempt to influence vulnerable audiences in any of our marketing. Every advertisement media are approved by the TV and radio advertisement examination board. Additionally, PTT regularly conducts customer seminar and customer visits to provide customer with better understanding in PTT's products and services as well as listen to customers concerns and comments.

Information of products and services	Oil 	Natural Gas 	International Trading 
The sourcing of components of the product or service	●	●	●
Content, particularly with regard to substances that might produce an environmental or social impact	●	●	●
Safe use of the product or service	●	●	●
Disposal of the product and environmental social impact	●	●	Not relevant

The Natural Gas Business Unit has assessed health and safety impacts through a product's life cycle on the basis of the Hazard and Operability Studies (HAZOP). The assessment starts from the design process and includes comprehensive risk assessment of all activities. All PTT's natural gas pipelines are designed according to the ANSI B31.8 International Safety Standard, the production and delivery process on the basis of the TIS/OSHA 18001 Standard, and pipeline maintenance system on the basis of the ANSI B31.8 Standard. As a result, PTT's natural gas pipelines have high record of reliability and safety for both our operators and surrounding communities.

PTT invites our customers to share experiences and express opinions on natural gas safety and usage through various activities such as "Power Plant Knowledge Sharing" seminar. Safety training is provided for new customer prior to initial use. Our industrial customers are offered In-Plant Service safety training.

All natural gas products are accompanied with the Material Safety Data Sheet (MSDS) which contains components information, potential danger, product usage, handling, storage, and disposal as well as handling procedure in case of emergency. Customers can obtain quality information of all PTT's natural gas products by requesting for the Certificate of Analysis (COA) from the natural gas separation plant's Customer Service Center (CSC). Safety and warning signs are placed throughout the pipeline and on every truck. Gas components information are displayed on the block valves level on PTT's website which is updated every five minutes and can be accessed anytime.

Environmentally Friendly Products and Alternative Energy

Striving to respond to customer's demand for safe and environmentally friendly products, PTT is inventing and developing more green products. Innovative production is a part of PTT's Green Growth Roadmap strategy. The Roadmap reflects PTT's strategy for environmentally friendly operation guideline which addresses environmental issues through three dimensions of product, process, and social awareness.

PTT Group has more green products coming down the production line with plans for market launch in the future. An example of a green product is our bio-degradable plastic such as the Amazon Bio Cup, a bio-based plastic. The Amazon Bio Cup is a result of collaborative innovation efforts within the PTT Group; the cup is made with Polybutylene Succinate (PBS) plastic which is naturally degradable. In addition, innovative ink used on the cup has far less odor than traditional ink and can be returned to nature without damage to the soil and the environment.



Invent and Develop
Environmentally friendly
products.

GREEN PRODUCTS



Regarding social awareness, PTT plans to push for an accreditation of the product's environmental friendliness through the PTT Group green label mechanism carried out on the basis of the international standards and guidelines to promote effective social awareness of PTT's environmentally friendly service.

More detail on social process and awareness can be found in the next chapters in this report.

PTT is Thailand's first distributor of low-sulfur diesel and lead-free benzene. It continues to develop our products for the sake of environment and for a better wellbeing of Thai people. It has come up with a long-term plan to expand its biofuel offering which is in line with other energy policies such as the renewable and alternative energy development plan in response with Thailand's increasing demands for biofuel. In addition, PTT has distributed PTT Blue Innovation products since 2010. This refers to eight high-quality fuel products made from premium technology which is PTT's exclusive formula that materializes ultimate combustion, increases engine acceleration rates, allows cars to fully function while reducing engine wear-out. The eight PTT Blue Innovation products are PTT Blue Diesel, PTT Blue Diesel B5, PTT Blue Gasoline 95, PTT Blue Gasoline 91, PTT Blue Gasohol 95, PTT Blue Gasohol 91, PTT Blue E20 and PTT Blue E85.

In 2012, PTT bought 183 million liters of ethanol and 191 million liters of biodiesel (B100) from domestic producers to produce Gasohol, E20, E85 and diesel mixed with biodiesel to promote the use of biodiesel in the country's transportation sector. The purchase of ethanol and biodiesel are in line with the Ministry of Energy's Department of Energy Business policy on the nature of quality of biodiesel.

Biofuel in Thailand (million liters)	Sales amount			
	2010	2011	2012	2013
Total Fuel Sale	13,953	15,038	15,741	15,890
Bio-Gasoline (Gasohol)	1,376	1,404	1,569	1,662
Bio-Diesel (B2-B5)	5,742	6,163	6,161	6,381

PTT has a target to increase a number of gas stations providing E20 biofuel as part of an attempt to reduce the greenhouse gas (GHG) emissions and decrease fossil fuel dependency. To that end, PTT has increased the number of gas stations offering E20 biofuel by more than 50 percent to as many as 690 stations nationwide in the end of 2012.

PTT is also committing to develop an alternative energy business which is considered a brand-new business to strengthen Thailand's energy security in the long-run as well as to promote Thailand as a regional bio-hub. This effort will also help Thailand prepare for changes which will take place after the country becomes part of the Asean Economic Community (AEC). At present, PTT is operating in the alternative energy business. It's also generating electricity from solar cells, wind and biogas through joint ventures and power plant investments. PTT aims to generate a total of 300 megawatts of electricity from the alternative energy business by 2020.



Customer Relations

Customer Relationship Management

PTT does not only pay attention to product and service safety, but also concerned with customer satisfaction in terms of product quality, fair pricing, and responsibility in every product and service it offer. As a result, each business unit conducts its own customer relationship management to respond to the wide ranging needs of different groups of customers. Each business unit has appointed a committee to respond to customer's needs, to build a good relationship as well as to manage customer relations in conjunction with PTT's vision and missions. This starts from identifying targeted customer group, surveying customer's satisfactions, and managing customer's feedback and complaint in order to produce products and services that are beyond customer's expectation. Guideline, timeframe, and responsible department for each process have been clearly and constructively identified.

Customer relationship management is a major responsibility of all PTT's business units. Each business unit is expected to systematically build customer's relationship. PTT Group provides a guideline for customer relationship building which are varied according to different groups of customers. PTT maintains a customer database and an after-sale service is offered with speed and convenience. A visit to each group of customers is regularly made. Customer seminars are regularly held and checkup of technical equipment is periodically offered to customers. In addition customers may contact PTT directly or through an IT-based channel or through a satisfaction survey conducted by a third party. These activities are held in different timelines for PTT to be able to adjust its operation to respond to current and most up-to-date customer's need.

In 2012, as part of an effort to facilitate airline customer payment, PTT piloted a project with PCAir to make payments for jet-fuel filling service via the the Payment Card (P-Card). In addition, PTT offered free internet through the PTT Free Wi-Fi by TOT Project to the public. To respond to the sophisticated and urban lifestyle, PTT also opened the first PTT Life Station for its PTT gas station, Ror Or 1 Welfare Branch on Vibhavadi Rangsit Road.






PTT's commitment to develop products and services that respond to consumer's need on a continued basis has resulted in various awards for outstanding products and services from various organizations and institutions, which include the Trusted Brand award and the Thailand's Most Admired Brand. These rewards reflect the customer and consumer trust and confidence in PTT.

Customer's Satisfaction

PTT has placed customer's satisfaction as one of its corporate indicators since 2001. This indicator has been communicated to the Oil Unit the Gas Unit, and the International Trading Unit. An annual customer's satisfaction survey is conducted for each business unit by a third party using a standardized method that covers an entire data collecting process where both quantitative and qualitative information is comprehensively and transparently collected. Results of the satisfaction survey of both customers and consumers are submitted to the Board of each business unit. Recommendations from the survey, if any, will be analyzed and used as a basis to improve and formulate an annual operation plan in order to adjust PTT's products and services that will correspond to the need of each customer group. In 2012, the overall satisfaction level was 90.7 percent, which was higher than the previous year and the target.

Gas Business Unit has set up the Customer Service Center (CSC) as a main channel for a two-way communication with customers and for maintaining a good relationship with them. The CSC is also used to record major statistics and data to improve both the relationship and satisfaction since it is a system that customers can contact conveniently through internet. The CSC contains information such as GSP, profile, customer data base, plant information, reports of problems and situation for product increase/decrease, customer's feedbacks, marketing situation analysis, and the Certificate of Analysis (COA). Customer can request password from the CSC in order to exclusively access that particular customer information. This is to ensure that information will not be disclosed improperly and also corresponding to PTT's corporate governance and the Code of Business Ethics.

2012 Results of satisfaction's survey of customers and consumers

	Oil Business Unit 		Natural Gas Business Unit 	International Trading Business Unit 
	Customers	Consumers	Customers	Customers
Satisfaction level	91.9%	87.0%	92.8%	91.0%
Target	89.0%	89.0%	89.0%	89.0%

Customer Feedback Process

PTT's Ordering and Customer Relations Center Department acts as a service center to provide information and to receive suggestions and recommendations regarding PTT products and services from customers. In addition, it is responsible for developing a work system that will support the receiving of purchasing orders and customer feedbacks with a main purpose to satisfy PTT customers. The Department receives recommendations or feedbacks from customs of all business units through the Customer Relations Center (CRC) which is a tool for collecting information and monitoring solutions resulted from various customer feedbacks. If the Department can resolve any customers' issues, it will do so immediately. However, issues related to specific business unit will be forwarded to responsible unit for follow-up. Initial response to customer must be made within one day and customers are asked if they are satisfied with the proposed solution three days after the case is closed.

At present, PTT continues to use social media, such as Facebook "PTT News" as a channel to communicate and receive feedback via internet in response to changing lifestyle of customers and consumers. This social media also acts as a channel to inform interesting information such as oil prices, related news, and other marketing promotions to the public while simultaneously receiving information from customers and consumers to improve PTT's operation.

Communication and Complaint Channels

Telephone	Call Center 1365 or 0-2537-2000
PTT Website	www.pttplc.com
Ordering and Customer Relation Center (ORC)	orc@pttplc.com
Corporate Communications Department	corporate@pttplc.com
Office of President and Corporate Secretary	corporatesecretary@pttplc.com
Investor Relations Department	ir@pttplc.com
PTT Intranet	Employee Webboard

Climate Change

Climate Change Management

Climate change is an environmental issue receiving global attention. PTT understands the importance of issues surrounding climate change and intends to set an example in climate change management. Accordingly, PTT established Climate Change Steering Committee (CCC) to systematize PTT Group's climate change management for maximum efficiency. Established in 2008 under the supervision of PTT's Management Committee, the CCC formulates policies and strategies, sets goals, monitors results related to the climate change and encourages cooperation among local and international parties on the issue. The CCC is chaired by Senior Executive Vice President of Corporate Strategy, with Executive Vice Presidents from three departments as its vice chairman with 13 Vice Presidents and employees as members. In addition, Senior Vice Presidents of the Gas Business Unit, Petrochemicals and Refining Business Unit, Oil Business Unit, and International Trading Business Unit serve as committee's advisors.

Management Strategy

To mitigate impact from increasing emissions and concentration of the greenhouse gas (GHG), PTT actively practices its carbon strategy. In 2012, PTT created the Green Roadmap which helps that company focuses more of its investments into environmentally-friendly businesses as well as placing priority in creating mutual values between society and business. To date, PTT has taken the following actions to address climate change:

- Enhance energy efficiency to reduce GHG emissions and PTT's operating costs. Set up the PTT Group Energy Management System to encourage energy savings, promote efficient energy use and reduce carbon intensity.
- Conduct research and development in alternative energy and environmentally-friendly products which include, biodiesel, gasohol, bioplastic, and other renewable energy.
- Conduct research and development in carbon capture and storage (CCS) and carbon capture and utilization (CCU).
- Develop carbon offset project through various mechanisms designed to promote sustainable development. Improve PTT Group GHG inventory to meet the international standards.
- Collaborate with the public and private sectors to promote related policies such as energy conservation, alternative and renewable energy development, and climate change. Attended the Doha Climate Change Conference (COP 18/CMP8) under the United Nations Framework Convention on Climate Change (UNFCCC). Supported the establishment of guideline and mechanisms to manage Thailand's GHG emissions in both public and private sectors to mitigate risks from climate change and lead Thailand into a low-carbon society.

The PTT Group Energy Management System was set up in 2012 to manage the company's energy activities in an effective and integrated manner. The company created an energy conservation master plan and operation framework with an aim to optimize PTT's energy usage, create awareness for energy conservation and prepare PTT Group for an effective and sustainable energy management. To that end, PTT has set a target to reduce its energy intensity by 1.9 percent annually during 2013-2017 based on business-as-usual scenario.

Risks and Opportunities from Climate Change

PTT has a risk management program in place to address risks arising from climate change. As part of the program climate change has been identified as one of the corporate risks in the Corporate risk profile. The assessment analyzes both risks and opportunities from climate change considering different scenarios including changes in regulation and reporting requirements related to GHG changes in consumers' behaviors and market demand and, natural disasters which is considered a long-term risk for PTT. In addition, PTT has taken reputation risk into consideration. PTT actively tracks and manages these risks and risk mitigation on a monthly basis. As a result, the financial impacts from these risks are kept at a relatively low level.

Based on a physical risk evaluation, it is found that the possibility is quite low for changes of average temperature and rainfalls to affect PTT's properties while the rise of sea level will have no effect to PTT's assets in this decade. Information released by the Intergovernmental Panel on Climate Change (IPCC) indicates that global average sea level rose 3.1 ± 0.7 millimeters a year between 1993 and 2003.

PTT is managing climate change risks by:

- Producing, procuring and distributing natural gas which is one of the main products that will help with transition to a low-carbon society
- Improving PTT Group's GHG Inventory to meet the international practice standard. Integrating data from all business units, companies, departments and corporate and operation areas. Invite an independent third party to audit the GHG inventory to enhance the efficiency and accuracy of related processes as to meet PTT Greenhouse Gas Accounting and Reporting standards and to promote business transparency.

- Seeking opportunity to invest in research and development of alternative and renewable energy as well as environmental-friendly products in order to reduce the GHG emissions and promote operational excellence for sustainable growth on the basis of technology and innovation.
- Utilizing carbon dioxide by distributing it to producers of liquid carbon dioxide and dry ice. Conducting a research in reducing global warming by using Spirulina, to capture carbon and turn biomass resulted from this carbon capture into biogas; breeding algae for fuel extraction at a natural gas separation plant compound as the plant has enough carbon dioxide for propagation. Using carbon dioxide in a cooling system for the cultivation of cool climate plants such as tulip, lily, and strawberry.

A carbon tax is a policy tool for government to address climate change by imposing a cost on business, generating revenues for the state as well as encouraging people to become more aware of environmental issues. Although, Thailand has no measures to introduce a carbon tax in the near future PTT is expanding its offering of low-GHG products such as natural gas, gasohol E10, E20 and E85, and diesel containing biodiesel and biojet. By moving ahead of possible change in regulation, the financial impact on the company should be minimized if carbon tax is introduced in the future.



Greenhouse Gas Emission Reduction Target

PTT is committed to reduce GHG emissions both in Scope 1 and Scope 2 from its operations. Increasing energy efficiency, changing fuel types, generating power from co-generation power plant, and utilizing waste heat are a few of measures PTT introduced to reduce GHG emissions. In addition, PTT aims to reduce GHG emissions from Scope 3 activities by offering low-carbon products. PTT's long-term goal is to reduce GHG emissions by 15 percent by 2020 against the business as usual projection. The target has been designed to be in line with the shared vision of the global community and international scientific research to prevent the global average temperature increase to below 2 degrees Celsius.

In 2012, PTT conducted a comprehensive review of its GHG emission management. Based on the results of the study, the CCC introduced carbon intensity index to measure the organization's effectiveness in reducing GHG emission. PTT conducted a pilot project to determine the ratio of GHG emission per unit of product or ton of carbon dioxide equivalent per barrel of oil equivalent ($\text{tCO}_2\text{e}/\text{BOE}$). The short-term target will be based on the average carbon intensity in the past. Long-term targets will be set to support carbon intensity index reduction in order to reflect the organization's GHG management efforts. Additional analysis of GHG emission will be conducted to determine appropriate indicators used to set PTT Group's carbon intensity goal.

GHG Emission Reduction

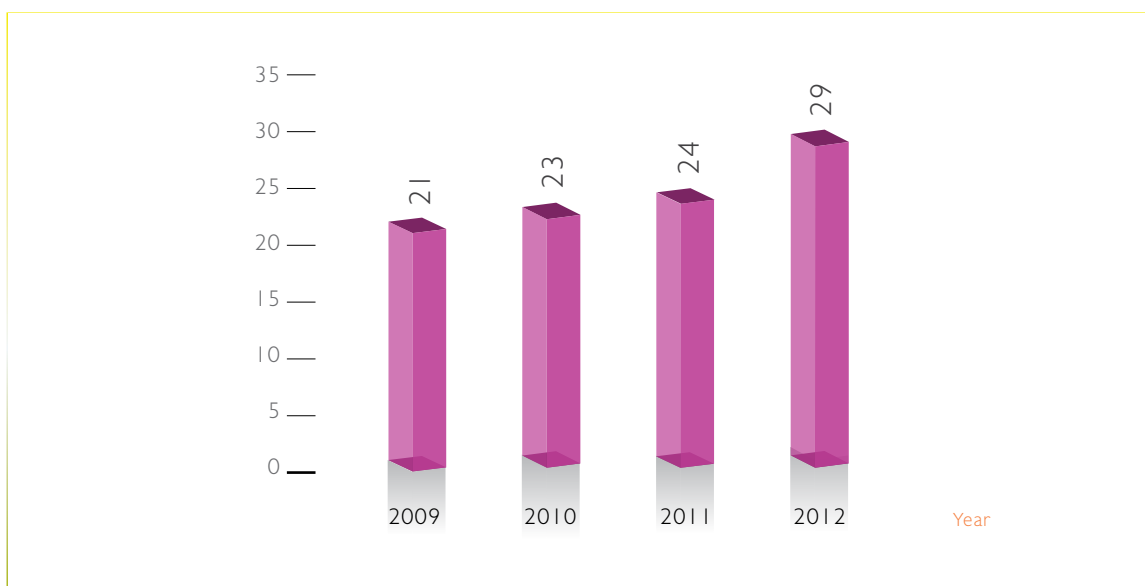
Short-term plans	2012		Challenges	2015
	Target	Progress		Target
GHG emission reduction activities such as increasing energy efficiency	300,000* tCO_2e	300,000* tCO_2e	PTT plans to conduct a pilot project showing a ratio of emission per product unit	300,000 tCO_2e
Offering low-carbon products such as Biofuel	888,000 tCO_2	950,000 tCO_2		1,022,000 tCO_2
Conducting carbon dioxide absorption activity such as reforestation	1,500,000 tCO_2	1,500,000 tCO_2		1,500,000 tCO_2

*PTT Group's Scope of operation

GHG Emission Accounting

In an effort to effectively manage the GHG, PTT has established Greenhouse Gas Accounting to track company inventory since 2006. In 2012, the company improved the tools and standards used for its inventory using the results from PTT Group GHG Pre-verification conducted in 2011 and additional requirements from GRI OGSS 3.1. Business areas and companies within PTT Group are required to conduct GHG emission inventory using both the equity share approach (applicable for domestic companies in which PTT holds more than 20 percent shares) and the operational control approach (applicable for domestic companies in which PTT is a major shareholder or joint venture partner as governed by PTT Group SSHE Governance Policy). In 2012, 29 equity share companies and 25 operation control companies have adopted the Greenhouse Gas Accounting and Reporting Standard using this new methods and tools. PTT's 2012 GHG emissions inventory was verified by the third-party auditor.

With regards to GHG emissions reduction, PTT had developed the PTT Group GHG Project Standard based on ISO-14064-2. The Standard is integrated with PTT's GHG emission inventory and is used to assess and analyze GHG reduction efforts in accordance with international standards.



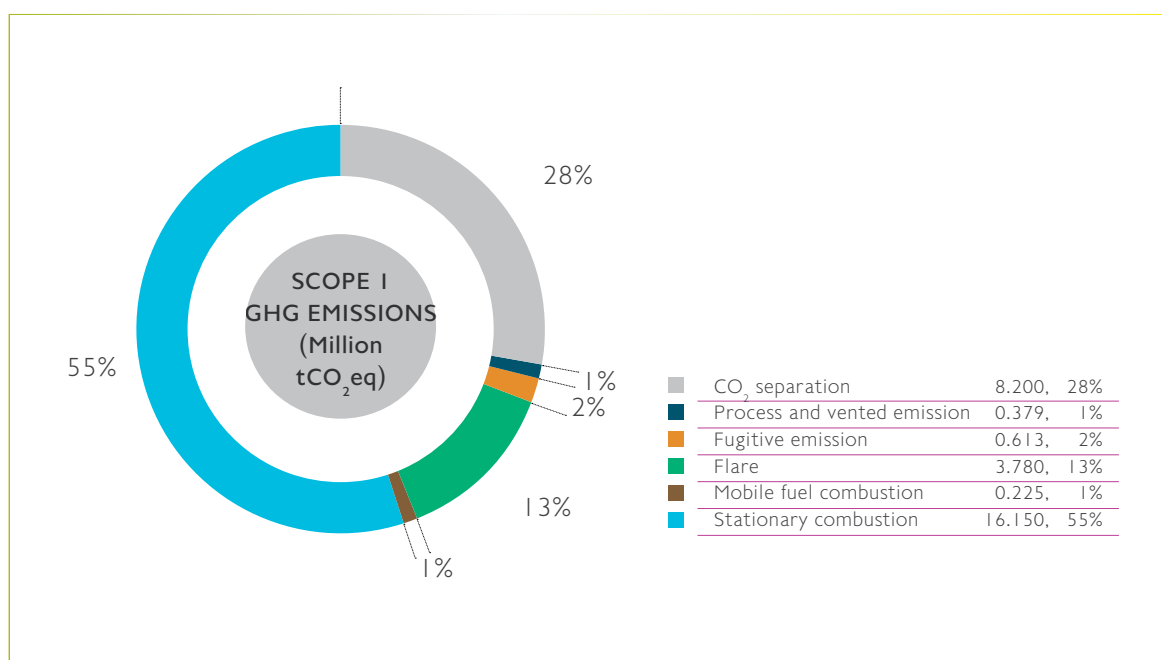
Number of Companies Adopting Greenhouse Gas Accounting

Direct GHG Emissions (Scope 1) and Indirect Emissions (Scope 2)

In 2012, organizations under PTT Group's operational control directly released GHG emission from the following activities: stationary and mobile fuel combustion, carbon dioxide separation, release of hydrofluorocarbons (HFCs) and sulfur hexafluoride (SF6), fugitive emission, vented emission, flare burning, and process emission. In total, the emissions were of 29.3 million tCO₂e inclusive of separation and combustion activities.

Scope 2 indirect emissions are the release of GHG from consumption of purchased energy such as electricity, heat and steam in PTT's business operations. In 2012, indirect emission from PTT was 1.58 million tCO₂e.

From the product liability standpoint, PTT requires its products' carbon footprint to be continually assessed. PTT uses Thailand Greenhouse Gas Management Organization's (TGO) principles of carbon footprint of product to evaluate the carbon footprint of its products. GHG release is computed as kilogram carbon dioxide equivalent per product's life-cycle. In 2012, this verification was extended to cover fuels both benzene and diesel. Results of the verification enable PTT to better manage its GHG emissions in each stage of the product's life-cycle. Carbon footprints for benzene and diesel products are being verified by an external party and will be certified by TGO. PTT plans to extend this carbon footprint verification to more products in 2013.



Direct GHG Emissions (Scope 1)

PTT has won several awards that recognize the company's effort to manage climate change. The Ministry of Energy awarded PTT the Outstanding Energy Personality Award for manager of controlled factory for outstanding performances in energy conservation and development of alternative energy. The STI Thailand Award 2012 on Green Innovation from the National Science Technology and Innovation Policy Office (STI) recognized PTT for its innovation management excellence as well as highly-recognized research and innovations that are commercially viable and support environmental and community-friendly business.

Verification

In 2011, PTT Group Greenhouse Gas Pre-verification project engaged an external auditor to review PTT Group GHG emissions inventory against PTT Group Greenhouse Gas Accounting and Reporting standard and ISO-14064-1. The review was conducted to get the inventory ready for accreditation by an external agency in 2013. In 2012, PTT applied lessons learned from the project to improve criteria and calculating tools as well as to communicate and train relevant persons to increase their understanding of this issue. Examples of improvements include, updating an emission factor and adding GHG emissions from the wastewater treatment system in the emission inventory. These efforts were taken to ensure that PTT Group's GHG emissions inventory is accredited by the third party as planned.

Other Indirect Greenhouse Gas Emissions (Scope 3)

Scope 3 emissions include indirect GHG emissions from sources not owned or directly controlled by the PTT but related to the PTT's activity. PTT views managing Scope 3 emission as an extension of business responsibility and as an opportunity to take part in the innovation of GHG management. As a result, in 2012, PTT extended its GHG emissions inventory to include the consumption of PTT's products, transportation of raw materials and products, as well as employees travel activities. Recognizing that most of Thailand's GHG emissions come from fuel combustion, PTT estimated that GHG emitted as a result of consumer using PTT's product is 121 million tCO₂e. PTT actively promotes and expands the preparation of GHG emission inventory and product carbon footprint to enhance its competitiveness in the international market and to inform consumers of PTT products' impact on the climate.

Anticipating technological changes that will emerge to address climate change challenges, PTT feels that consumer products should be able to accommodate both today's and tomorrow's technologies. As a result, in 2012, PTT made an attempt to get all of its gasoline-engine lubricants to meet API SN standard. In addition, to respond to customer's needs both in terms of quality and product variety which ranges from gasoline to gasohol E20 and E85, CNG and LPG; PTT has developed lubricants that can keep car engine cleaner, enhance engine performance, increase engine's life, increase the ability to tolerate heat, as well as protect the turbo charger. PTT is also expanding its product offering by giving consumers more choices in lubricant's viscosity.

PTT has launched a zero-waste pilot project in its service stations to reduce the release of carbon dioxide resulted from effective waste management. PTT also builds a zero-waste operation and learning center at service stations to encourage Thai society to consume energy with better awareness. In addition, solar energy is being used in its Café Amazon chain coffee shops. PTT plans to expand the project to more gas stations; reflecting its deep commitment for the industry, the community and the society to walk ahead hand-in-hand in a path to the future in a collaborative and sustainable manner.

Water Management

Water is essential for business and livelihood including consumption for agricultural and industry use. Changes in the climate have affected the amount of water in the environment and making water resources more volatile. Realizing the importance of efficient water management, PTT declares water management as one of its business level risks and establishes the PTT Group Water Management Team consisting of water and utilities management experts. The team is tasked to monitor, evaluate and report water situations in the eastern part of Thailand which experienced a severe water shortage in 2005 and where PTT's major production assets are located. The team assesses and anticipates the need for water in industrial estates during the next 10 years for effective water management. A risk management plan is also put in place to address possible draughts. These short-term and long-term operation plans are submitted to the management of companies within the group and the Risk Management & Internal Control Committee on a quarterly basis.

PTT Group senior executives sit as member of the Thailand Business Council for Sustainable Development (TBCSD), a cooperation network initiated by the Thai private sector to promote sustainability. COO of the Downstream Business Group, who currently chairs the TBCSD's Water Security Sub-committee, has signed a memorandum of understanding with Department of Groundwater Resources to provide clean water to villages suffering from water shortage. The objective is to provide groundwater to these communities for them to have adequate access to clean water and to improve their wellbeing. The project also reflects responsibility of the industrial sector to assist communities at the time of difficulty which should also tighten a relationship between each other.

PTT Group's production zone with significant water consumption is located in the Eastern part (Chonburi and Rayong provinces) of Thailand. In 2012, the PTT Group Water Management Team joined the Rayong Province's eastern water management committee. The committee consists of representatives from the public and private sectors and East Water Co., Ltd. who monitor and evaluate water situations before announcing measures to reduce risks and mitigate impacts in a timely manner. Major water reservoirs in the area are closely monitored, and measures are issued to manage water before the draught to ensure that water was available for use in the long run. The committee also looked for alternative water reservoirs to increase water resources destined for industrial production which included building new water reserves and setting up a desalination unit to maintain PTT Group's production security, reducing impact from shortage of water or draught, and avoiding a water conflict between the industry and the communities.

The PTT Group Water Management Team created a strategy under the 3R principles (Reduce, Reuse, Recycle) and an effluent water management plan, and facilitated best practice sharing of water management within the group. The team is responsible for monitoring and encouraging water management projects of the public sector in Rayong and Chon Buri Provinces based on the 3R principles as follows:

- Changing the water cooling system in its power plant from an open to a closed system to reduce water consumption
- Introducing the blow-down tank to reduce water consumed in the cooling process before releasing to wastewater treatment; and using blow-down water for irrigation
- Implementing Reverse Osmosis Intermediated project to reuse water for cooling purpose
- Reusing condensate in steam production
- Reusing wastewater from of the natural gas separation plant's dehydration process at Gas Separation Plant (GSP) Unit 5 as make up water in the Acid Gas Removal Unit (AGRU) which enables the plant to reduce the volume of makeup water by 17,500 cubic meters per year.

PTT is conducting a feasibility study to manage water resources through the use of eco-industrial system which involves reusing of treated wastewater as a future means to manage water within the PTT Group.

Aside from managing water for companies within PTT Group, PTT also set up a public-private working committee and a coordination center for water management to integrate sustainable water management and development efforts. The committee is made up of representatives from Royal Irrigation Department and industries in Rayong and Chonburi Provinces which include companies within PTT Group. The committee's major task is to effectively manage water in these two industrial provinces by taking into consideration water needs inclusive of all parties, including the industry and agricultural sectors and the communities. The committee is also entrusted to search for potential water resources within and outside the area, and to assure water security in respond to constantly increasing needs of water in the area.

PTT has started calculating water consumed by its production units on the basis of eco-efficiency indicators. Water footprint study has also been initiated using internationally-recognized WBSCD water tool to record water consumption of its production units.

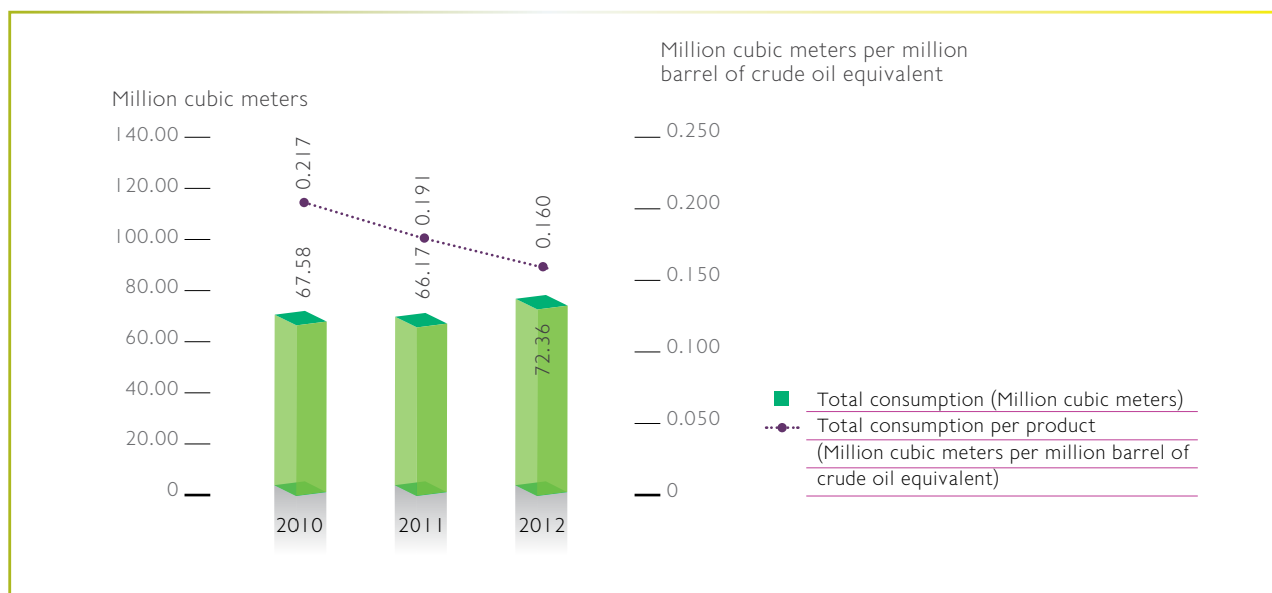


Water Footprint

PTT relies upon several water sources to run its businesses and those of PTTEP. To elaborate, surface water is used in pipeline business while sea water is used in the petroleum exploration and production as well as pipeline businesses. Groundwater is also consumed in the petroleum exploration and production, pipeline operation, and oil terminal business. Additionally, tap water is used everywhere by every PTT business. In 2012, statistics of PTT water consumption based on manufactured products shows that consumption of water per product continued to decrease in 2011 and 2010.

New Technology to Reduce Water Footprint

As a whole, due to nature of operation, the gas separation represents the business with the highest consumption. In 2012, the consumption was 0.037 million cubic meter per million barrel of oil equivalent (BOE), most of which is used up in the water cooling process at the GSP Unit 1. However the cooling process for the other GSP Units have been switched to the Fin Fan Cooling system resulting in a decrease in water consumption when compared to the level of water consumed by GSP Unit 1.



Total Water Consumption

People

PTT commits to continue to enhance the capacity of its human capital to allow them to grow with the organization, to cultivate skills in the work they do and to nurture capacity and initiatives in order to create new innovations. Human capital is, after all, an important mechanism to transform PTT's vision, missions and business strategies into a success. In an annual strategic and risk management plan, PTT strives to strengthen its workforce while emphasizing rigorous selection process to create a potential pool of human capital that is ready to take on the challenge of technological progress in line with PTT's TAGNOC and sustainability management strategy. PTT's strategic goals for human capital are:

Sufficient leader pool to support business growth	PTT analyzes nature of work in positions required by the business. Management's leadership skills are developed to suit both current and future requirements and results are regularly monitored. In addition, a succession plan is conducted for every strategic position.
Sufficient talent pool to achieve business direction	PTT selects a potential pool of talent to enhance their skills and nurture them as future executives through the career management mechanism where results are regularly monitored.
Highly capable workforce	PTT focuses on building capacity of people to support business growth in nine major functions as indicated in the 2012 Strategic Thinking Session (STS) which includes: Capital Project Management, Operation Excellence, Business Development, Marketing and Sales, Stakeholder Management, Corporate Finance, HR/OE , R&D/Technology, and Corporate Strategy.
Highly engaged workforce	PTT conducts annual survey to assess its workforce engagement. Survey results are incorporated in the company's 3-5 year plan. Activities to increase workforce engagement include promoting leadership practice and improving the HR system and process in which remuneration and performance management systems are adjusted to meet people's needs based on both performance and years of work. In addition, an induction program has been refreshed so new staffs can learn corporate culture and practices. It also opens up a channel to manage employee expectation as well as to communicate HR message across the entire workforce.
Highly capable HR team and effective service delivery	This involves building up HR personnel's capacity in order to provide effective and comprehensive services.

In 2012, PTT launched an important project to improve its HR service in response to corporate strategic directions. The project includes improving employee welfare where flexible benefits are introduced to meet different expectations. PTT recruits its workforce based on their knowledge and skills regardless of sex, nationality and religion. PTT is in compliance with the 2012 Recruitment Law on hiring person with disability. The project also extends to support and assist the disabled in various aspects such as promoting a TV program where the host is a person with disability, providing human rights training to HR personnel whose work is to directly deal with the rest of PTT employees before expanding to the entire workforce, and setting up PTT's intranet-based grievance filing channel.

Recruitment

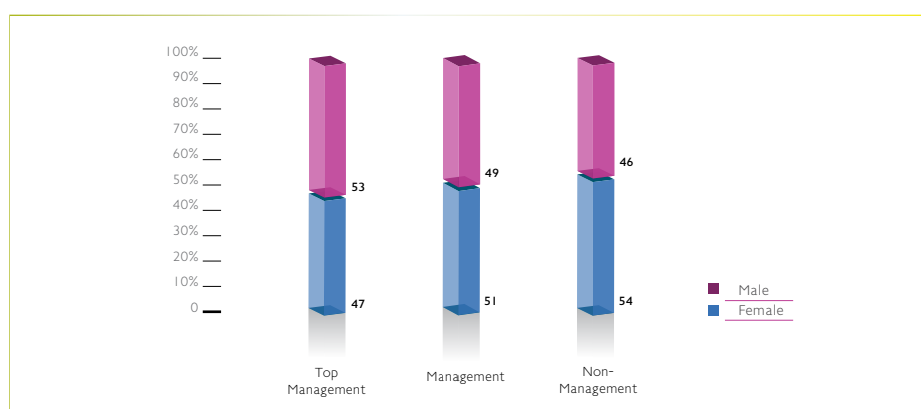
PTT has a recruitment plan to seek out and select potential applicants to fill business needs. In accordance with PTT's policy, the company provides equal opportunity to qualified candidates regardless of race, religion, class, gender, age, education level, domicile, and education. The company intends to build a diverse group of employees who can respond to different needs of PTT's customers and variety of PTT's business both in Thailand and abroad through a systematic recruitment process. Between January and October 2012, PTT recruited 336 new employees of whom 206 were men and 130 were women. This accounted for 82 percent of PTT's target to hire a total of 410 personnel to respond to corporate need.

PTT's interview process is based on the STAR (Situation, Action and Result) evaluation principle which has been developed and implemented for more than 10 years and is recognized worldwide by, for example, the Massachusetts Institute of Technology (MIT). The process includes a list of questions that ask an interviewee to explain his or her behavior in various situations which helps PTT to assess the applicant's experience and potential. The applicant's answers to the questions will be analyzed and compared with the applicant's profile, which makes this process remarkably different from a normal interview since open-ended interview questions cannot effectively reflect the applicant's situation-based behavior.

PTT is collaborating with the Ministry of Education's Office of the **Vocational Education** to provide technical competency training to selected students from vocational colleges nationwide since 2007. In 2012, 40 graduated vocational students were selected by the Ministry of Education across the country to join the training program. Training subjects include topics on natural gas and petrochemical businesses as well as English skills training. The training takes 2.5 months and is held at PTT's business premises. As a result, 90 percent of students who participated in the training join PTT workforce.

Reward

PTT's benefits and salaries are highly competitive with other leading organizations in Thailand. The company conducts a study to compare its remuneration packages with other leading domestic and international organizations annually. PTT also pursues a reward strategy and policy that incentivize its staff both in monetary and non-monetary forms. Compensation adjustment is closely linked to an individual's work performances and reflects no discrimination.



Compensation ratio based on gender

PTT introduced a variable bonus remuneration program to its middle and senior executives. Evaluation is based on the individual Key Performance Indicators (KPIs) on a given year. In addition, rewards and compliments are extended to induce PTT people to strive for excellent performances. This includes, for example, the Knowledge Management Award, the Research and Technology Achievement Award, the SPIRIT Award, the Quality, Security, Safety, Health and Environment (QSHE) Award, the Line Manager to be HR Manager Award and the Outstanding Employee Award. These accolades are to honor PTT dedicated people and underline the value of their contributions.

Welfare and other fringe benefits offered by PTT are never lower than what the labor law requires. In many cases, PTT's benefits are higher than the legal requirement and are designed to suit and cover all staff's age range. In addition, health and other welfare is extended to staff's family members; namely, spouses, children and parents, which, among others, includes healthcare to family members and tuition assistance for children.

Welfare and Benefits

Employees	About-to-retire employees	Retirees
<p>Flexible benefits to answer to different needs of employees whose ages are varied.</p> <p>Welfare and benefits for family members</p>	<p>Preparing them for future retirement through; for example, training on the laws governing senior citizens, the inheritance law and healthcare for senior citizens.</p>	<p>Organizing an orientation session for retirees to provide knowledge such as health maintenance, financial planning and management, welfare and benefits and tax payments</p> <p>Voluntary redundancy program to offer alternative to staff facing, health problem to retire from the corporation</p>

Retention

PTT's strategy is to retain people by developing, promoting and supporting employees. HR management and development system will be used to effectively develop and retain employee who are capable helping the organization to achieve its goal.

PTT's HR management and corporate development system combines the concept of managing a knowledge-based organization and the design of various IT-based systems to meet the needs to supervise workforce. Examples of IT systems introduced in the HR management include SAP, (Systems, Applications and Products) which houses employee database, and COACH Application, which maintains employee work records, details of employee capacity derived from work analysis, the success profile and KPIs information for assessing employee performance throughout organization.

Performance Management

Performance management is cascaded down to deploy targets that link corporate, business unit, and individual levels together align with PTT's vision, missions and strategy. The process is conducted using the COACH Application. In the first quarter, a half-year performance of every employee is reviewed and an annual performance is assessed in the fourth quarter. In 2012, PTT encouraged supervisors to enhance employee's capacity while simultaneously set an annual target for each employee's performance to urge employees to achieve this pre-determined goal.

Caring PTT people

PTT provides a medical plan that focuses on preventive care and education. PTT encourages healthy behaviors in three ways: by providing two annual health check-ups annually, through regularly held information sessions where medical knowledge of AIDS, tuberculosis (TB), malaria, other diseases, and nutrition information is provided for preventive and protective purposes, and by organizing health-promotion activities such as the PTT Health Day at the head office and all its operating oil terminals.

In 2013, PTT plans to expand its awareness and preventive campaigns by extending its mobile medical unit service areas to every terminal and surrounding communities, as well as giving information to promote better understanding of diseases. Printed materials describing protective measures will be distributed to PTT staff and neighboring communities. In addition, PTT has collaborated with Dhipaya Insurance Public Company Limited and International SOS to provide information to employees stationed in foreign countries on how to take care of their health and to provide access to 24-hour emergency assistance through the internet where employees can get health and safety risk information and contact the emergency center for assistance.

Learning Organization

At the beginning, PTT implemented Knowledge Management (KM) with its the Gas Separation Plant (GSP). From this first step, knowledge management has been expanded to various parts within the organization with a view to transform PTT into a learning organization while simultaneously pursuing quality management. At present, all departments and operation units are actively managing their knowledge by focusing at knowledge continuity, added value resulting from knowledge application as well as promoting creativity for new innovations to improve work process, and design a product or create a decision-making process that influences team-working. In addition, a share point system has been put on the intranet to support knowledge management where employees can search for information and where static information can be stored and retrieved for users to access updated information on a self-service basis. A webmaster verifies information on the system while KM facilitator organizes regular meetings to improve and encourage team-working and quality knowledge sharing.

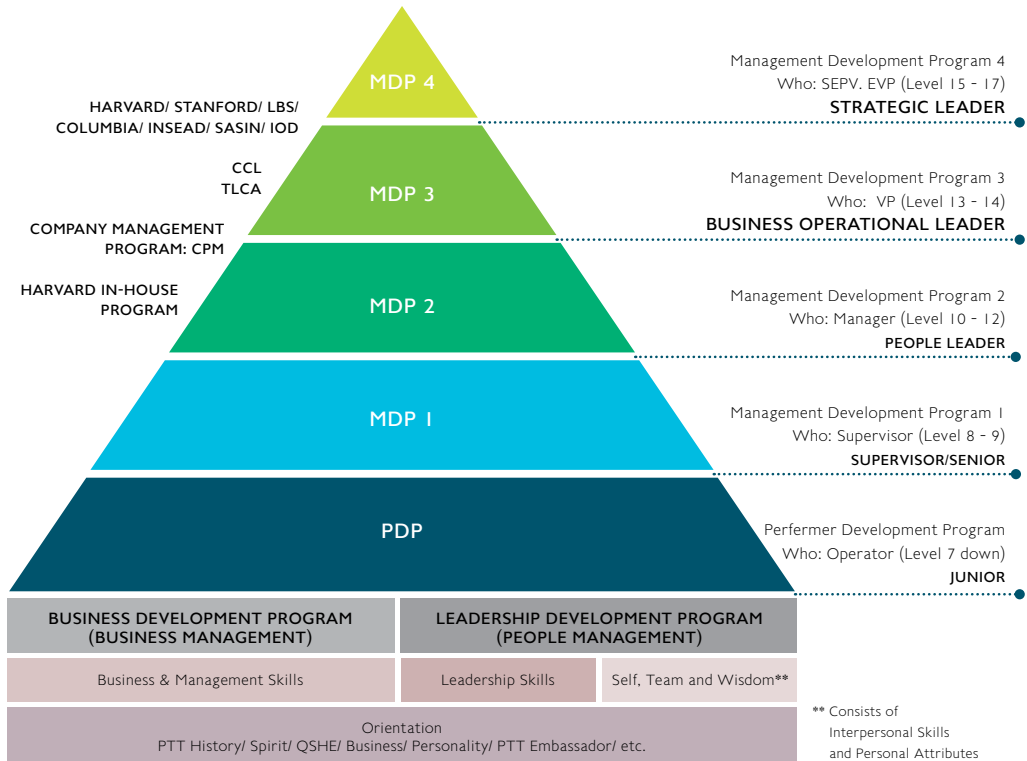
Career Model

Career model is a tool for a systematic HR development which consists of career path, career advancement and success profile; expressed through four dimensions of competency, knowledge, experience and personal attribute. Employees are able to clearly see their path in the organization corresponding to business growth, which will be a benefit for employee self-development. Scholarships in various fields that correspond to PTT's business direction and answer to an individual's career goal are offered. Interested staff may have a chance to continue their studies in leading schools abroad. The scholarship program has an important goal to turn employees who graduate from the PTT scholarship program to become its valuable asset and to enhance the organization's capacity. At present, PTT is sponsoring 56 students in educational institutions worldwide.

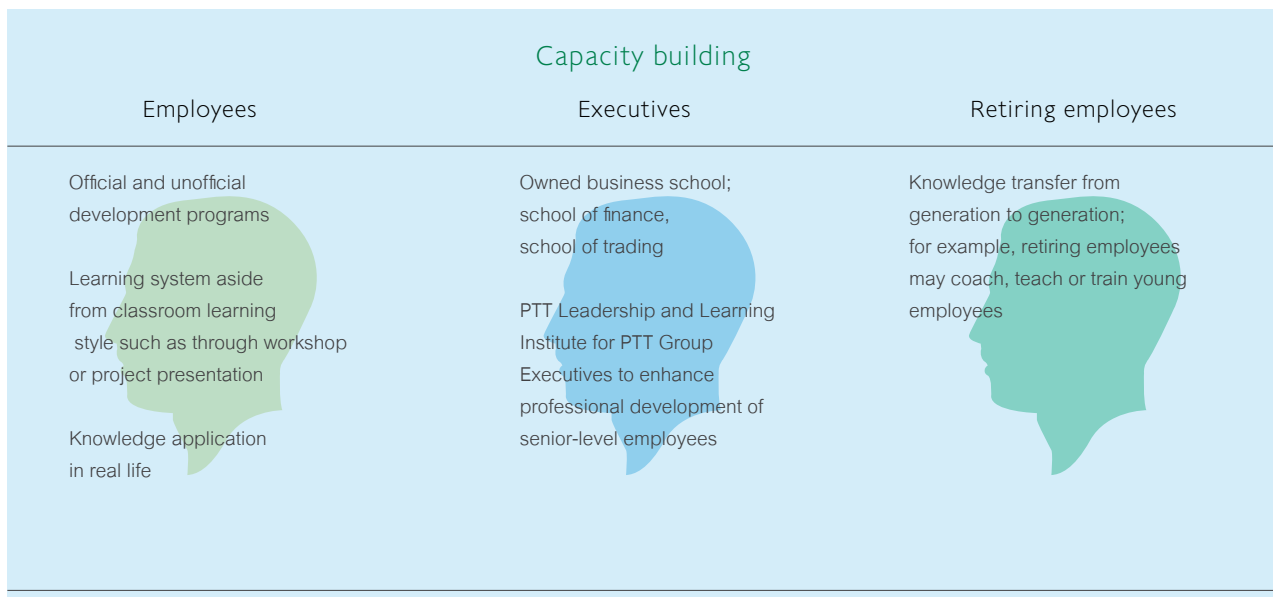
Capacity Building

To ensure that PTT people are ready to support PTT's business, the company offers core program training roadmap to all levels of staffs from junior to senior executives. In addition, the COACH Application helps staff identify which capacity they need to develop in order to formulate the Individual Development Plan (IDP) that corresponds to their success profile. The idea behind this is that employees should have a chance to grow through various forms of learning which ranges from training to coaching and on-the-job training that focus at self-learning and development.

PTT encourages the application of new skills and knowledge derived from the training on the principle of 10/20/70 which is closely linked to the implementation of the career and competency management system. By means, an employee will get 10 percent knowledge and skills from a formal learning process, another 20 percent from the supervisor's coaching, mentoring and feedbacks, and the remaining 70 percent will come from project assignment or on-the-job-training (OJT) as well as the sharing of new knowledge and skills with others through the measurable knowledge-sharing process.



PTT Training Roadmap (Core Program)



New staff orientation program

"The training allows me to become friends with colleagues from several departments which should be useful in the future. What's really important for the training is that it makes everyone become one as we share the same goal of driving the company to be Thai Premier Multinational energy company."



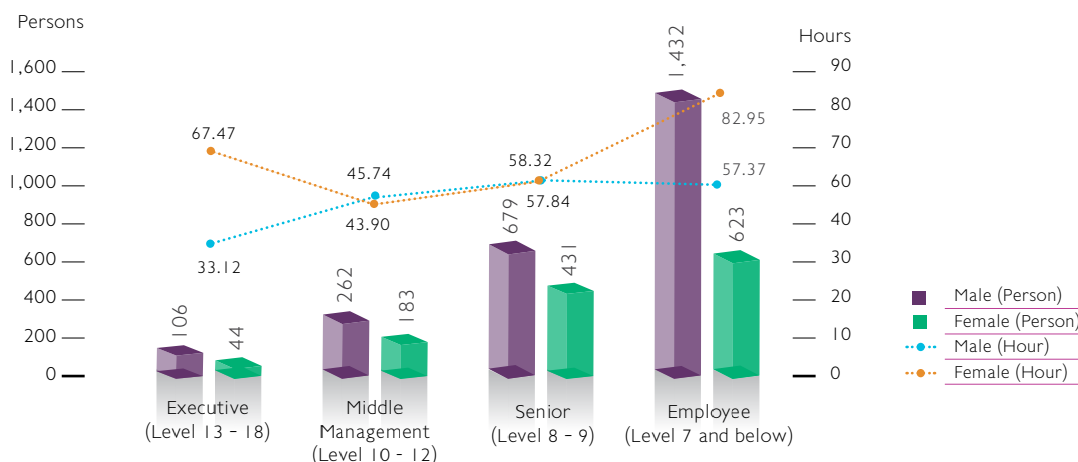
Ms. Ek-orn Ratanasilapinrahat
Employee No. 540356
Title: Auditor
Reporting line: Strategy & Audit Quality Development Department

Pre-retirement training

"The training teaches me to manage my time. In other words, it tells me how to prioritize my to-do list. The training also talks about asset management and financial planning for retirement. We also did qigong and yoga which I assume is suitable for people of my age. We were told to be careful on what we eat as we should eat less carbohydrate, fat, and meat."

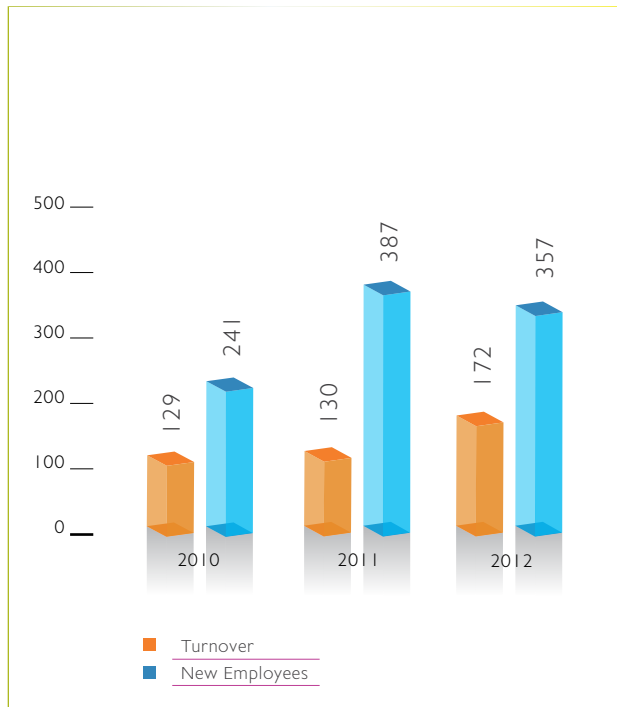


Mrs. Ratchanee Suriya
Employee No 250254
Position: General Administration Officer
Reporting line: Senior Executive Vice President, Corporate Strategy

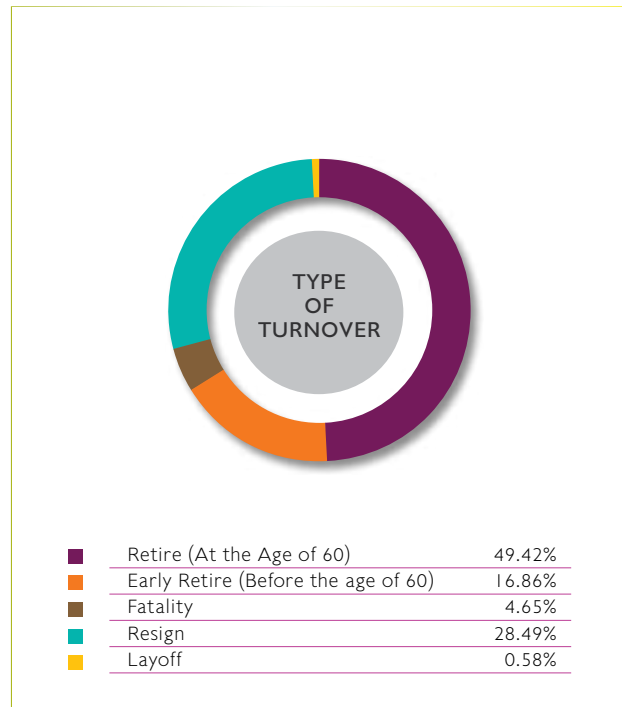


Average hours of training

PTT's turnover rate in 2012 was 4.07 percent, which was increased by 3.14 percent from 2011. By means, 66 percent (114 employees) retired; 28.5 percent resigned and 13.4 percent opted for voluntary redundancy.



Turnover vs New Employees



Type of Turnover

Respecting labor rights

PTT has a policy and guideline to manage its human capital on a sustainable basis that complies with the principles of human and labor rights under the UN "Protect, Respect and Remedy" Framework for Business and Human Rights 2011 as well as the OECD Guidelines for Multinational Enterprises. The policy and guideline are used to plan and monitor HR management for equity and fair treatment to all employees, in accordance with Section 15 of the Thai Labor Protection Act, 1998. PTT also highlights the effects of employee's commitment to the organization.

PTT understands the importance of work-life balance thus promotes the work-life balance: health, safety, and environmental management. PTT incorporates this concept and idea in a due diligence when considering merger and acquisition. The company's context and culture should be in line with PTT's policy especially on issues that need to meet international standards.

Employee engagement

PTT's employee relations management is based on the State Enterprise Labor Relations Act, B.E. 2543 (2000). Its employee union, the State Enterprise Employees Union of PTT Public Company Limited, is an independent agency that has an important role in auditing and resolving confidential and classified grievances through the Joint Consultant Committee (JCC). The JCC's tasks are to provide opinions regarding efficiency enhancement, review work regulations proven useful to employees and the organization especially on issues that have impact to minimum standard of state enterprise employment, find solutions to employee's grievances, and improve employment conditions as well as resolve corporate conflict and promote compromise. The JCC meets on a monthly basis and consists of an equal number of representatives from the management and the PTT employee union. The President and CEO serves as the chairman for the group's 19 members, in which the meeting is held on a monthly basis. In addition, PTT supports employee's participation in the union where in 2012, 56.61 percent of all PTT employees were union members. Of this, 592 were women and 1,801 were men, making total union members to reach 2,393 from PTT's total staff of 4,227.

Diversity

As PTT's HR management policy supports and promotes PTT's sustainability through the respect of labor and human rights, PTT benefits from the diversity of its staff from both cultural perspective and variety of their capacities. This diversity has led to lively sharing of viewpoints and knowledge among staff within the team which promotes creativity proven useful to both PTT and the society in general. PTT is also an employer with equal opportunity that offers an equal opportunity to everyone regardless of their race, religion, gender, age, and disability status. Besides, PTT strives to recruit people from various professions that are in line with PTT's value chain for its local and overseas operations. As soon as a person joins PTT, the HR process supports career growth by helping with career management, performance evaluation and the determination of remunerations and other benefits on an equity basis.



Complaints and Grievances

PTT's employees can file complaint and grievance through several channels. There is a supervision process that will take and manage complaint classified as confidential. Documents and information are properly kept. For any complaint or grievance, the goal is to establish the right understanding between employee and employee or between employee and the organization. PTT's employee union is responsible for maintaining the minimum standard of employment in state enterprise. In addition, a grievance resolution committee is established on a case-by-case basis, with HR department representative sitting as one of its members.

Complaints and grievances filed through various channels in 2012

Channels	Complaints		Grievances	
	Total	Total resolved	Total	Total resolved
State Enterprise Employee Union	90	72	6	4
JCC	3	1	-	-
Employee grievance system	2	2	-	-

Operational Excellence

Security, Safety, Health and Environment (SSHE)

Strategy

It is expected that in the next 20 years, stakeholders and the public sector will be increasingly interested in the costs of production, raw material, and services. It is also highly anticipated that the government will stop providing financial subsidies to raw materials (such as fossil fuel and water). This cost issue will also be a result of policies to manage social and environmental impacts where the public sector may demand more compensation from industry for environmental impacts. An analysis of what happened in the past has confirmed that the cost of managing environmental impact will double every 14 years. The impacts will be especially fallen into 11 major industrial sectors which include upstream activities. Between 2002 and 2010, the cost has already climbed from 566 billion US\$ to 854 billion US\$. The figure confirms that this could affect the sustainability of an operation soon.

PTT has defined the Security, Safety, Health and Environment (SSHE) strategy to respond to environmental challenges. The strategy consists of a clear commitment to reduce environmental footprint and to enhance PTT's SSHE operation to become one of the world's top quartile SSHE performers. The strategy will focus on reinforcing the SSHE management system, improving its operation, applying innovations, and implementing projects to help realizing the goal.

SSHE Commitment

Reducing environmental footprint and enhancing PTT's SSHE operation to become one of the world's top quartile SSHE performers.

2012

Operation was reviewed against PTT Group SSHE Management Standards in order to formulate a plan to improve the operations of the Oil Terminal Business, service stations, PTT Research and Technology Institute, PTT Head Office, Rayong Gas Separation Plant, and Oil Business Unit.

The area-based environmental due diligence prior acquisition or divestment, which assesses hydrocarbon contamination in soil and underground water. The assessment was conducted in pilot operation areas at the Udon Thani Oil Terminal, the Pak Panang Oil Terminal, and the Phrakhanong Oil Terminal. In addition, a corporate standard is set to determine procedures and conditions to assess soil and underground water of assets that PTT will invest or divest.



Security, Safety, Health and Environment (SSHE)

2013

Future step

To propose PTT Group SSHE Management Standards by joining hands with companies in the ASEAN Oil and Gas Management Standard (ASCOPE) to review and upgrade the standards to the international par.

SSHE strategy implementation

PTT Group Quality, Safety, Health and Environment (QSHE) Policy is deployed into implementation through a top-down management approach. This means the SSHE management start at corporate level before being passed down for implementation in business units and companies within the PTT Group. PTT has set up the PTT Group QSHE Policy Committee and the PTT QSHE Committee in which QSHE executives from operation and other related departments sitting as members. The committees have roles to govern and review the effectiveness of policy, strategies, targets, and key performance indicators implementation in business units and PTT Group’s companies. A meeting is held on a quarterly basis with SSHE Department acting as its secretary. In 2012, the meeting convened six times.

Environmental management certification (ISO 14001)

From 1997 when PTT’s first operation site was accredited ISO 14001 and ISO 9001 following by TIS/OHSAS 18001 accreditation in 2000, PTT has set the number of target sites whose environmental, safety, and health management system is to be accredited each year. From 2007 to 2012, 100% of these target sites have been accredited on a continued basis.



Environment training and knowledge sharing

Training is an important way to reinforce knowledge and understanding as well as to promote environmental awareness among PTT's employees and contractors. Two types of training have been organized.

- **Basic training** where environment is part of the security, safety, health, and environment components that PTT employees must learn and understand. SSHE topics have been incorporated into a basic training program depending on nature of work and level of employee's responsibility. For example,
 - All new staff must attend the QSHE Awareness workshop in their orientation as well as the SSHE1 program as required by the law.
 - Operation employees or those in related departments must attend the Basic Security, Safety, Health and Environment for Operators training.
 - Manager or equivalent must attend the SSHE program designed for supervisor and an investigation program of causes of incident.

- **Responsibility-based and policy-based training**
Training needs of each position are analyzed. The SSHE training will be formulated each year by the Corporate SSHE Department and the QSHE Business Unit or Area. In 2012, important trainings such as Introduction and Internal Auditor to ISO 14001: 2004; ISO 50001 (Energy Management System) Implementation Course, Greenhouse Gas Internal Auditor, Volatile Organic Compounds Emission Inventory, soil and underground water environmental laws and Oil Spill Response and Preparedness: IMO Level II were conducted.

In addition, each department performs **on-the-job training for employees** for the right practice and performance as required by the department to prevent and control safety and environmental impacts. **Public relations to promote environmental issues were organized** through various activities such as, the SSHE Forum for PTT Group companies to share environmental practices, a requirement that a department head and higher being chairman of a meeting must conduct a QSHE Talk prior to the start of each meeting, the SSHE Lessons Learned newsletter which are circulated via email as well as environmental articles in an internal journal and environmental-focused information boards.

Operational Eco-Efficiency

Operation strategy

PTT Group has set up a long-term SSHE target to achieve the corporation's sustainability goal for PTT to become socio-eco efficient. To achieve this, PTT Group has set up the PTT Group Environmental Target Setting Standard to provide framework and basis for environmental target setting for PTT Group's business units and companies, as well as details of evaluation techniques for better and clearer short-term and long-term actions to reach the goal.

Performance

Indicators

Targets	Indicators	Setting the Targets																			
 Zero injury Zero fatality Zero spill  	<ul style="list-style-type: none"> Loss Time Injury Frequency Rate (LTIFR) and Fatality (via LTA), Total Recordable Injury Rate (TRIR), Total Recordable Occupational Injury Frequency Rate TROIF Major accident from product transport Amount and volume of spill of oil and chemical substances in operational areas Process safety 	<table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">TRIR</th> <th colspan="2">TROIF</th> </tr> <tr> <th>2013</th> <th>2020</th> <th>2013</th> <th>2020</th> </tr> </thead> <tbody> <tr> <td>Employee</td> <td>0.4</td> <td>0.33</td> <td>0.8</td> <td>NA</td> </tr> <tr> <td>Contractor</td> <td>0.86</td> <td>0.43</td> <td>NA</td> <td>NA</td> </tr> </tbody> </table> <ul style="list-style-type: none"> Lost Time Accident (LTA = 0 every year) In 2013: 0.3 times per 1 million km transport Declining every year starting from 2014 Zero unplanned shutdown 		TRIR		TROIF		2013	2020	2013	2020	Employee	0.4	0.33	0.8	NA	Contractor	0.86	0.43	NA	NA
	TRIR			TROIF																	
	2013	2020	2013	2020																	
Employee	0.4	0.33	0.8	NA																	
Contractor	0.86	0.43	NA	NA																	
 Reduced ecological footprint through life-cycle	<ul style="list-style-type: none"> Volume of sulfur oxide (Sox), nitrogen oxide (NOx) and volatile organic compounds (VOCs) being released Number of green products Volume of hazardous waste-to-landfill 	<ul style="list-style-type: none"> Zero increase of absolute emission growth rate in 2020 Increasing number of green products Absolute annual reduction target up to zero in 2020 																			
Top quartile performance in 2020	<ul style="list-style-type: none"> GHG emission/energy consumption 	<ul style="list-style-type: none"> Improve Group Energy intensity 1.9% annually until 2017 (rolling) 																			

What Next

- Process safety target will rolled out in 2014.
- 2014 water consumption will be rolled out in 2013.

Triethylene Glycol (TEG) Wastewater Reduction, project Rayong Gas Separation Plant

The Rayong Gas Separation Plant has treated wastewater contaminated with Triethylene Glycol (TEC) from its production process and therefore is able to reduce volume of hazardous waste-to-landfill by 120 cubic meters a week.

Energy Efficiency Project at Rayong Gas Separation Plant

PTT Group continues to improve energy efficiency through various projects. In 2012, the Rayong Gas Separation Plant initiated energy efficient improvement activities such as terminating fans use and reducing electricity consumption at the wastewater management system and the lighting system at the plant's hazardous zone. PTT is also constantly improving the environmental aspect of its main office with an aim to raise the building's energy efficiency. A case in point is when a chiller has recently been changed at PTT's head office, which allows the tower block to save approximately 680 MWh energy.

In 2013, PTT plans to conduct an energy-saving project at the sixth Gas Separation Plant where the CO₂ Membrane technology will be applied and used with Amine Absorber. The project is expected to reduce approximately 74,000 MWh energy or approximately 40,069 tons of carbon dioxide equivalent of the Greenhouse Gas (GHG).

PTTEP meanwhile will conduct the Clean Development Mechanism (CDM) project at Sao Sathian area in Sukhothai Province where gas from the well which is normally burnt down will be captured for utilization which helps the overall energy efficiency. This will also help reduce approximately 30,000 tons of carbon dioxide equivalent per year.

Key Recognitions



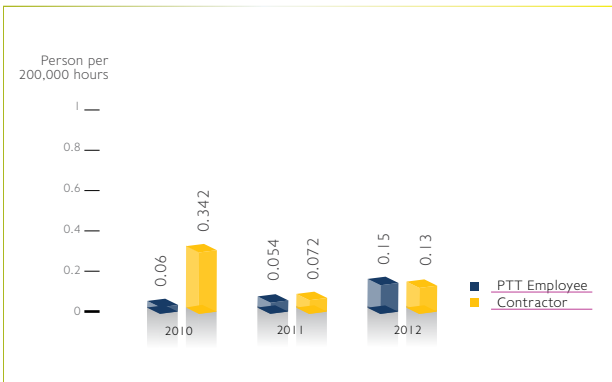
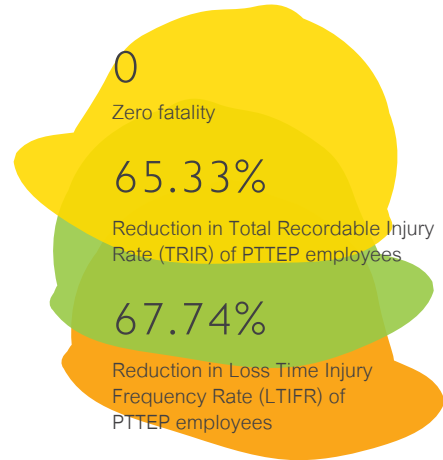
- The Surat Thani Petroleum Terminal has been awarded the outstanding workplace for safety and workplace environment at the national level for the 16 consecutive years.
- The Songkhla Petroleum Terminal received the best EIA Monitoring Award 2011 after winning this award at least 3 times. The Surat Thani Petroleum Terminal, the Phuket Oil Terminal, the Pak Panang Oil Terminal, the Sriracha Oil Terminal and the Khao Boya Gas Terminal each also received the outstanding award.
- The Best Factory Waste Management Practice under the 3R Principles 2012 Award and the Zero Waste-to-Landfill Achievement Award 2012 from Department of Industrial Works.
- 11 Oil and petroleum terminals received plaques of honor for achieving the criteria of the zero work accident campaign.

SSHE (Personnel and Process)

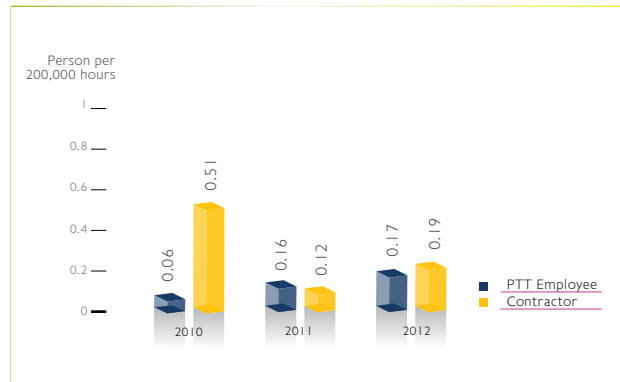
Personnel safety performance

Total recordable injury rate (TRIR) of employees and contractors of the Khanom Gas Separation Plant, the LPG terminal, oil terminal, petroleum terminal and aviation depot is zero.

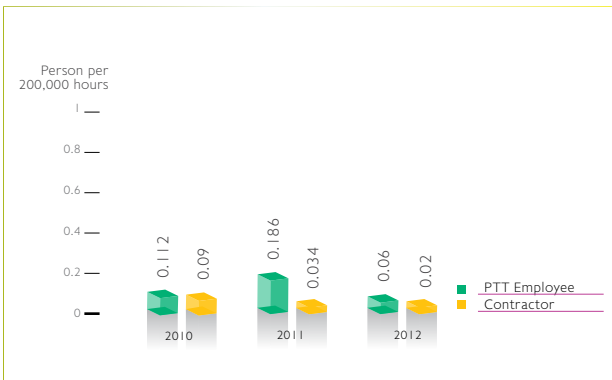
Key Figures



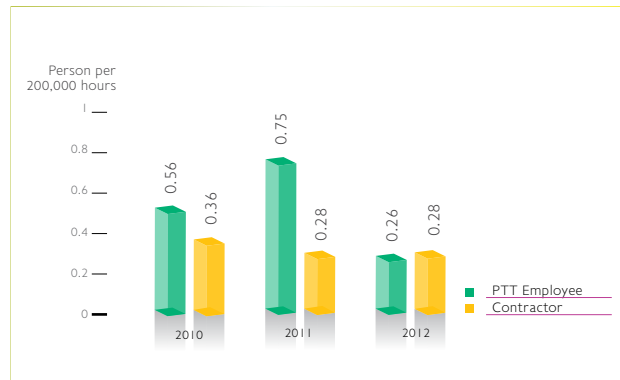
Lost Workday Case (PTT)



Total Recordable Injuries Rate (PTT)



Lost Workday Case (PTTEP)



Total Recordable Injuries Rate (PTTEP)

Process safety performance

PTT is undergoing an improvement of its accident reporting system to also cover process safety incidents. The report will be done online via a website.

PTT has a plan to communicate definition and data collection and reporting guidelines within 2013 and aims to be able to report process safety incident by 2014.

Security practice

Under the PTT Group QSHE policy and SSHE management standards, PTT has formulated the Security Practice Management Guideline, which consists of security standards, risk assessment guideline, and corporate safety assessment program to set a framework as well as supervision and operation directions to companies within the group.

In addition, human rights principles under the Universal Declaration of Human Rights have been communicated through a training program known as “Mr. Strong” in which 252 participants from the Phrakanong Oil Terminal, the Bangchak Petroleum Terminal, the Surat Thani Petroleum Terminal, the Khao Boya Gas Terminal and the Rayong Gas Separation Plant attended.

The training contents included:

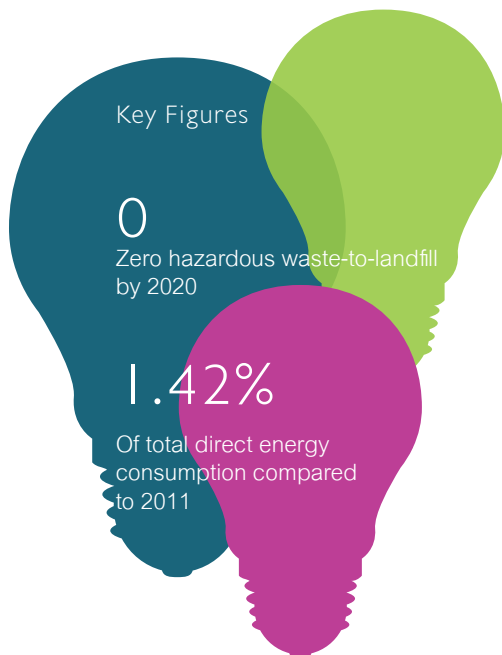
- The universal rights of liberty and security – everyone has the rights to live in freedom and safety. Security guard therefore is an honorable profession since the job protects human rights of everybody.
- No one shall be subject to torture or to cruel, inhuman or degrading treatment or punishment – security guard has no right to use violence against other people even they are alleged offenders.

- No one shall be subject to arbitrary arrest, detention or exile – security guards have no right to arrest anyone except if offenders committing wrongdoing and being caught red-handed within PTT’s premises.
- Anyone who is charged with a penal offence has the right to be presumed innocent until proven guilty in a public trial.

In 2012, PTT conducted the security drills in tandem with an emergency drills in various operation areas. During the past year, the drills were conducted at the Rayong Gas Separation Plant, Pipeline Operations Division, every area of Oil Terminals, LPG Terminals, and Petroleum Terminals throughout the country. In 2013, PTT is developing a corporate-based operation guideline on human rights for implementation by PTT and PTT Group.

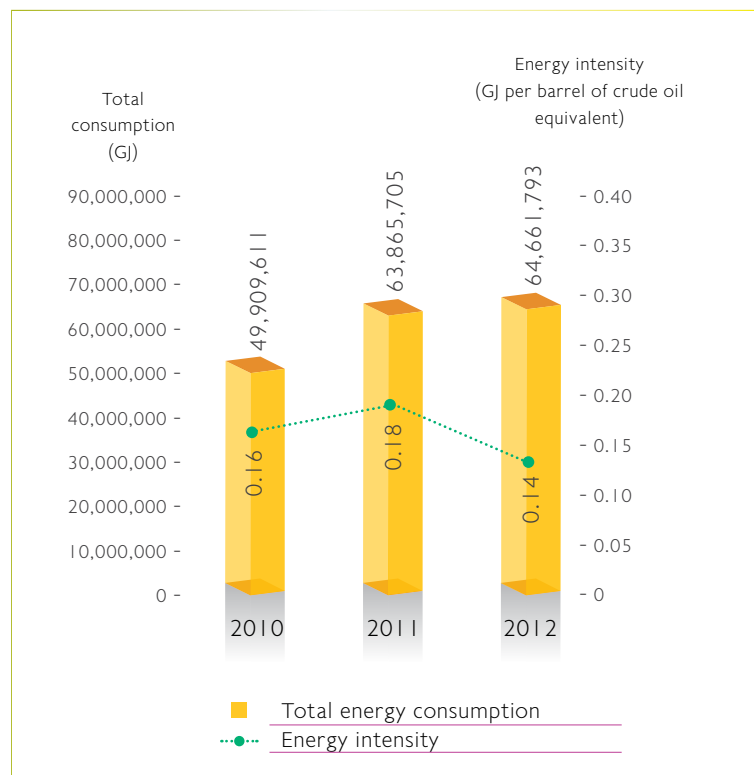
“Energy efficiency not only reduces our production costs but also minimizes environmental impact due to lower GHS emissions. The energy efficiency project therefore yields benefit in two dimensions. Even if financial returns of an energy efficiency project are low, but if its benefit to the environment is high, PTT will choose to invest in that project. This is because PTT’s investment decision does not exclusively depend on a financial return, we also take social and environmental benefits into consideration.”

Dr. Pailin Chuchottaworn,
President & CEO



Energy consumption performance

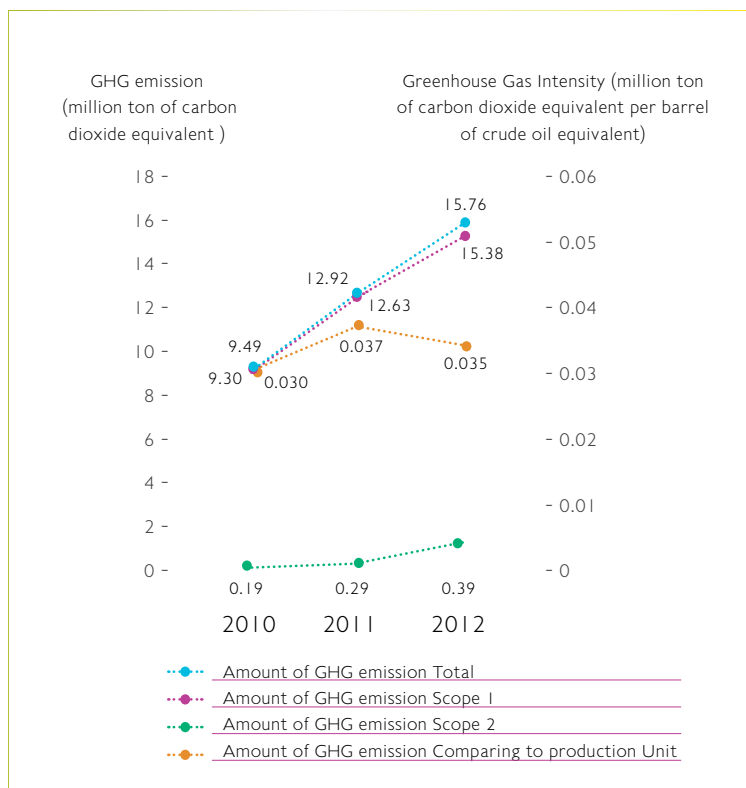
Total energy consumption has essentially increased due largely to an addition of the NGV business into the scope of reporting. At present, PTT is updating its previous data to correspond with the 2012 figure and for reporting purpose in the following year. However, the volume of energy consumption per product has indeed declined compared to what happened in 2010, due to various projects in place to promote direct and indirect energy-saving campaigns.



Energy Consumption of PTT and PTTEP

GHG emission performance

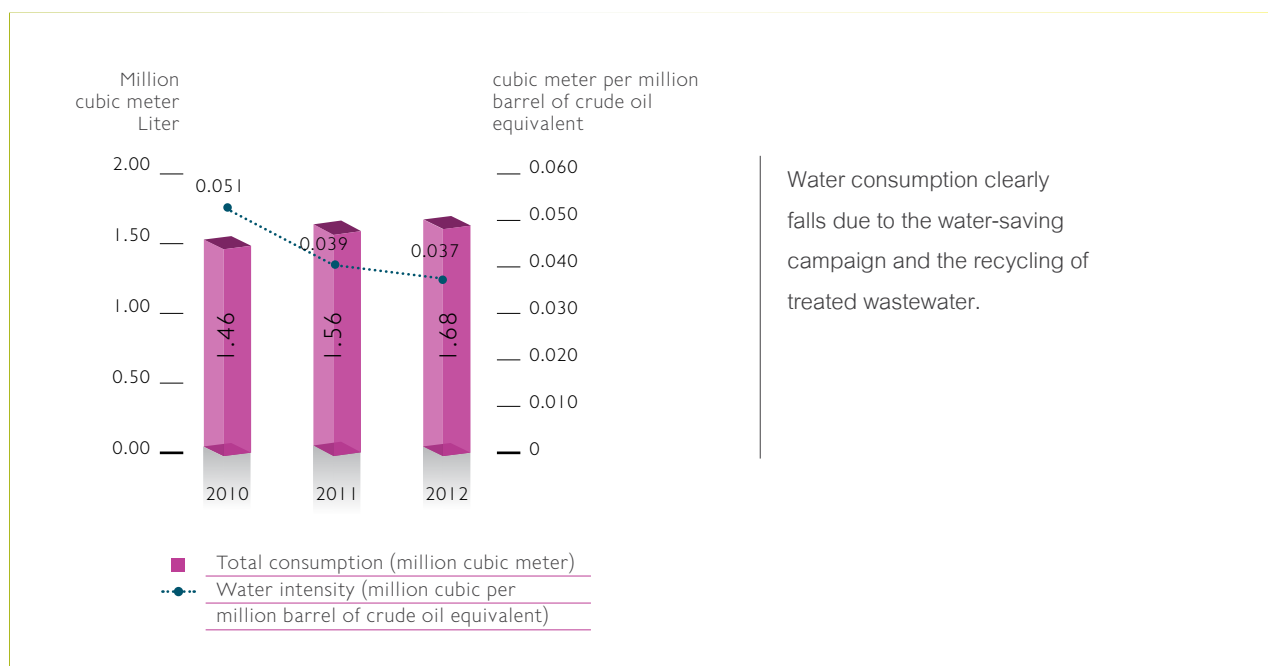
PTT's and PTTEP's GHG emissions materially increased in 2012 due to the Gas Separation Plant, Unit#6, had been in operation all year long. Besides, PTTEP started producing from its Bongkot production base. However, the GHG intensity tended to decline, which signals a better and more efficient operation.



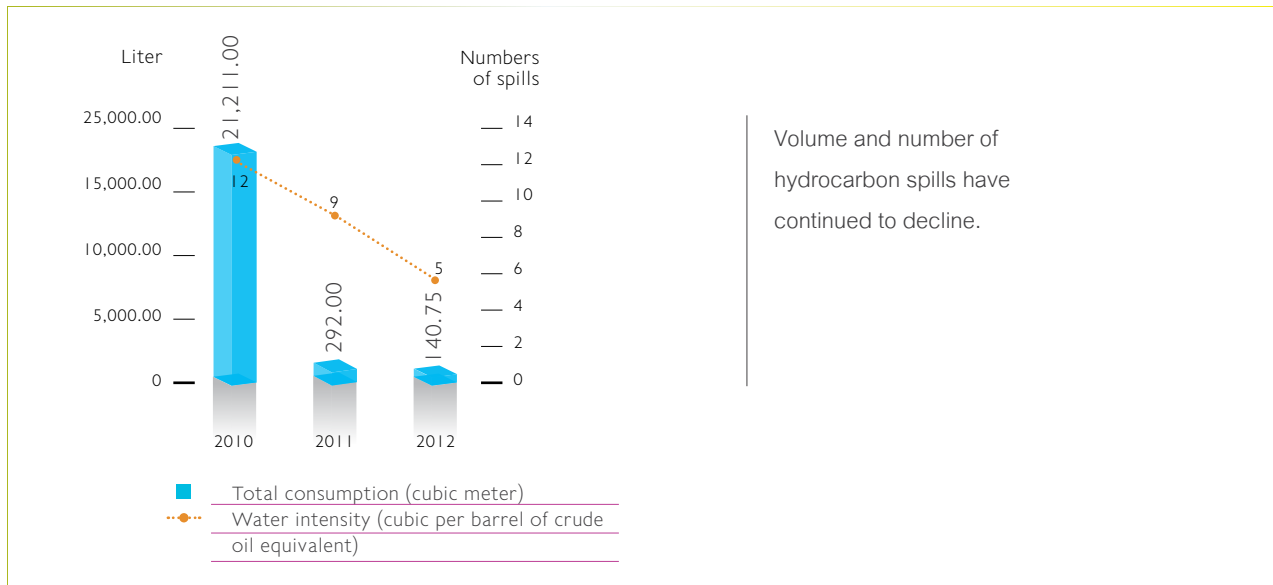
Environmental and Safety Performance Highlights

Greenhouse Gas Emission of PTT and PTTEP

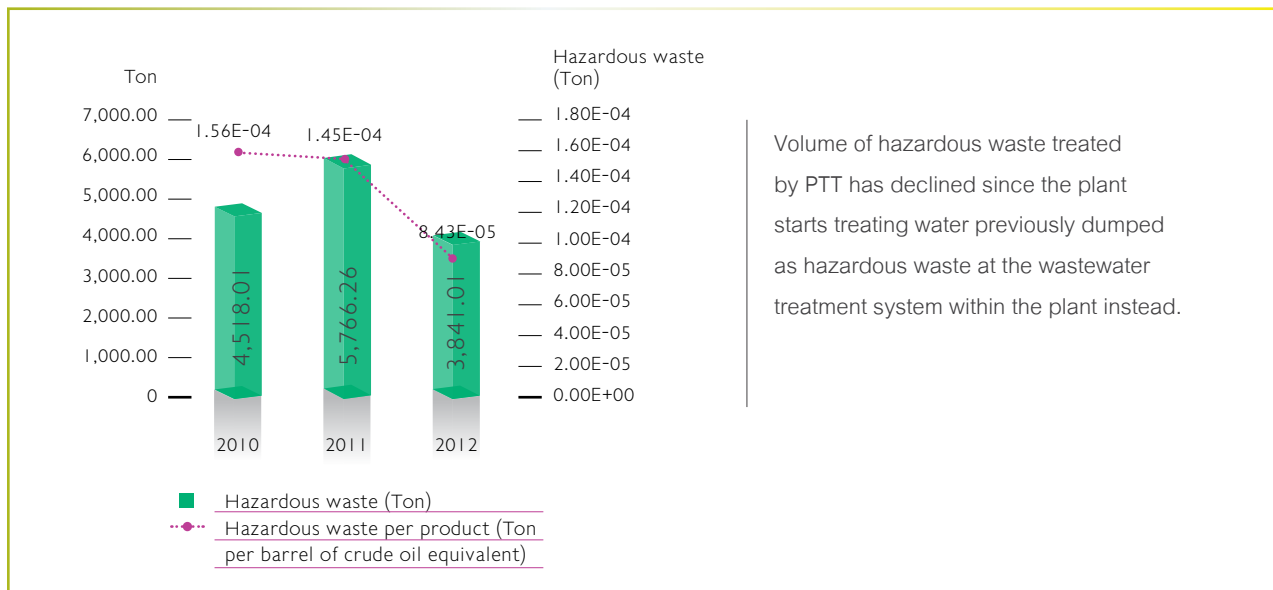
PTT commits to continuous improvement of its environmental and safety performances with targets being set for major issues related to the business's main risks.



Volume of total water consumption (Rayong Gas Separation Plant)



Hydrocarbon spill (PTTEP)



Volume of hazardous waste-to-landfill (Rayong Gas Separation Plant)

Management of Contractor SSHE

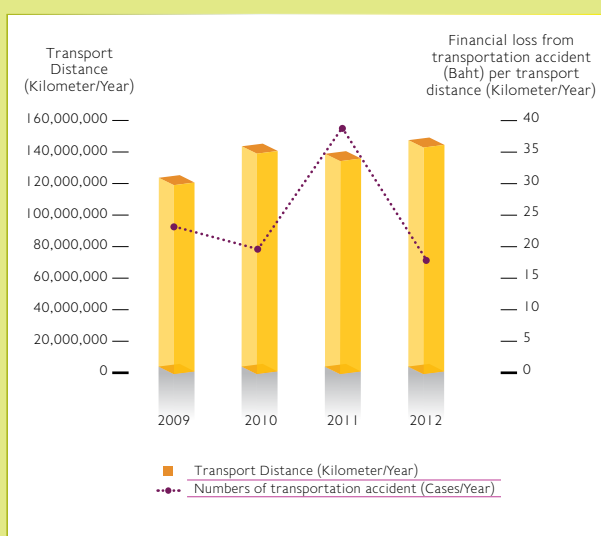
PTT has developed the Contractors SSHE Management system, which is based on its existing management system with an addition of SSHE criteria into the procurement process. The system's important aspect that has been expanded from what existed before is a requirement that contractor must conduct a SSHE risk assessment prior to the hiring process. In addition, PTT also implements the SSHE screening process where contractor is required to submit work program in considering to identified SSHE risks. In addition, the SSHE criteria are added as one of the contractor selection criteria and conditions for each payment of the SSHE operation fee are made clearer to encourage contractors to complete their SSHE work accurately. In addition, the post-project SSHE evaluation process is tightened up for clearer and more stringer effects.

Following the development of PTT's Contractor SSHE management policy, recordable injury statistics at the three pilot areas of the Rayong Gas Separation Plan, the Sriracha Oil Terminal, and the PTT Headquarter where the system was introduced has become zero.

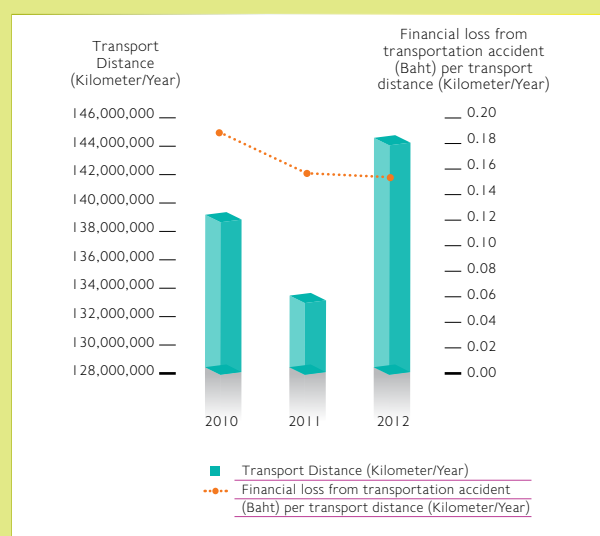
- A Defensive Driving coursework had been organized between 2010 and 2012 for a total of 70 classes with 2,363 employees attended the training.
- The definition of major accident for logistics trucks has been modified where impacts to community and environment and impacts to corporate image are added into the definition of loss of life and properties.
- The Road Transportation Management Guideline has been formulated. This consists of
 - Checking logistics truck on a random basis.
 - Compiling stats and information and analyzing cause of accident of logistics trucks; investigating every case of serious car and logistics truck accident to find out the root cause behind the incident and to prevent repeated incidents.
 - Communicating and organizing training of PTT Group's Road Transportation Management Guideline to inform and encourage safe practices by relevant parties.

Logistics Zero Accident

In 2012, PTT initiated the Logistics Zero Accident campaign with more than 50 transportation companies owing over 1,000 transportation trucks participating in the project. The campaign helped reduce accident rates of both cars and logistics trucks to the lowest level even compared to the statistics during the past three years.



Numbers of transportation accident per transport distance



Financial Loss from transportation accident per transport distance

In 2012 value of NGV vehicle accident has declined by 43% in comparison to 2010.

SSHE Contractor Auditing

PTT underlines the importance of SSHE performance of its contractors and customers due largely to their enormous presence in PTT's supply chain as their effectiveness could inevitably affect the business. To address this concern, PTT periodically audit SSHE performance of its contractors and customers. In 2012, the Quality, Safety, Health and Environment (QSHE) Department of PTT's Oil Business Unit audited its suppliers' and customers' operations for possible impact to PTT's products and services. The audits include, among others, an assessment of LPG tank and lubricant tank manufacturing factories, private LPG packing plants, and LPG service stations. Details of the audits are elaborated in the terms and conditions of relevant TOR that covers contractor's quality and SSHE performance as well as related environmental laws. In 2012, more than 500 suppliers and customers were audited (covering 136 suppliers out of 150), all of whom successfully passed the TOR and were in compliance with SSHE legal requirements where no major deficiencies that could seriously jeopardize SSHE risk were found. The Oil Business Unit plans to audit all of its suppliers by 2013.



Capital Project Management

Managing Impacts on Communities

Sustainable co-existence with the communities is the ultimate goal for PTT. Thus, we give the utmost care to address the possible community and environmental impacts from natural gas pipeline before, during, and after construction.

PTT has introduced measures to reduce environmental impacts during construction, which include supervising contractors and subcontractors, from causing damages to the communities. PTT gives priority to the natural gas pipeline safety in every step of its operation starting from planning to design, construction, operation, and maintenance so that the communities within surrounding area can be assured of maximum safety. PTT pipelines are maintained according to international standards. Additionally, the system is insured for damages to the community and society caused by PTT's operation. This culture of safety is reflected in our safety record. Over the past thirty years of pipeline operation in Thailand, PTT has no record of death or serious injuries associated with the system.

Social, Environmental and Health Impact Assessment

Social, environmental and health impact assessment is conducted for every project under development. The assessment is carried out by institutes or agencies that are registered with the Office of Natural Resources and Environmental Policy and Planning (ONEP). Results of the assessment are used as part of the Environmental Impact Assessment (EIA) report which is submitted to ONEP for project approval process. Once the project is approved, preventive measures are put in place and monitoring reports conducted by Third-party are submitted to the ONEP and other relevant agencies every six months throughout the entire project. The Corporate SSHE Department is responsible for governing process to ensure that every project required to prepare an EIA report has produced a report that fully meets ONEP's requirements. The Corporate SSHE Department is accountable for implementation and follow-up within organization to ensure measures are being implemented by all PTT business units and report to the Office of Securities and Exchange Commission (SEC) annually.

In 2012, 42 projects were subject to the environmental impact management.

Of these, 3 are associated with improvement of production process of natural gas separation plant and power plant, 37 are onshore natural gas pipeline projects, and 2 are offshore natural gas pipeline projects. Offshore projects include a project to increase pressure in the pipeline and the offshore natural gas pipeline project from Platong and Bongkot fields that is approximately 86 kilometers. Of all, 14 had their EIA reports approved before 2012 while another 7 were given green-light in 2012. 15 additional projects are under the engineering detailed design stage where construction has not started.

The study of social, environmental and health impact assessment in PTT's capital projects such as the fourth transmission pipeline project (Rayong-Kaeng Khoi), which is the principal pipeline, has already been approved by an expert committee and the National Environmental Committee.

The management and planning of natural gas pipeline projects are categorized into 3 stages of the Project life cycle. The first stage is before construction in which potential impacts upon the social context and environment are assessed prior to the project conduct. The second stage is during the construction phase of the project. During this stage public hearings are conducted and stakeholders' opinions on the impacts of the projects are heard. The last stage is after construction is completed; here project evaluation is conducted for further suggestions and improvements.

PTT is required to conduct an assessment on social, environmental and health impact in accordance with the Ministry of Natural Resources and Environment's Rules , procedures and guideline for the preparation of Environmental Impact Assessment (EIA) Report dated December 29, 2009 and other related legislations. The assessments are carried out by education institutions or companies certified by the ONEP with a minimum coverage distance of 500 meters.

Management of Impacts on Communities	Number of Projects
All projects in 2012	42 projects
Projects with social, environmental or health impact assessment (SIAs, EIAs, or HIAs)	42 projects
Major capital projects including gas transmission pipeline	5 projects
Public hearing	More than twice per project area

Public Consultation

For natural gas pipeline project PTT is committed in engaging all types of stakeholders through public consultation including community residents, local government agencies, and related private entities in the local area. The public consultation process is as follows:

- Present the project's preliminary information and propose potential alternative pipeline routes.
- Incorporate stakeholders' feedback on preferred pipeline routes.
- Present the best alternative option based on stakeholders' feedbacks, and present preliminary construction details and initial measures to reduce environmental impacts.
- Explain construction procedures, construction schedule for each project area, measures to reduce environmental impacts before construction starts, also stage public hearing to listen to opinions and concerns of stakeholders, receive feedbacks resulted from construction, and resolve initial conflicts to minimize potential conflict between communities in the project area and PTT.
- Restore the area and follow-up with any complaints and feedbacks resulted from the construction.

In addition, in 2012, several public hearings were held in various projects including the onshore Nakhon Sawan pipeline project where focus group meetings of stakeholders affecting from the project were organized to listen to their opinions at Maha Rat District, Phra Nakhon Si Ayutthaya Province. The Nakhon Ratchasima pipeline project also organized public hearing with the concerned public and other stakeholders to conduct a public review of the project's environmental and health impact assessment report at the Greenery Resort, Khao Yai. Finally, the fourth transmission pipeline project (Rayong-Kaeng Khoi) staged focus group hearing with stakeholders affecting from the construction at Moo 1, Tambon Paka, Ban Na District, Nakhon Nayok Province.

The onshore natural gas pipeline from Thai-Myanmar border to the BVW#1 project has never been classified as a project with serious environmental impacts according to the Announcement of the Ministry of Natural Resources and Environment. However, since the project area is home to many races and nationalities, PTT decided to organize more public hearings than required by the law and engaged all groups of stakeholders regardless of sex and age. Facilities were provided and appropriate timing was chosen to allow as many people as possible to participate in the process. Moreover, understanding of the subject and attitude of the communities towards the project were measured through questionnaire survey. In addition, PTT asked basic information of questionnaire respondents to learn their age groups for the purpose of analyzing social-based information that could subsequently support the project work.

Use of Land and Property for the Natural Gas Pipeline Network System

For any projects, PTT's aim is to avoid permanent resettlement. Construction routes and positions are designed to minimize resettlement impact. In case where resettlement is necessary, PTT will provide information and come to term with the affected communities to get their acceptance before paying compensations for the damage incurred from the removal of houses and buildings as well as livelihood areas. Additionally, repair will be conducted to restore damage inflicted by the construction to the previous condition as much as possible. However, ownership in the land and property used for pipeline laying shall remain with the original owner who is subjected to certain conditions such as no building or structure construction and no planting of perennial tree. PTT complies with the Energy Industry Act from natural gas pipeline route selection which must be approved by the Energy Regulatory Commission; land compensation; and notification of land and property owner prior to pipeline construction. In addition, selection of pipeline route will consider the route with the least impact on communities and environment and mostly accepted by communities through various engagement processes including EIA and public consultation.

Proactive Community Engagement

The natural gas pipeline project is one of PTT's projects aiming to strengthen energy security as well as to accommodate natural gas demand of the country. The project conducts community consultation through various channels such as focus group, individual meeting, public hearing in village and questionnaires to survey and evaluate the community's need and satisfaction. In addition, other communications channels such as phone, website of the Office of the Permanent Secretary, Prime Minister's Office, coordination center at the project site, and other information center at various agencies, are used for reaching various stakeholders and for receiving recommendations and advices through which the project's progress will be constantly monitored.

Community development projects in area where PTT has natural gas pipeline are categorized into 5 areas:



Education - this includes merit and need-based scholarships for students from local schools; donating computers and accessories as well as books to school library.



Environment - this refers to collaboration with communities and local leaders to plant trees in the project area; re-landscaping the community's park area.



Sports - this covers donating exercising and sports equipment, building playground for exercising purpose.



Art and culture - this refers to participating and promoting the local community's customs and culture.



Economy and vocational - this includes developing and enhancing local product, finding distribution channels for community products.

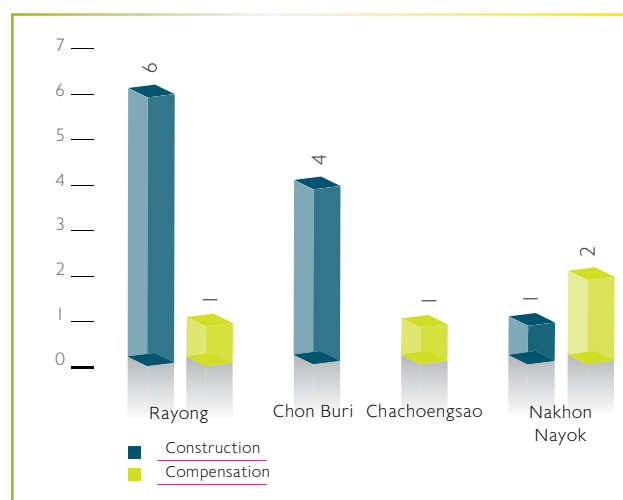
PTT's approval for a community development project in the natural gas pipeline area and other activities proposed by the community will be subject to the activity framework in these 5 areas mentioned above in order to ensure that all community development activities are in the same direction. Some of the projects are already approved, include promoting community products at PTT's exhibition and finding distribution channel for community products and

selling complimentary products from different communities to increase sales and marketing opportunity. PTT also helps expand the market for areas that are short of a particular product by bringing one product from one area to another. In addition, an egg-for-waste project was organized to support the community's economy at Tambon Nongsarai, Pak Chong District, Nakhon Ratchasima Province, located within the area of the onshore Nakhon Ratchasima natural pipeline project. At PTT's KM Day event, a group of leather makers from Rayong Province, which is part of the fourth transmission pipeline project (Rayong-Kaeng Khoi), sold their products there, together with a group that processed agricultural products from Phra Nakhon Si Ayutthaya Province which was part of the onshore Nakhon Sawan natural pipeline project, and a community that promoted vetiver grass to preserve the community's drinking water resource from Tambon Nonsee, Kabin Buri District, Prachin Buri Province, under the fourth natural gas pipeline project (Rayong-Kaeng Khoi).

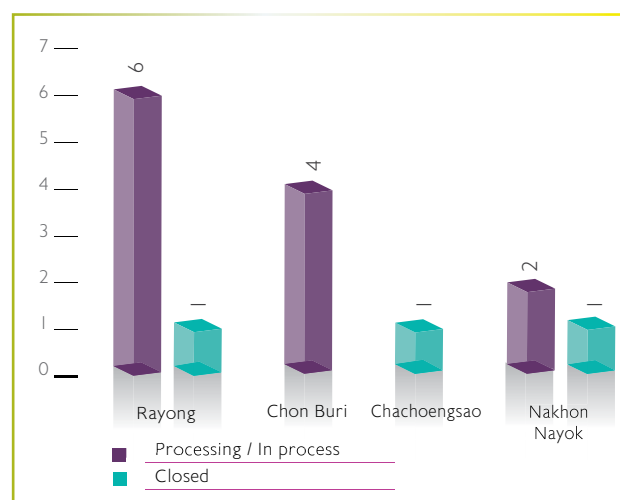
Community Grievance Mechanism

During the construction, affected party can report any grievance to the grievance center at the project's site office. Once a grievance is received, an officer will handle the case and will schedule the complainant to visit the problem area together. Officer will then record what is found or an incident witnessed together with an initial cause before identifying type of such grievance. The complainant is asked to review details in a grievance form which will be recorded and signed as evidence. If the grievance is identified as a general grievance, a preliminary cause will be investigated immediately after the complaint is filed. If no mutual agreement can be reached, PTT will submit the matter to the environmental impacts monitoring and supervising committee which consists of members from the government and community leaders who will manage the grievance and facilitate reconciliation for mutual settlement. Grievances are based on different contexts that varied from area to area, including interest groups, local politics, and local customs and culture.

In 2012, the fourth transmission pipeline project (Rayong-Kaeng Khoi) received 15 grievances, most of which were during the construction stage. This included grievance of damaged houses, loss of business opportunity, environmental impacts from dust and noise, and demand for compensation from the construction. Most grievances were made through phone calls. PTT has already coordinated with related parties and is currently resolving such grievances with them.



Types of Grievances from fourth transmission pipeline project (Rayong-Kaeng Khoi)



Amounts of grievance of the fourth transmission pipeline project (Rayong-Kaeng Khoi) categorized by status.

Biodiversity

Realizing the importance of biodiversity, PTT has included biodiversity as part of its QSHE policy where it is clearly indicated that ecological protection and maintenance of biodiversity is a must. At present, PTT is formulating its sustainable biodiversity conservation and protection strategy by collaborating with ONEP and Ministry of Natural Resources and Environment. The strategy will also cover public relations and campaigns to educate and raise awareness of the public over the priceless value and importance of biodiversity.

This strategy will be integrated into PTT's internal departments which will also be subject to the biodiversity management standard which currently being formulated and expected to be rolled out in 2013. The standard will consist of risk assessment guideline, identification of sensitive areas to the environmental impacts, selection of project area, impact assessment, and preparation of biodiversity action plan on the basis of conserving biodiversity.

Biodiversity Management

PTT's biodiversity management is a project-based management approach where assessment of impacts to biodiversity is part of a study to prepare an EIA report, according to the laws of Thailand. Normally, biodiversity impact assessments are carried out by external experts which cover assessment of impacts as well as protective and preventive measures before construction starts, during the construction, and during the operation period with an awareness of the project's possible impacts to biodiversity within the operation area.

To study biodiversity, a survey of the diversity of flora and fauna in the project's study area will be conducted and possible impacts resulted from the project construction to existing plants and wildlife will be assessed. In addition, the use of flora and fauna by communities in the project's area will also be identified. All information will be put into the Geographical Information System (GIS). For example, PTT has conducted biodiversity in Thailand area within the 2-kilometer radius around the BVW01 as part of its EIA study of the natural gas pipeline project from Thai-Burmese border to the BVW#1 gas control station located at Ban I Tong, Tambon Pilok, Thong Pha Phum District, Kanchanaburi Province, which is situated within the Khao Chang Puak Natural Forest Reserves.

A study of forestry resources of exploration plots identified more than 74 perennial trees, 32 types of seasonal plants, 5 types of palm, 32 types of grass, and 8 groups of other plants. The Fisher biodiversity value in the area is 13.24, which is considered very high for flora biodiversity. According to the study of wild animal through direct and indirect surveys, 141 kinds of wild animals in 106 genus, 53 families and 21 classes which can be classified into 16 classes of mammal, 98 classes of birds and 18 classes of reptiles, and 9 types of amphibious animals were found. One species, *Muntiacus feae*, is classified as endangered wild animal, according to the Conservation and Protection of Wild Animals Act, while 3 are identified as endangered wild animals under the IUCN classification; namely, *Indotestudo elongate*, *Manourai emys*, and *Hylobates lar*.

During the operation, the project needed to open up approximately 4 rai of land to lay down gas pipeline. Realizing the importance of possible impacts from construction to biodiversity in the project area, PTT introduced measures to protect and resolve environmental impacts such as minimizing areas where trees will be slashed, returning and allowing as many areas as possible to be restored to the previous condition, strictly preventing employees from hunting wild animals and coordinating with wild animal experts in case animal evacuation was required. PTT properly informed these prevention and impact-reduction measures, and listened to the public's opinions throughout its EIA study procedures on the basis of ONEP's guideline.

Meanwhile, compliance with these preventive and resolving measures will be monitored, examined and reported to ONEP and other related agencies every six month, both during the construction period and the project operation period.

PTT Project in Thailand's conservation areas in 2012

Project area:

Natural gas pipeline areas of approximately 50 kilometers in distance

Project area in protected areas:

Thong Pha Phum National Park, Kanchanaburi Province

Activities in protected areas:

Natural gas pipeline areas

Restored project areas:

Natural gas pipeline areas

Operation activity:

Monitoring the restoration of areas where gas pipeline has been laid. Restoration of forestry conditions in the National Forest Reserve area, Thong Pha Phum District and Sai Yok District. Corroborate with Thailand's biodiversity resource management policy to study biodiversity in the forestry area of the western Thong Pha Phum project so that local communities may use information derived from the research to manage and benefit from their biodiversity in a sustainable manner.

Corporate citizenship

PTT feels that taking care of the society, community and environment in every area where we run our business is an important task, which includes responding to social problems in an overall context both now and in the future, through social projects and various forms of activity management for the benefit of the public. Activities can be carried through community economic development as well as social and environmental development, where the Corporate Communications and Social Responsibility Unit is responsible for overseeing from formulating a policy to planning annual strategy, running projects with various business units, monitoring results, and reporting directly to President & CEO and the Corporate Governance Committee.

In 2012, PTT continues to support social, community and environmental development projects in total worth more than 1,650 million baht of contribution, through 6 areas of social and community development projects as follows.

Area 1: Education

Goal: To encourage young adults to become knowledgeable in the field of science and energy, and to develop more rounded education curriculum.

Results of major projects

- Developed basic infrastructure for schools in need. In 2012, PTT built two-story eight-classroom buildings for Ban Sak Lookya School in Rayong Province and Ban Tha Muang School in Nakhon Si Thammarat Province. These are the 24th and the 25th school built by PTT. In addition, the 30th and 31st Thai Energy for Thailand (Palang Thai) Library were built for the Wat Sadej School in Lampang Province, the Wat Bangkoo Community School, and Nakhon Si Thammarat Province, respectively. PTT also donated books to libraries in 84 schools under the PTT Group network nationwide.
- Developed schools with special emphasis on community's input into school's curriculum under the Thai Energy (Palang Thai) School Project. 5 public hearings were organized for communities to formulate a school development plan together with school officials in Rayong, Saraburi, and Songkhla provinces.
- Gave over 2,000 scholarships to students in primary schools, secondary schools, and tertiary education institutions totaling 6.5 million baht.
- Organized science, energy, and community learning camps for secondary school students and vocational students or equivalent. The learning camps include:
 - “Petro Camp to Petro Champ.” The camp supports students who are interested petrochemical and provides scholarships for further education in the field.
 - “Energy Learning Camp.” The camp was a part of the 4th PTT Youth Camp, organized under the theme of “Returning smile to community”, students applied energy-based knowledge to create energy efficient inventions that can be used in the community. The champion award for secondary school student level went to the “Emergency toilet” from the Sawan Anan Wittaya School. The winner at the senior high school level, Sansai Wittayakom School, submitted a project that produces biogas from community waste. For vocational students and equivalent, students from Buriram Technical College created a device to mechanically separate coffee lid from its bottle.
 - “Young Financial Star Competition.” This competition was organized by PTT, the Stock Exchange of Thailand, the Thai Financial Planners Association and the Thai

Securities Company Association. “PTT CSR Star Team.” For this, PTT brought young adults to learn first-hand community wellbeing and problems and let them propose a community development plan. The winner of this competition was the Green Packaging Team who proposed a project to turn sugarcane leftover into impressive value-added community products.

Area 2: Community and society development

Goal: To reinforce community strength by encouraging self-reliance and living in a self-efficiency manner.

Results of major projects

- Developed 24 self-sufficiency learning centers under the “Forest Conservation, Building People, 84 Tambons on a Sufficient Path” project in 4 regions nationwide. The project produced local innovations in 16 sub-districts. Among the innovations are biomass stove, pig-farm biogas system, and windmill to pump water.
 - Collaborating with network members such as the Village Foundation, Bank for Agriculture and Agricultural Cooperatives, and NECTEC, to establish the “Learning Institute for Everyone” that offers programs at undergraduate and graduate levels.
-

Area 3: Management of biodiversity

Goal: To work with communities in all sectors to sustainably restore, conserve, and manage local biodiversity at various locations nationwide.

Results of major projects

- In 2012, PTT continued to work with forest-surveillance communities under the Reforestation Project to Celebrate HM the King’s 50th Anniversary in his Ascension to the Throne where the original one million rai of forests are closely monitored. The surveillance is done through various projects such as; the 12 courses training of voluntary forest firefighters with 1,460 participants; the training of voluntary forest guards which recorded 1,614 participants attending a total 12 programs; and the PTT forest youth guard project where 1,604 young adults were trained in 15 classes. In addition, PTT planted additional 800 million young plants in the Reforestation Project to celebrate HM the Queen’s 80th Birthday Anniversary in the 5,000 rai area in Nan Province. PTT also planted trees in deteriorated areas at Ban Buak Ya, Nan Province, for a total of 1,000 rai of land under the project initiated by HRH Princess Maha Chakri Sirindhorn; and another 5,000 rai of land in Rayong Province under the Green Rayong Project.
- The Green World Foundation organized a painting contest under the theme of environment and natural resource conservation. In 2012, 671 pieces of work were submitted to the contest, of which 81 won the awards presented in an award ceremony organized to publicize the work of the winners.
- Working with the Sirinat Rachinee Learning Center of Mangrove Forest Biodiversity at Prachuap Khiri Khan Province, PTT promoted biodiversity learning. 39 children and 42,514 members of the local communities participated in the conservation of their own mangrove forests through the Young Guide Project where they took part in the center’s learning process on how to protect natural resources.
- PTT is involved in a project to expand the use of vetiver grass for water and soil conservation in 14 locations around Thailand.

Area 4: Development of urban environment

Goal: To promote ways for industries and communities to co-exist.

Results of major projects

PTT, in collaboration with communities, industry peers, and related parties, around PTT operation sites, aims to improve people's quality of life, environment, safety, and health.

- Increased green space and public parks for the community (e.g. Green Rayong Project and the HRH Princess Maha Chakri Sirindhorn Herb Garden). In addition, PTT is conducting a conceptual design to build protection strip in 5 pilot locations.
 - Tuned up 112,736 cars in the PTT Engine Tune-Up project, saving more than 8.2 million liters of fuel and 246.9 million baht of foreign exchange. The engine tune-up also reduced the release of 17,776 tons of CO₂ into the atmosphere.
 - Educated 700 households in 7 areas nationwide on how to use cooking gas safely.
 - Offered basic healthcare, health check-up, and dental services through mobile medicate unit to 3,727 people in 25 communities in 17 provinces.
-

Area 5: Development of networks to leverage the country's fame

Goal: To promote Thailand's image and reputation in art, cultural, and sport, domains through collaboration with various agencies.

Results of major projects

- Organized the 27th PTT Art Contest under the theme of "Green Living: Saving the Earth" with Silpakorn University; Collaborated with Chiangmai University, Khon Kaen University, and Thaksin University, to organize the children's live painting contest in various provinces; organized the Puja Drum Beating competition and a youth camp to preserve the traditional Puja drum-beating in Lampang province.
- Sponsored various professional and amateur sport events such as the ATP PTT Thailand Open, the WTA PTT Pattaya Open, the PTT Junior Championship tennis tournament, the PTT Golf Junior Open Champion, Thai chess competition, and PTT Rayong Football Club.



Area 6: Cultivation of employee awareness**Goal:** To promote public service mindset from within the organization

Results of major projects

- Allocated time for employee to spend at least 4 hours per person per year to participate in benevolent projects through PTT's Thai Energy for Public Mind Club or other social activities. In 2012, PTT employees dedicated 22,836 hours to public service. This accounted for 13,002 hours of public work done during office hours and 9,834 hours of public work committed outside office hours.
- Created the "Restroom 20" Project by asking restroom users at PTT gas stations nationwide to donate 20 baht everytime they use the service, of which the money collected are used to support public infrastructure. In 2012, 1.7 million baht was donated through the project; the money was used to build restrooms for the Talingchan Child Development Center, the Wat Nong Bua School in Saraburi Province, and the Ban Khao Chee Child Development Center in Chon Buri Province.

Area-level Projects

Local communities in Rayong Province

PTT understands the importance of being a good community member in the areas where we operate. In Rayong Province, considered to be the significant home base and extremely important production asset, PTT established the PTT Group CSR and Media Communications Committee in 2009. The committee has members including senior executives from 11 companies under PTT Group which operate in the Province. The committee is responsible for sustainability efforts in the province through CSR activities, communications, and QSHE work in a unified manner. PTT has set up social development targets in 3 main areas: enhancing quality of life, adding green space, and supporting education.

Enhancing quality of life

PTT is currently developing community business organizations in 63 targeted communities in 4 municipalities within 2 districts; namely, Mab Ta Phut Municipality and Tambon Mab Kha Pattana Municipality of Rayong District, and Tambon Banchang Municipality and Muang Banchang Municipality of Ban Chang District. PTT conducted surveys and community meetings to identify business potentials that would satisfy market's demand in the area. The study listed food, snack and beverage producer, gardening and lawn care, and car rental as potential businesses to be developed. PTT is corroborating with communities to produce business models, write business plans, and supervise management direction to develop relevant communities into a community enterprise organization. In addition, PTT is promoting community wellbeing by opening 4 "sharing compassion" clinics in PTT's business premises to offer free healthcare services to residents in adjacent communities to PTT's compounds. In 2012, PTT's clinics served 16,680 people.

Adding green space

PTT continued to add green areas in the Rayong province under the PTT Group's Green Rayong Project. In 2012, PTT planted trees in a 5,000-rai area at the Chawa Cooperatives in Wang Chan District. PTT Group initiated the "1 Community 1 Company 1 Green Area" project among PTT Group companies, communities, and local public agencies, to develop and take care of the green areas. PTT carried out reforestation efforts in the 18-rai area of the Mab Chalude community and the 33-rai area of the Mab Ta Phut Municipality area. In addition, the HRH Princess Maha Chakri Sirindhorn Herbal Garden continued to open for Rayong residents, where as many as 320,198 visitors came to the park. The park generated more than 19.1 million baht incomes from sales of local products to the local community during the past year.



Supporting education

PTT provides 42 secondary-school scholarships and sponsors the development of 18 schools in areas where it operates. In addition, the company organizes mobile exhibitions to provide petroleum, energy, and industry knowledge, which was visited by 5,850 students. The exhibition activity has now been expanded into the "Petro Camp to Petro Champion", a petroleum-concentrated youth camp which has been organized for 6 consecutive years to promote children's understanding and perception of the petrochemical industry. Moreover, PTT is currently sponsoring 24 students selected to continue the tertiary education. Under the Thai Energy School Project, PTT built a school, renovated the library, and donated study materies for Ban Sak Lookya School in Rayong Province.

Under the name of the Association of Community Friend, PTT Group in conjunction with industrial businesses in Rayong Province, support community improvements in public health, education, and environmental areas. The Association has an ambitious goal to transform Rayong Province into an ecological-based industrial town. PTT Group is responsible for social, education, and public health projects where it provides medical professionals to hospitals in the area, support occupational and medical specialists through graduate schools, organizes mobile medical unit to provide health check-up and basic healthcare to various communities in the area, and trains the village public health volunteers.

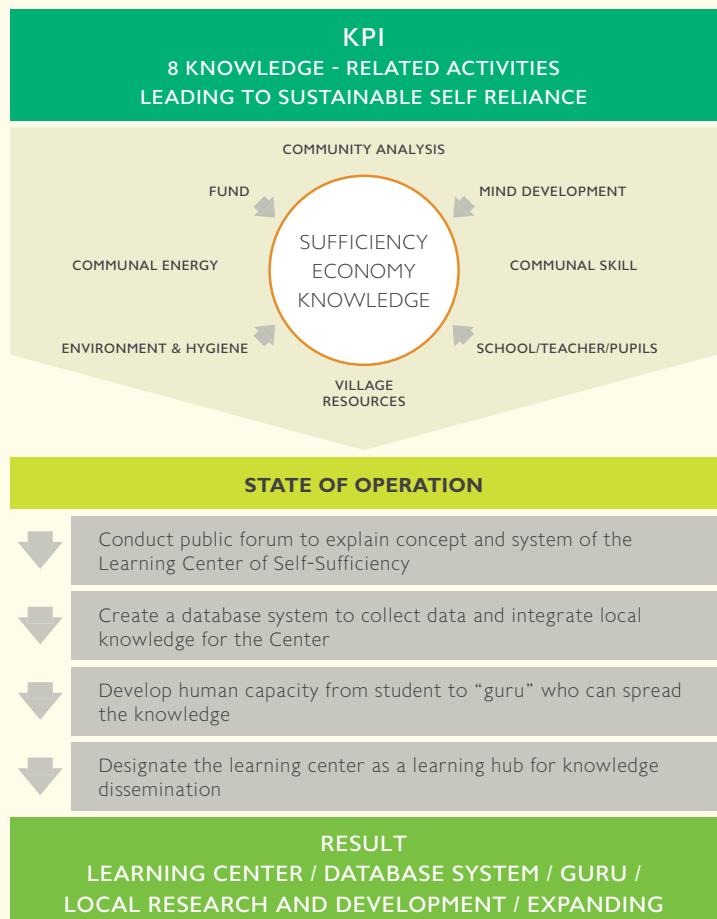
National-level Projects

The 84 Tambon on a Sufficient Path Project

The success of the project which has been running for 5 years (2007 - 2011), now, in 87 sub-districts of 58 provinces all over Thailand has produced a number of truly significant outcomes. For example, the project helped to reduce household expenses and to increase villagers' incomes, the project offered opportunity for individual development and created the self-sufficiency household volunteers. PTT continues to promote and assess the strength of communities under the project. In 2012, PTT leveraged knowledge gained a year earlier into 24 Learning Center of Self-Sufficiency in every region nationwide. The Centers teach and promote self-sufficiency knowledge to nearby sub-districts, networks, and the interested public for sustainable dissemination of knowledge.

The mechanism which drives this project is the very concept of self-sufficiency initiated by HM the King. The project focuses on the engagement between PTT and the community that is enlarged to a network. At the education institution level, engagement occurs through knowledge-sharing forums and research carried out by local people in social studies and energy topics that aim to transform community-based innovation into long-term community sustainability. In addition, PTT has formulated a development plan which will become a framework for the village's sustainable self-reliance during the next phase.

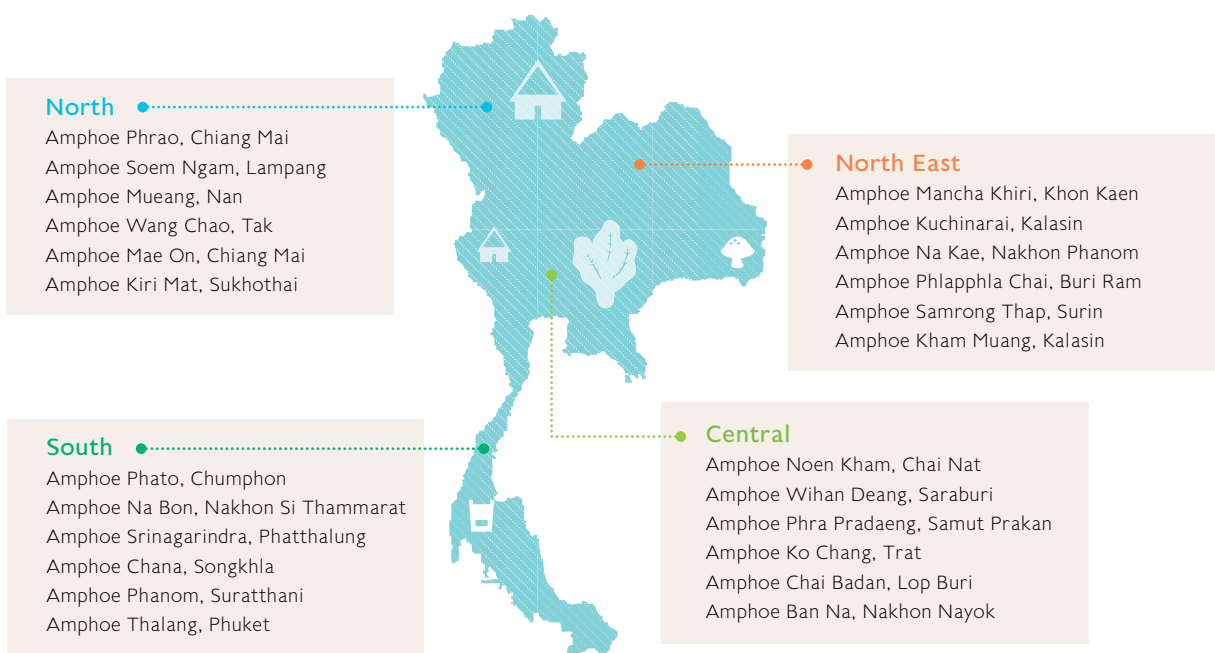
Stages of operation



Results of the Learning Center of Self-Sufficiency

- Learning - PTT has developed 233 learning hubs which offer a variety of knowledge and information depending on a context of each location. For example, one can learn how to make charcoal with a 200-litre oil tank, produce organic fertilizer, manage household income and expenditure account, run a hybrid farm, and create household tools.
- Capacity-building - PTT supported 363 role models who have expertise in self-sufficiency and are accepted by people from their communities to become a mentor who will transfer their knowledge to others.
- Expanding knowledge - enlisted 2,400 new self-sufficiency household volunteers and 1,500 young adults to promote the concept of self-sufficiency.
- Improving information and the learning society - PTT is joining hands with communities to conduct a self-analysis where information derived from the analysis is implemented and used in problem solving. Insights from the analysis has resulted in 84 researches conducted by the local communities. PTT also sponsors 12 scholarships for graduate and post-graduate students all over the country to write their theses under the topic of self-sufficiency philosophy.

Learning Center of Self-Sufficiency of 84 Tambon on a Sufficient Path Project in 4 regions throughout the country



Under the strong community program of the 84 Tambon on a Sufficient Path Project, PTT promotes the community-based energy development project to constructively build a model of an energy self-reliant community where community energy and technology is studied and developed in various forms that are suitable for natural resources and environment found in the area.

In 2012, PTT worked with member networks and was successful in designing, testing and installing technology prototype which were used in 6 locations. These include a community-based hydro power generator installed in Tambon Maesao, Mae-Ai District, Chiang Mai Province, electric water-pumping turbine installed in Tambon Bangkhunsai, Ban Laem District, Phetchaburi Province, as well as in Tambon Thai Samakki, Wang Nam Khiao District, Nakhon Ratchasima Province. PTT supports energy technology learning hubs in 16 sub-districts. In 2012, an energy-based community enterprise in Tambon Khuhatai, Rattaphum District, Songkhla Province, successfully produced high-energy super-stove for the first time.

Green Globe Institute

PTT's 1 million rai reforestation from Reforestation Project in Honour of HM the King on the occasion of the 50th Anniversary of the Accession to the Throne in 1999 has resulted in several related projects, one of those is the Green Globe Award project. With cooperation from experts in various fields, such as non-government organizations, conservationists, academics, writers and members of the press, the project helps to search, select,



Mr. Naowarat Pongpaiboon
National Artist, Literature, 1993

Participant in the Learning Center of Self-Sufficiency

"Learning at the self-sufficiency learning center helps to raise people awareness of sufficiency. I have seen what is there and I do understand how living self-sufficiently can become so joyful. I see the hope and I see how the Thai society can survive. If we follow this self-sufficiency path, we will be able to stand on our feet solidly and sustainably. We will have something that we can leverage with the entire world, simply because we are a producer's society, we are a maker's society, and we are a doer's society while the rest of the world has all become an inseparable part of the consuming society."



Mr. Anand Panyarachun
Chairman of the Green Globe Award

"The Green Globe Award starts with a strong wish to provide moral support to communities and people who quietly protect the forests and other natural assets for us without fanfare. These individuals are the real practitioners whose actions are hardly noticed and appreciated in today's fast-paced society. As today's environmental issue is no longer an issue of the government alone, everyone has to be involved in solving environmental problems for a better society in the future."

and give awards to natural resource and environmental protection projects from all over the country in order to provide moral support, publicize and honor work which resulted from impressive dedication and commitment. In addition, these projects also ignite society-wide learning that helps strengthening public engagement process in natural resource and environmental conservation and restoration.

In 2010, PTT further expanded the Green Globe Award project into the Green Globe Institute, operated by the Sustainable Energy Foundation. The institute is also responsible for R&D and knowledge management with an aim to publicize and expand the sustainable environmental development network.

The Green Globe Institute has organized the Green Globe Award event every year with competitions in 7 categories such as community, individual, youth, writing, youth's essay, and the press. Also, the five-year Sippanon Kedhudhat Sustainability Award founded in 2005 to honor communities who had received the Green Globe Award for at least 5 years. At present, the institute actively pursues natural resource and environmental conservation activities that lead to the development of an integrated network of knowledge-based innovation in ecological, management, and social and community dimensions, which can become a community model for the Thai society.

Green Globe Institute encourages regular knowledge sharing by providing the Green Globe Network Forum held in Bangkok and the provinces, to open up a creative space for its awardees and related parties to share experiences and to discuss issues faced by the region for engagement-based solutions. The institute also organizes the Green World Friend activity to promote knowledge sharing and exchange for the learning purpose among wider audience.



Results of the Green Globe Award Project

The 14th Green Globe Award competition in 2012 under the theme of “Self-sufficiency: Sharing and connecting with soil, water and forest” contemplated on a total of 671 pieces of work submitted by the public and the invited ones by the committee. Of the 7 categories, 61 pieces were eventually awarded, of which 10 were given to communities, 5 to individuals, and 7 to youth groups. There were also 6 outstanding writing awards and 16 outstanding youth essays, including 8 complimentary awards in the same category. One excellent award went to the press, who were also given 2 other outstanding awards. Finally, 6 projects were given the Sippanon Kedhudhat Five Years of Sustainability Award.

The success of the project in the past has been a big moral support in the individual level and underlines the individual’s role as a conservationist model. At the community and society levels, the award leads to the sharing of knowledge and experience while building a network of environmental conservation and integrated ecological management efforts. Finally, at the national level, the project helps extend PTT’s original intention when it planted 1 million rai of trees to honor HR the King, that “planting a forest yields more than just a tree.”

To date, the Green Globe Institute has bestowed 493 Green Globe Awards to outstanding natural resource and environmental conservation projects from 106 communities, 92 individuals, and 72 youth groups. This Green World network has scattered in every region around the country and is a major force to take care of 1,637,925 rai of green forests as well as 49,837 rai of mangrove forests, which are the natural resources and ecological learning schools for communities. This network resulted in a powerful force that helps drive natural resource and environmental conservation efforts on the basis of sustainable development. Among our achievements are:

Pongsa Chunam, Phato District, Chumphon Province, the 1st Green World Award recipient under the individual category, 1999

A new generation of civil servant, the person behind the concept of people living harmoniously with the forest, Pongsa focuses his conservation and forest protection efforts through the development of people and community. He emphasizes the resolving of forest encroachment problem and conflict between government officials and local residents in the Langsuan Watershed in a non-violence manner. Pongsa proposed an integrated solution covering economic, social, education, and natural resource management aspects. He also offered an opportunity for community to participate in the management, supervision, and exploitation of the forest where common rules relating land management, the issuance of community land title deeds, as well as farming, social, and legal management are established and respected on a fundamental belief that man can peacefully co-exist with the forest.

The Salak Kok Conservation Group and Tour Club, Trat Province, the 12th Green World Award recipient under the community category, 2010

Situated on the 670 rai of land amidst the lush mangrove forest on Koh Chang Island, the Salak Kok community wanted to set up a conservation group and a club to offer guided tour that will provide ecological tourism to their visitors, based mainly on the community’s signature tranquility. The business is managed through a participatory process where residents in the community co-own this touring business, which in turn is managed by the community-based on cooperatives and equity models. Funds are mobilized to manage this ecological business as well as to conduct conservation and public-oriented activities. The result is that the community is not only able to preserve the abundance of natural resources in their backyard, but can also prevent their mangrove forests from being encroached and destroyed. Moreover, local fishermen can continue fishing in a traditional way and the tranquil living in the community is preserved.

PTT founded the Sustainable Energy Foundation in 2009 in order to promote energy technology and R&D, energy management, alternative energy, energy conservation, natural resource, and environmental management, as well as to provide education opportunities to children while raising their awareness in social responsibility and integrity. In 2012, the Sustainable Energy Foundation was announced as charity organization No. 806.

Aside from the Green Globe Institute, the Sustainable Energy Foundation also carries out 3 important tasks as follows:

- Community Enterprise Institute Foundation (CEIF) which founded the Learning Institute for Everyone as an alternative tertiary education institute for communities. The institute offers an integrated learning process, research and community development, and is driving the concept of learning society and community self-reliance. It offers both undergraduate and graduate programs to more than 4,000 students today who are studying in 39 learning centers in 35 provinces.
- Community energy project that aims to promote efficient use of energy, and resources and increase energy self-reliance both at the national and local levels. Together with Kasetsart University, the project has created a computation model to calculate mass balance and energy balance, as well as economic and finance models to analyse the project's break-even point for community development activities in 3 projects; namely, the Kamsad Resort and Spa Hotel, the Chumporn Cabana Hotel, and the community learning center in the Nongyai Development Project under HM the King's Initiative in Chumphon Province. In addition, it has collaborated with Prince Songkhla University to conduct an alternative energy project in a form of a community-based hydro power generator for the Koh Lon community in Phuket Province to enjoy its energy security.
- Project to build teacher capacity, a training program to enhance teachers' Thai language teaching skills, was held for 55 teachers working at the Border Patrol Police (BPP) schools who have since then successfully applied the techniques in schools on high mountains of Chiangrai, Phayao and Nan provinces.

Future projects

PTT believes that science, technology, and engineering skills are very important to the development of Thailand's competitiveness and people's capacity. As a result, it has initiated a project which establishes the PTT Group university and a science-oriented school in the eastern of Thailand. To that end, the Rayong Institute of Science and Technology (RAIST) has been established as a tertiary education institution that sees itself as a frontier research university, while the Rayong Science Academy (RASA) offers smaller classrooms as a senior high school that focuses on mathematics and science to build future's scientists. Educational experts have been invited to join the management committee to supervise the institutions and formulate their policies and strategies.

In 2012, PTT made the decision to once again plant another one million rai of forests while diligently maintaining its original one million rai of trees planted before to safeguard the abundance of soil, water, and forest, in order to reduce natural disaster impacts. The PTT Forestry Institute Project has been set up to maintain reforestation and conservation of forestry resources.

Performance Summary

Economics

GRI	Required Data	Unit	2008 PTT	2009 PTT	2010 PTT	2011 PTT	2012 PTT
EC1	Sale Revenues	Million Baht	2,000,816	1,586,174	1,898,682	2,428,126 ^[1]	2,793,833
	Operating Costs	Million Baht	1,829,821	1,438,464	1,724,780	2,208,363 ^[1]	2,561,317
	Employee ^[2] Wages and Benefits ^[3]	Million Baht	5,684	5,865	6,337	6,880	7,615
	Dividend Payments for the Performance of the Year	Million Baht	22,592	24,074	29,167	37,111 ^[1]	37,126
	Payments to Government	Million Baht	9,923	11,329	12,669	4,328 ^[4]	3,516 ^[4]
EC4	Tax Privileges from the Board of Investment, Thailand	Million Baht	3,294	0	2,086	10,691	7,386

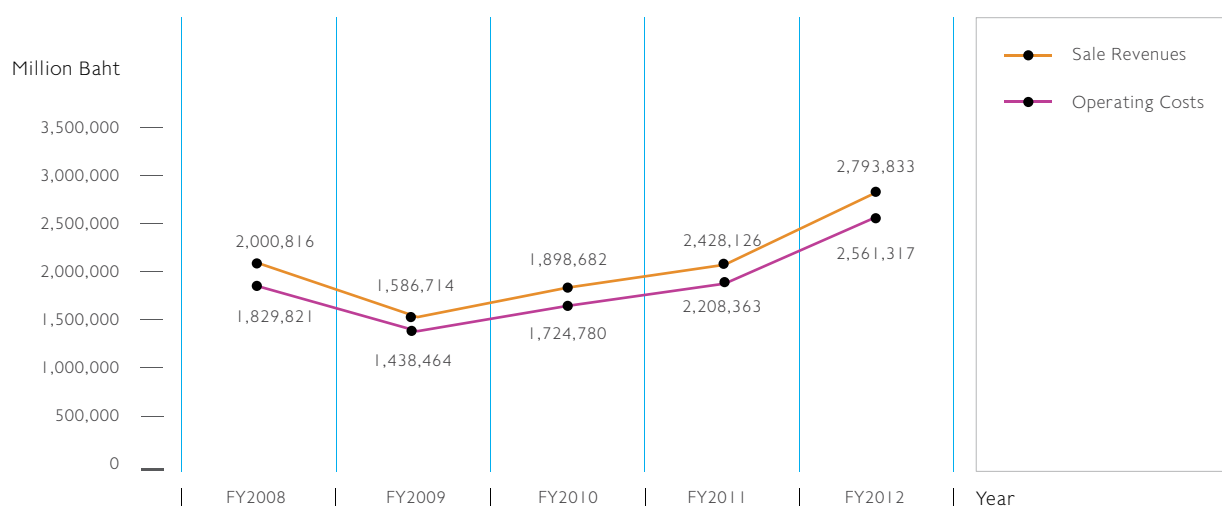
Remarks:

[1] Revised

[2] Scope of employees managed under PTT includes PTT's employees, PTT's secondment, and employees in subsidiaries under PTT financial management. The scope does not include chief executive officers and top executives.

[3] Employee wage and benefit including total salary, bonuses, contributions to the provident funds, etc. (if applicable).

[4] Tax base changed from 30 percent to 23 percent.



People

GRI	Required Data	Unit	2008		2009		2010		2011		2012		
			Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Employee^[1]													
LA1	TOTAL EMPLOYEES	Manpower	3,635		3,681		5,292		5,732		6,083		
	PTT		2,508	1,127	2,555	1,126	2,607	1,183	2,745	1,299	2,851	1,376	
	PTTEP		NA	NA	NA	NA	972	530	1,099	589	1,191	665	
	Permanent Employees ^[2]	Manpower	3,635		3,681		5,292		5,732		6,083		
	PTT		2,508	1,127	2,555	1,126	2,607	1,183	2,745	1,299	2,851	1,376	
	PTTEP		NA	NA	NA	NA	972	530	1,099	589	1,191	665	
LA13	Total Employees by Area												
	Bangkok	Total	Manpower	2,425		2,446		4,011		4,370		4,618	
		PTT		1,415	1,010	1,438	1,008	1,451	1,058	1,524	1,158	1,550	1,212
		PTTEP		NA	NA	NA	NA	972	530	1,099	589	1,191	665
	Others ^[3]	Total	Manpower	1,210		1,235		1,281		1,362		1,465	
		PTT		1,093	117	1,117	118	1,156	125	1,221	141	1,301	164
		PTTEP		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	Total Employees by Level												
	Executive	Total	Manpower	165		167		214		240		243	
		PTT (Level 13 - 18)		126	39	130	37	130	40	143	45	136	46
		PTTEP (Level 17 up)		NA	NA	NA	NA	38	6	44	8	52	9
	Middle Management	Total	Manpower	420		433		705		761		820	
		PTT (Level 10 - 12)		291	129	295	138	307	164	313	190	319	213
		PTTEP (Level 14 - 16)		NA	NA	NA	NA	180	54	191	67	209	79
	Senior	Total	Manpower	1,157		1,168		1,681		1,803		1,904	
		PTT (Level 8 - 9)		664	493	681	487	693	478	720	475	738	464
		PTTEP (Level 12 - 13)		NA	NA	NA	NA	329	181	384	224	440	262
	Employee	Total	Manpower	1,893		1,913		2,692		2,928		3,116	
PTT (Level 7 and below)			1,427	466	1,449	464	1,477	501	1,569	589	1,658	653	
PTTEP (Level 11 and below)			NA	NA	NA	NA	425	289	480	290	490	31	
Employees by Age													
Over 50 Years Old	Total	Manpower	976		1,013		1,252		1,365		1,250		
	PTT		678	298	708	305	715	329	791	376	717	343	
	PTTEP		NA	NA	NA	NA	156	52	148	50	141	49	
30 - 50 Years Old	Total	Manpower	1,908		1,921		2,983		3,252		3,358		
	PTT		1,246	662	1,270	651	1,311	648	1,428	712	1,440	729	
	PTTEP		NA	NA	NA	NA	649	375	710	402	753	436	
Below 30 Years Old	Total	Manpower	751		747		1,057		1,115		1,475		
	PTT		584	167	577	170	581	206	526	211	694	304	
	PTTEP		NA	NA	NA	NA	167	103	241	137	297	180	
LA2	TURNOVER												
	Total	Total	Manpower	76		115		158		162		204	
	Turnover	PTT		56	20	63	52	95	34	90	40	109	63
		PTTEP		NA	NA	NA	NA	19	10	16	16	26	6
	Turnover Rate	PTT	%	2.23	1.77	2.47	4.62	3.64	2.87	3.28	3.08	3.82	4.58
		PTTEP		NA	NA	NA	NA	1.95	1.89	1.46	2.72	2.18	0.90
	Turnover by Area												
	Bangkok	Total	Manpower	62		95		138		137		166	
		PTT		44	18	45	50	78	31	68	37	76	58
		PTTEP		NA	NA	NA	NA	19	10	16	16	26	6
PTT		%	1.75	1.60	1.76	4.44	2.99	2.62	2.48	2.85	2.67	4.22	
PTTEP			NA	NA	NA	NA	1.95	1.89	1.46	2.72	2.18	0.90	

GRI	Required Data	Unit	2008		2009		2010		2011		2012	
			Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Others ^[3]	Total	Manpower	14		20		20		25		38	
	PTT		12	2	18	2	17	3	22	3	33	5
	PTTEP		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	PTT	%	0.48	0.18	0.70	0.18	0.65	0.25	0.80	0.23	1.16	0.36
	PTTEP		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Turnover by Age												
Over 50 Years Old	Total	Manpower	54		77		99		103		120	
	PTT		41	13	46	31	67	22	65	25	79	32
	PTTEP		NA	NA	NA	NA	7	3	10	3	8	1
	PTT	%	1.63	1.15	1.80	2.75	2.57	1.86	2.37	1.92	2.77	2.33
	PTTEP		NA	NA	NA	NA	0.72	0.57	0.91	0.51	0.67	0.15
30 - 50 Years Old	Total	Manpower	9		27		33		36		40	
	PTT		5	4	13	14	10	7	12	11	11	14
	PTTEP		NA	NA	NA	NA	11	5	4	9	11	4
	PTT	%	0.20	0.35	0.51	1.24	0.38	0.59	0.44	0.85	0.39	1.02
	PTTEP		NA	NA	NA	NA	1.13	0.94	0.36	1.53	0.92	0.60
Below 30 Years Old	Total	Manpower	13		11		27		23		44	
	PTT		10	3	4	7	19	5	13	4	19	17
	PTTEP		NA	NA	NA	NA	1	2	2	4	7	1
	PTT	%	0.40	0.27	0.16	0.62	0.73	0.42	0.47	0.31	0.67	1.24
	PTTEP		NA	NA	NA	NA	0.10	0.38	0.18	0.68	0.59	0.15
NEW EMPLOYEES												
New Employees	Total	Manpower	168		161		372		601		553	
	PTT		122	46	110	51	149	92	230	157	217	140
	PTTEP		NA	NA	NA	NA	79	52	142	72	114	82
New Hire Rate	PTT	%	4.86	4.08	4.31	4.53	5.72	7.78	8.38	12.09	7.61	10.17
	PTTEP		NA	NA	NA	NA	8.13	9.81	12.92	12.22	9.57	12.33
New Employees by Area												
Bangkok	Total	Manpower	134		116		296		482		418	
	PTT		95	39	67	49	85	80	131	137	106	116
	PTTEP		NA	NA	NA	NA	79	52	142	72	114	82
	PTT	%	3.79	3.46	2.62	4.35	3.26	6.76	4.77	10.55	3.72	8.43
	PTTEP		NA	NA	NA	NA	8.13	9.81	12.92	12.22	9.57	12.33
Others ^[3]	Total	Manpower	34		45		76		119		135	
	PTT		27	7	43	2	64	12	99	20	111	24
	PTTEP		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	PTT	%	1.08	0.62	1.68	0.18	2.45	1.01	3.61	1.54	3.89	1.74
	PTTEP		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
New Employee by Age												
Over 50 Years Old	Total	Manpower	1		3		2		7		1	
	PTT		1	0	3	0	2	0	2	2	0	0
	PTTEP		NA	NA	NA	NA	0	0	2	1	1	0
	PTT	%	0.04	0	0.12	0	0.08	0	0.07	0.15	0	0
	PTTEP		NA	NA	NA	NA	0	0	0.18	0.17	0.08	0
30 - 50 Years Old	Total	Manpower	12		5		64		138		121	
	PTT		8	4	4	1	10	8	15	23	15	16
	PTTEP		NA	NA	NA	NA	22	24	66	34	52	38
	PTT	%	0.32	0.35	0.16	0.09	0.38	0.68	0.55	1.77	0.53	1.16
	PTTEP		NA	NA	NA	NA	2.26	4.53	6.01	5.77	4.37	5.71
Below 30 Years Old	Total	Manpower	155		153		306		456		431	
	PTT		113	42	103	50	137	84	213	132	202	124
	PTTEP		NA	NA	NA	NA	57	28	74	37	61	44

GRI	Required Data	Unit	2008		2009		2010		2011		2012	
			Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	PTT	%	4.51	3.73	4.03	4.44	5.26	7.10	7.76	10.16	7.09	9.01
	PTTEP		NA	NA	NA	NA	5.86	5.28	6.73	6.28	5.12	6.62

Parental Leave

LA15	Number of Employee Entitled for Parental Leave	Total	Manpower	1,127		1,126		1,183		1,299		1,376	
		PTT		0	1,127	0	1,126	0	1,183	0	1,299	0	1,376
		PTTEP		NA	NA	NA	NA	0	530	0	589	0	665
	Number of Employee Taken Parental Leave	Total	Manpower	27		25		41		63		50	
		PTT		0	27	0	25	0	13	0	21	0	21
		PTTEP		NA	NA	NA	NA	18	10	23	19	15	14
	Number of Employee Returned to Work after Parental Leave	Total	Manpower	27		25		41		63		48	
		PTT		0	27	0	25	0	13	0	21	0	19
		PTTEP		NA	NA	NA	NA	18	10	23	19	15	14
	Return to Work Rate	PTT	%	0	100	0	100	0	100	0	100	0	90.48
		PTTEP		NA	NA	NA	NA	100	100	100	100	100	100
	Number of Employee Returned to Work after Parental Leave who is still Employed for the Next 12 Months	Total	Manpower	25		24		11		21		19	
		PTT		0	25	0	24	0	11	0	21	0	19
		PTTEP		NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Retention Rate	PTT	%	0	92.59	0	96	0	84.62	0	100	0	90.48
		PTTEP		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Employee Training

LA10	Average Hours of Training per Year per Employee	PTT	Hour per Person	22.07	19.87	38.26	32.72	33.27	21.68	46.73	38.5	55.16	67.92
		PTTEP		NA	NA	NA	NA	43.95	80.71	38.28	62.3	58.28	55.09

Remarks:

- [1] Restatement - PTT is in the process of upgrading human resource database including revision of definitions and scope for employee data.
- [2] PTT and PTTEP do not have contract employees.
- [3] PTTEP defines "others" as operation overseas. However, this report encompasses only the businesses located in Thailand. Therefore, PTTEP's oversea employees are not within the scope of this report.

NA - Not Available

NR - Not Relevant

GRI Required Data		Unit	2010		2011		2012	
			PTT	PTTEP	PTT	PTTEP	PTT	PTTEP
LA7	Lost Workday Case (LWC) - Employees	Person	2	2	2	3	12	3
	Lost Workday Case (LWC) - Contractors	Person	6	5	3	3	13	2
	Total Recordable Injuries Case - Employees	Person	2	10	6	12	7	8
	Total Recordable Injuries Case - Contractors	Person	9	24	5	25	19	25
	Total Recordable Injuries Rate (TRIR) - Employees	Person/200,000 hours worked	0.06	0.56	0.16	0.75	0.17	0.26
	Total Recordable Injuries Rate (TRIR) - Contractors	Person/200,000 hours worked	0.51	0.36	0.12	0.28	0.19	0.28
	Lost Day Rate (LDR) - Employees	Lost days/200,000 hours worked	-	-	-	-	4.52	2.08
	Lost Day Rate (LDR) - Contractor	Lost days/200,000 hours worked	-	-	-	-	2.90	1.45
	Absentee Rate (AR) - Employees		-	-	-	-	2,529.58	1,585.98
	Absentee Rate (AR) - Contractors		-	-	-	-	-	-
	Lost Time Injury Frequency Rates (LTIFR) - Employees	Person/200,000 hours worked	0.06	0.11	0.05	0.19	0.15	0.06
	Lost Time Injury Frequency Rates (LTIFR) - Contractors	Person/200,000 hours worked	0.34	0.09	0.07	0.03	0.13	0.02
	Occupational Illness Frequency Rate (OIFR) - Employees	Person/200,000 hours worked	0	0	0	0.06	0.40	0.07
	Occupational Illness Frequency Rate (OIFR) - Contractors		0	0.02	0	0.03	0	0
	Fatalities - Employees	Person	1	0	0	0	0	0
	Fatalities - Contractors	Person	2	1	0	0	0	0
	Near Misses - Employees & Contractors	Case	601	211	590	97	418	85

Remarks:

- In 2012, recording and reporting requirements for contractors' hours were expanded to increase the coverage.
- Working hours of contractors at service stations include only stations in which PTT own and operate (COCO). The information also excludes contractors who are not involved in the main business, such as convenient stores in the stations.
- Occupational safety and health reports such as TRIR, TROIR, LDR, and absentee rate, are not broken down to Thailand's sub-regions level, since PTT's reporting boundary only covers domestic operation. OHS data are also not broken down by gender as PTT equally values the safety of all its employees in accordance with code of ethics, as a result, the reporting are not broken down into categories mentioned earlier.
- TRIR, LTIFR, and OIFR data from 2010-2011 were modified based on GRI 3.1, Oil and Gas Sector Supplement. Normalization factor unit was changed to unit per 200,000 hours from the originally reported unit per 1,000,000 hours.
- TRIC, TRIR, OIFR, and LTIF data does not include accidents categorized at the first-aid level
- LWC data are tracked based on calendar day. Record begins the next day
- Restatement of PTTEP data in 2010 with regards to LWC, TRIC, TRIR, LTIFR, OIFR, and Near Misses.

Environment

Reporting Scope	Year	PTT											PTTEP							
		Head Office	PTT Building			Gas Separation Plant (GSP)	Gas Transmission (GTM)	Terminal			Retail	Lubrication	Transportation	NGV Service Stations	Arthit	Arthit North	Bongkot North	Bongkot South	PTTEP I	SI
			Prakanong Office	Research & Technology Institute	Rayong Distribution Services Office			Gas Terminal	Oil Terminal	Aviation										
Direct GHG	2012	•	•	•	NA	•	•	•	•	•	NA	•	NR	•	•	NR	•	•	•	•
	2011	•	•	•	NA	•	•	•	•	•	NA	•	NR	•	•	NR	•	•	•	•
	2010	•	•	•	NA	•	•	•	•	•	NA	•	NR	•	•	NR	•	•	•	•
Indirect GHG	2012	•	•	•	NA	•	•	•	•	•	•	•	NR	•	NR	NR	NR	NR	•	•
	2011	•	•	•	NA	•	•	•	•	•	•	•	NR	•	NR	NR	NR	NR	•	•
	2010	•	•	•	NA	•	•	•	•	•	•	•	NR	•	NR	NR	NR	NR	•	•
Direct Energy Consumption	2012	•	•	•	NA	•	•	•	•	•	NA	•	NR	•	•	NA	•	•	•	•
	2011	•	•	•	NA	•	•	•	•	•	NA	•	NR	•	•	•	•	•	•	•
	2010	•	•	•	NA	•	•	•	•	•	NA	•	NR	•	•	•	•	•	•	•
Electricity Purchased	2012	•	•	•	NA	•	•	•	•	•	•	•	NR	•	NR	NR	NR	NR	•	•
	2011	•	•	•	NA	•	•	•	•	•	•	•	NR	•	NR	NR	NR	NR	•	•
	2010	•	•	•	NA	•	•	•	•	•	•	•	NR	•	NR	NR	NR	NR	•	•
Water Withdrawal	2012	•	•	•	•	•	•	•	•	•	NA	•	NR	NA	•	NR	•	•	•	•
	2011	•	•	•	•	•	•	•	•	•	NA	•	NR	NA	•	NR	•	•	•	•
	2010	•	•	•	NA	•	•	•	•	•	NA	•	NR	NA	•	NR	•	•	•	•
Effluent	2012	NR	NR	NR	NR	•	NR	•	•	•	NA	•	NR	NA	NR	NR	NR	NR	NR	NR
	2011	NR	NR	NR	NR	•	NR	•	•	•	NA	•	NR	NA	NR	NR	NR	NR	NR	NR
	2010	NR	NR	NR	NR	•	NR	•	•	•	NA	•	NR	NA	NR	NR	NR	NR	NR	NR
Produced Water	2012	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	•	NR	•	•	•	•
	2011	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	•	•	•	•	•	•
	2010	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	•	NA	•	•	•	•
Waste	2012	•	•	•	•	•	•	•	•	•	NA	•	NR	NA	•	NR	•	•	•	•
	2011	•	•	•	•	•	•	•	•	•	NA	•	NR	NA	•	•	•	•	•	•
	2010	•	•	NA	NA	•	•	•	•	•	NA	•	NR	NA	•	NA	•	•	•	•
Oil Spills	2012	•	•	•	•	•	•	•	•	•	•	•	•	•	•	NR	•	•	•	•
	2011	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	2010	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	NR	•	•
Nitrogen Oxide (NOx)	2012	NR	NR	NR	NR	•	•	NR	NR	NR	NR	NR	NR	NR	•	NR	•	•	•	•
	2011	NR	NR	NR	NR	•	•	NR	NR	NR	NR	NR	NR	NR	•	•	•	•	•	•
	2010	NR	NR	NR	NR	•	NA	NR	NR	NR	NR	NR	NR	NR	NA	NA	NA	NR	NA	•
Sulphur Dioxide (SO ₂)	2012	NR	NR	NR	NR	•	•	NR	NR	NR	NR	NR	NR	NR	•	NR	•	•	•	•
	2011	NR	NR	NR	NR	•	NA	NR	NR	NR	NR	NR	NR	NR	•	•	•	•	•	•
	2010	NR	NR	NR	NR	•	NA	NR	NR	NR	NR	NR	NR	NR	NA	NA	NA	NR	NA	•
Volatile Organic Compounds (VOCs)	2012	NR	NR	NR	NR	NA	NR	•	•	NA	NA	NA	NR	NR	•	NR	•	•	•	•
	2011	NR	NR	NR	NR	NA	NR	•	•	NA	NA	NA	NR	NR	•	•	•	•	•	•
	2010	NR	NR	NR	NR	NA	NR	•	•	NA	NA	NA	NR	NR	NA	NA	NA	NR	NA	•
Volume of Methane (CH ₄) Emitted	2012	•	•	•	•	•	•	•	•	•	•	•	•	•	•	NR	•	•	•	•
	2011	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	NR	•
	2010	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	NR	•
Direct CH ₄ Emission	2012	•	•	•	•	•	•	•	•	•	•	•	•	•	•	NR	•	•	•	•
	2011	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	2010	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	NR	•

Remarks:

NA - Not Available (The data management system is being processed.)

NR - Not Relevant

Absentee Rate (AR) and Lost Day Rate (LDR) from 2012 (based on GRI 3.1) GRI 3.1, Oil and Gas Sector Supplement

Water

GRI	Required Data	Unit	2010	2011	2012
			PTT and PTTEP	PTT and PTTEP	PTT and PTTEP
EN8	Total Water Withdrawal	Million m ³	67.575	66.169	72.365
	• Surface Water	Million m ³	0.004	0.018	0.009
	• Seawater	Million m ³	0.812	0.808	1.512
	• Once Through Cooling Water	Million m ³	64.664	63.137	68.215
	• Water Supply	Million m ³	1.798	1.901	2.376
	• Groundwater	Million m ³	0.297	0.305	0.252
	Total salt/brackish water (Seawater + Once through cooling)	Million m ³	65.476	63.945	69.727
	Water from all other sources (Surface Water + Groundwater)	Million m ³	0.301	0.323	0.261
EN10	Recycle and Reuse Water	Percentage of water withdrawal	0.067	0.059	0.039
		Million m ³	0.045	0.039	0.029
EN8	Water intensity	Million m ³ /mboe	0.217	0.191	0.160

Remarks:

- Total water withdrawal quantity in 2012 increased due to:
 - » Increase sea water level due to the expansion of recording and reporting boundary to include the South Bongkot project which started commissioning its production and transmission of gas and condensate in March 2012; as well as the offshore gas transmission pipeline.
 - » Once Through Cooling Water increased due to the maintenance of Sea water filter system at the Arthit project in early 2012 which increased the amount of sea water passing through the Once Through Cooling system.
 - » Increase water supply due to the expansion of recording and reporting boundary to include oil terminal, gas terminal, aviation depot and lubricant operations.
 - » 2010 and 2011 data on recycle & reuse water as percentage of water withdrawal were adjusted to be more accurate.

Effluent

GRI	Required Data	Unit	2010	2011	2012
			PTT and PTTEP	PTT and PTTEP	PTT and PTTEP
EN21	Total Water Discharge	Million m ³	0.216	0.427	0.832
OG5	Produced Water	Million m ³	4.444	6.254	5.560
	Total volume and percentage of produced water				
	• Treatment & discharge overboard	Million m ³ %	0 0	0 0	0 0
	• Re-injected	Million m ³ %	4.444 100.000	6.254 100.000	5.560 100.000
	• Others	Million m ³ %	0 0	0 0	0 0
	Total volume of hydrocarbon discharged within produced water.	Million m ³	no discharged produced water (Re-inject 100%)		
	Chemical Oxygen Demand (COD)	Ton	7.775	16.275	12.610
Biochemical Oxygen Demand (BOD)	Ton	1.022	1.989	1.318	

Remarks:

- Total water discharge in 2012 increased due to:
 - » Expansion of recording and reporting boundary to include oil terminal, gas terminal, aviation depot and lubricant operations.
 - » Increased waste water treatment capacity at the Rayong Gas Separation Plant to support schedule maintenance activity.
- Produced water quantity in 2012 decreased because the Arthit North project shutdown its production in November 2011.
- Level of COD and BOD loading in 2012 decrease because the waste water system at the Rayong Gas Separation Plant operated at full capacity. COD and BOD level in water discharged from the plant in previous years were below legal limits. COD and BOD loadings per product volume were comparable to that of 2011.

Waste

GRI	Required Data	Unit	2010	2011	2012
			PTT and PTTEP	PTT and PTTEP	PTT and PTTEP
EN22	Waste Disposal	Ton	8,285.68	11,110.97	7,618.37
	Total Hazardous Waste Disposal	Ton	7,782.58	10,380.80	5,860.70
	• Landfill	Ton	806.22	1,000.37	1,563.50
	• Reuse	Ton	55.05	56.17	72.41
	• Recycle	Ton	404.56	3,051.22	58.82
	• Recover	Ton	6,163.02	5,751.54	3,346.95
	• Other	Ton	353.73	521.51	819.03
	Total Non-Hazardous Waste Disposal	Ton	503.10	730.17	1,757.66
	• Landfill	Ton	229.49	516.25	700.25
	• Reuse	Ton	5.18	5.01	2.07
	• Recycle	Ton	107.90	208.45	798.45
	• Recover	Ton	0.00	0.00	0.00
	• Other	Ton	160.53	0.46	256.89
	Waste from non-routine operation (e.g. construction waste, spill clean up waste)	Ton	NA	NA	NA
	OG7	Drilling waste (drill mud and cuttings)	Ton	16,796.00	16,999.00

Remarks:

- In 2012, Hazardous Waste Disposal decreased because the Rayong Gas Separation Plant was able to reduce the volume of Triethylene Glycol (TEG) waste water. The waste water is recirculated into waste water treatment system resulting in a decrease of approximately 120 cubic meter of TEG waste water discharged per week.
- Non-Hazardous Waste Disposal increased due to:
 - » Expansion of recording and reporting boundary to include oil terminal, gas terminal, aviation depot and lubricant operations.
 - » Changes of resin in neutralize plant at the Rayong Gas Separation Plant to support schedule maintenance activity.
- Waste from non-routine operation (e.g. construction waste, spill clean-up waste) data is not available because the reporting and recording system for the data is being modified.
- Drilling waste data (drill mud and cutting) was from the S1 project. System to collect drilling waste quantity from other projects are under-going maintenance and upgrade.
- Drilling waste quantity increased in 2012 due to increase activities at the S1 project.
- Quantities of recovery Hazardous Waste Disposal in 2011 and 2012 shifted because data from the S1 project were reported separately from the total Recover Hazardous Waste Disposal data. This change was made to be in compliance with GRI OG7 indicator.
- Quantities of Hazardous Waste Disposal in 2011 shifted due to the information improvement.
- Threshold of Hazardous Waste is not indicated as all operation sites must report the total quantity of hazardous waste disposed of.

Spill

GRI	Required Data	Unit	2010 PTT and PTTEP	2011 PTT and PTTEP	2012 PTT and PTTEP
EN23	Spill				
	From PTT Operational Boundary				
	• Number of Hydrocarbon Spills	Number of Spills	17	12	12
	• Volume of Hydrocarbon Spills	m ³	21.71	0.43	1.71
	• Number of Non-Hydrocarbon Spills	Number of Spills	1	0	0
	• Volume of Non-Hydrocarbon Spills	m ³	1.00E-06	0.00	0.00
	From 3 rd party (Transportation)				
	• Number of Hydrocarbon Spills	Number of Spills	0	2	8
	• Volume of Hydrocarbon Spills	m ³	0.00	11.71	63.90
	• Number of Non-Hydrocarbon Spills	Number of Spills	0	0	0
	• Volume of Non-Hydrocarbon Spills	m ³	0.00	0.00	0.00
	Significant Spill (Volume ≥ 100 barrel)				
	From PTT Operational Boundary				
	• Number of Hydrocarbon Spills	Number of Spills	0	0	0
	• Volume of Hydrocarbon Spills	m ³	0.00	0.00	0.00
	• Number of Non-Hydrocarbon Spills	Number of Spills	0	0	0
	• Volume of Non-Hydrocarbon Spills	m ³	0.00	0.00	0.00
	From 3 rd party (Transportation)				
	• Number of Hydrocarbon Spills	Number of Spills	2	3	1
	• Volume of Hydrocarbon Spills	m ³	76.00	73.00	41.00
	• Number of Non-Hydrocarbon Spills	Number of Spills	0	0	0
	• Volume of Non-Hydrocarbon Spills	m ³	0.00	0.00	0.00

Remarks:

- With regards to oil spill in 2012, PTT and PTTEP managed oil spills by using spill operating procedures to control the spills in the shortest time possible and to minimize the environmental impacts. For example, booms and scoops are used to minimize the oil spill effects.

Emission

GRI	Required Data	Unit	2010 PTT and PTTEP	2011 PTT and PTTEP	2012 PTT and PTTEP
EN20	Volatile Organic Compounds (VOCs)	Ton	NA	12,466.68	15,264.42
	VOCs intensity	Ton/Million Barrel Oil Equivalent		58.15	161.64
	Nitrogen Oxides (NOx)	Ton	2,294.80	9,375.54	10,600.77
	NOx intensity	Ton/Million Barrel Oil Equivalent	6.42	26.38	23.02
	Sulphur Oxides (SOx)	Ton	67.74	589.85	646.22
	SOx intensity	Ton/Million Barrel Oil Equivalent	0.19	1.69	1.40

Remarks:

- Emission increased in 2012 due to:
 - » Expansion of recording and reporting boundary to include Great Bongkot South project which began production testing and transporting natural gas and condensate in March 2012. NOx and SOx emission levels are below legal limits.
- Nitrogen Oxides (NO_x) in 2011 were adjusted to be more accurate.

GHG Emission

GRI	Required Data	Unit	2010	2011	2012
			PTT and PTTEP	PTT and PTTEP	PTT and PTTEP
EN16	Total GHG emissions	Metric tonnes CO ₂ equivalents	9,494,971	12,924,125	15,764,713
	GHG Scope 1	Metric tonnes CO ₂ equivalents	9,303,076	12,631,967	15,378,674
	GHG Scope 2	Metric tonnes CO ₂ equivalents	191,895	292,158	386,039
GRI	Required Data	Unit	2010	2011	2012
			PTT Group	PTT Group	PTT Group
EN 16	GHG Intensity - Oil and gas production	Metric tonnes CO ₂ equivalents/ Million Barrel Oil Equivalent	NA	NA	46,940
	GHG Intensity - Refinery	Metric tonnes CO ₂ equivalents/ Tonnes refinery throughput	NA	NA	0.001406
	GHG Intensity - Petrochemical	Metric tonnes CO ₂ equivalents/ Tonnes petrochemical throughput	NA	NA	0.5847
	GHG Scope 1 PTT Operational Control	Metric tonnes CO ₂ equivalents	22,638,896	25,275,008	29,331,784
	GHG Scope 1 PTT Equity Share	Metric tonnes CO ₂ equivalents	14,920,603	18,368,841	20,989,312
	GHG Scope 2 PTT Operational Control	Metric tonnes CO ₂ equivalents	1,156,640	937,023	1,582,794
	GHG Scope 2 PTT Equity Share	Metric tonnes CO ₂ equivalents	636,559	615,460	990,347

Remarks:

- The Organizational boundary of PTT based on Operational Control approach is complied with PTT Group SSHE Governance Policy.
- The Organizational boundary of PTT based on Equity Share approach includes every domestic companies that PTT directly owns more than 20% shares or indirectly own up to 100% share. The percentage of shareholding was at 31st December for each calendar year.
- PTT Greenhouse Gas Accounting and Reporting Standard determined DeMinimis for the activities that have total GHG emission less than 5% of the company's emission.
- In 2012, PTT has revised and improved GHG accounting system in order to make GHG intensity reportable.
- Increase in 2012's GHG emission was due an addition of new assets/plants from subsidiaries, such as Greater Bongkot South from PTTEP, or PDH plant from HMC Polymer Co., Ltd., as well as emission from PTT-owned-dealer-operated and Joint Venture service stations.
- GHG intensity of Refinery and Petrochemical plants of IRPC is excluded from the reporting as it is currently revising the reallocation method. It is expected to be included in the next year's publication.
- If significant data changes occur after publication, they will be updated in the next year's publication.

Direct Energy Consumption

GRI	Required Data	Unit	2010 PTT and PTTEP	2011 PTT and PTTEP	2012 PTT and PTTEP
EN3	Total Direct Energy Consumption	GJ	49,555,573	62,976,254	62,080,594
		MWh	13,765,437	17,493,404	17,244,609
GRI	Required Data	Unit	2010 PTT Group	2011 PTT Group	2012 PTT Group
EN3	Total Direct Energy Consumption : PTT Operational Control	GJ	NA	NA	290,426,015
	Direct Energy intensity: Oil and Gas Production	GJ/mboe	NA	NA	215,700
	Direct Energy Intensity: Refinery throughput	GJ/tonnes	NA	NA	0.01871
	Direct Energy Intensity: Petrochemical throughput	GJ/tonnes	NA	NA	5.98

Remarks:

- Fuel oil, recycled by-product, and coke are not used by PTT and PTTEP.
- In 2012, PTT successfully integrated energy reporting system with GHG reporting tools. Therefore, energy consumption reported in energy reporting system similar to GHG inventory is reportable.
- Direct energy consumption of 2010 and 2011 utilized different approach comparing to 2012. Therefore, PTT is undergoing the recalculation of past years' data and is expecting to report in the next year's publication.
- Intensity of Refinery and Petrochemical follows GHG intensity reporting.
- Energy intensity of Refinery and Petrochemical plants of IRPC is excluded from the reporting as it is currently revising the reallocation method. It is expected to be included in the next year's publication
- If significant data changes occur after publication, they will be updated in the next year's publication.
- Revising the direct energy consumption in 2010, to be more accurate.

Indirect Energy Consumption

GRI	Required Data	Unit	2010	2011	2012
			PTT and PTTEP	PTT and PTTEP	PTT and PTTEP
EN4	Total Indirect Energy Consumption	GJ	354,038	889,451	2,581,199
		MWh	98,344	247,070	717,000
	Electricity Purchased	GJ	354,038	889,451	2,581,199
		MWh	98,344	247,070	717,000
GRI	Required Data	Unit	2010 PTT Group	2011 PTT Group	2012 PTT Group
EN4	Total Indirect Energy Consumption : PTT Operational Control	GJ	NA	NA	12,749,508

Remarks:

Steam is not used by PTT and PTTEP

- In 2012, PTT successfully integrated energy reporting system with GHG reporting tools, so that from 2012, energy consumption reported in energy reporting system similar to GHG inventory is reportable.
- Significant increase of indirect energy consumption was due to PTT NGV business is included into the boundary. PTT is undergoing the recalculation of past years' data and is expecting to report in the next year's publication.
- If significant data changes occur after publication, they will be updated in the next year's publication.
- PTT is developing a constructed system to gather all information of energy saving activities conducted under effective operational control. The first report is due within the next annual cycle.

Methane (CH₄) Emitted and CH₄ Emission

GRI	Required Data	Unit	2010	2011	2012
			PTT and PTTEP	PTT and PTTEP	PTT and PTTEP
EN20	Volume of Methane Emitted (leakage, venting, and flaring)	Ton of Methane	NA	25,521.87	NA
		Cubic meters (m ³)	NA	NA	34,197,429.73
	Direct CH ₄ Emissions (extracted from GHG)	Ton	NA	25,546.82	23,122.48

Remarks:

- In 2011, PTT began to account accidental release of methane by mathematical means and will continue to improve GHG inventory, monitoring, continuous reporting, as well as prevention measures.
- The volume of methane emitted includes leakage (fugitive), venting from CO₂ separation process, and flaring.
- The direct CH₄ emissions include those from aforementioned sources as well as direct CH₄ emitted from combustion sources.
- In 2012, the reporting unit of Methane has been changed from 'Ton of Methane' to 'Cubic Meter (m³)' to follow GRI 3.1

Awards and Recognition

PTT Public Company Limited has been ranked by 44 institutions and bestowed 89 awards in 2012. Of which are 57 national awards from 32 institutions, and 32 international awards from 12 institutions. Major awards in sustainability are as follow.

National Awards

1. The HM the King National Innovation Award under the category Outstanding Innovation in Economics

given by the National Innovation Agency for PTT Electromagnetic Induction Project on the occasion of the 2012 National Innovation Day.

2. The HRH Princess Maha Chakri Sirindhorn Thailand Corporate Excellence Awards 2011

Two Excellence Awards for

- Leadership Excellence
- Financial Management Excellence

Three Runner-Ups Awards for

- Innovation Excellence
- Human Resource Management Excellence
- Corporate Social Responsibility Excellence

given by Thailand Management Association in collaboration with Sasin Graduate Institute of Business Administration of Chulalongkorn University

3. Two State-Owned Enterprise Awards 2012

- The Annual Excellent State-Owned Enterprise that PTT received for the fourth consecutive year (2009-2012)
- The Innovation Award that PTT received for the third consecutive year (2010-2012)

given by the Ministry of Finance

4. SET Awards 2012

- The Best Corporate Social Responsibility Award for the second consecutive year (2011-2012)

given by the Stock Exchange of Thailand (SET) and the *Money and Banking Magazine*

5. The Hall of Fame 2010/2011 Board of the Year Award

The Hall of Fame Board of the Year Announcement Project 2010/2011 which PTT has received for the second time (2009/2010 and 2010/2011)

the award was collaboration between the Thai Institute of Directors, the Stock Exchange of Thailand (SET), the Board of Trade, the Federation of Thai Industries, the Thai Bankers Association, the Thai Listed Companies Association and Federation of Thai Capital Market Organizations.

6. The Superbrands Thailand Award 2011

at the Tribute Event, Trophy Presentation Ceremony to Superbrands 2011.

given by Superbrands

7. Certificate for Carbon Footprint of Product for PTT lubricant: PTT Performa Super Synthetic API-SN OW-30 (liter-size and four-liter-size)

- The first in Asia, Product Carbon Footprint accreditation

by the Thailand Greenhouse Gas Management Organization (Public Organization)



International Awards

1. Six Asian Excellence Recognition Awards 2012

in the following categories;

- Asia's Best CEO Award;
- Asia's Best CFO Award;
- Best Investor Relations Professional: Thailand Award;
- Best Investor Relations Website/Promotion Award;
- Best Investor Relations Companies: Thailand Award; and
- Best Environmental Responsibility Award

given by the Corporate Governance Asia Magazine for the second consecutive year (2011-2012)

2. Corporate Governance Asia Recognition Awards 2012

- The Asian Corporate Director Recognition Award 2012
- The Corporate Governance Asia Recognition Award 2012

given by the Corporate Governance Asia Magazine

3. The Asset's Platinum Award for All-Round Excellence

Making PTT Public Company Limited the platinum awardee for the third consecutive year (2010-2012).

given by the Asset Magazine

4. Listed on the Dow Jones Sustainability World Index (DJSI World) among the world's top 10 percentile in the Oil and Gas Producers (OIX) Sector based on economic, social and environmental performance assessed

by the Dow Jones Sustainability Indexes

5. Recognized in The Global Green Ranking List 2011

PTT ranked the 16th among 37 companies in the Energy Sector and the 384th among 500 companies worldwide and being the one and only Thai company in this list.

by the Newsweek Magazine.

6. Seven Thailand's Best Company Awards

- Best CEO Award
- Best CFO Award
- Best Managed Company Award
- Best Corporate Governance Award
- Best Corporate Social Responsibility Award
- Best Investor Relations Award
- Most Committed to a Strong Dividend Policy Award

given by FinanceAsia Magazine

Further details of awards and recognitions are available in the 2012 Annual Report.



Newsweek
GREEN RANKINGS



Dow Jones
Sustainability Indexes
Mandate 2012/13

GRI Content Index and UNGC Principles COP

I. Strategy and Analysis

Profile	Description	Page	UNGC Principle	Comment
1.1	CEO statement	3	Statement of Continuing Support	
1.2	Description of key impacts, risks, and opportunities	3, 7 - 8		

2. Organizational Profile

Profile	Description	Page	UNGC Principle	Comment
2.1	Name of the organization	4		
2.2	Primary brands, products, and/or services	9 - 15		
2.3	Operational structure of the organization	9 - 15		
2.4	Location of organization's headquarters	4		
2.5	Number of countries where the organization operates	5		
2.6	Nature of ownership and legal form	4		PTT is a State Enterprise which is listed in the Stock Exchange of Thailand. For more information, please visit our website: www.pttplc.com/TH/About/pages/Background.aspx
2.7	Markets served	9 - 15		
2.8	Scale of the company	4		
2.9	Significant changes (size/structure/ownership) during the reporting period	9 - 15		
2.10	Awards	127 - 128		

3. Report Parameters

Profile	Description	Page	UNGC Principle	Comment
3.1	Reporting period	16		
3.2	Date of most recent previous report	16		
3.3	Reporting cycle	16		Corporate Sustainability reporting cycle is annually. To download the current and previous editions of our report, please visit our website: www.pttplc.com/th/Media-center/Pages/Sustainability-Report.aspx
3.4	Contact point	19		
3.5	Process for defining report content	17 - 18		
3.6	Boundary of the report	19		
3.7	Limitations on the scope/boundary of the report	19		
3.8	Basis for reporting on other partners	19		
3.9	Data measurement techniques and the bases of calculations	16		
3.10	Re-statements	111 - 126		
3.11	Significant changes (scope/boundary/measurement method) from previous reporting periods	19		
3.12	GRI content index	129 - 134		
3.13	External assurance policy and practice	135		

4. Governance, Commitments, and Engagement

Profile	Description	Page	UNGC Principle	Comment
4.1	Governance structure	21	1 - 10	
4.2	Whether the Chair of the highest governance body is also an executive officer	21 - 22		
4.3	Number and gender of board members that are independent and non-executive	22		For more information about our governance, please visit our website: <ul style="list-style-type: none"> • Organization structure: www.pttplc.com/th/About/Organization/Pages/Organization-Chart.aspx • Board of directors: www.pttplc.com/th/About/Organization/Pages/PTT-committee.aspx • Executives: www.pttplc.com/th/About/Organization/Pages/executive.aspx • Annual Report 2012: www.pttplc.com/th/Media-Center/Pages/Annual-Report.aspx • CG Handbook page 23 'Composition, Qualification and Appointment of the Board'
4.4	Mechanisms for providing recommendations	45	1 - 10	
4.5	Linkage between compensation of seniors and executives and company's performance	24 - 25		
4.6	Processes in place to ensure conflicts of interest are avoided	-		<ul style="list-style-type: none"> • CG Handbook page 37 'Ethics for Stakeholdings and Conflicts of Interest' • CG Handbook page 61 'PTT's Conflict of Interest Disclosure Form'
4.7	Process for determining the composition, qualifications, and expertise of the highest governance body	22		
4.8	Developed statements of mission or values, codes of conduct and principles	6 - 7		
4.9	Procedures overseeing organization's identification and management of economic, environmental and social performance	21, 26, 29		
4.10	Evaluating highest governance effectiveness	24 - 25		
4.11	Precautionary	33 - 36	7	
4.12	Principles or external initiatives on economic, environmental and social aspects	33, 82	1 - 10	
4.13	Memberships in associations and national/international advocacy organizations	3, 18		PTT is a member in various associations and national/international sustainability organizations such as TBCSD, WBCSD, CSR Club, CSR-DIW Network, PTIT, and ASCOPE.
4.14 _{COMM}	Stakeholder groups	45		
4.15	Basis for identification and selection of stakeholders	44		
4.16	Approaches to stakeholder engagement	45		
4.17 _{COMM}	Stakeholders' topics and concerns	45		

5. Disclosures on Management Approach and Performance Indicators

Economic

Profile	Description	Page	UNGC Principle	Comment
DMA EC	Disclosure on Management Approach - Economic	9 - 15, 30, 100	1, 4, 6, 7	For more information, please refer to our Annual Report.
EC1 _{COMM}	Direct economic value generated and distributed	100, 111		For full Financial Statement, please visit our website: www.pttplc.com/TH/ir/index.aspx?
EC2 _{COMM}	Implications of climate change	36, 62 - 63	7	
EC3	Defined benefit plan obligations	73		
EC4	Financial assistance	111		

Profile	Description	Page	UNGC Principle	Comment
EC5	Range of ratio of standard entry level wage by gender compared to minimum local wage	73	1	
EC6 _{COMM}	Locally based suppliers	53		
EC7 _{COMM}	Local hiring	-	6	PTT defines 'local' as country where we operate. Currently, the reporting scope in 2012 covers only operations in Thailand and all of employees are Thai.
EC8 _{COMM}	Indirect economic impact	100 - 110		
EC9 _{COMM}	Describe significant indirect economic impacts	100 - 110		
OG1	Volume and type of estimated proved reserves and production	9		

Environment

Profile	Description	Page	UNGC Principle	Comment
DMA EN	Disclosure on Management Approach - Environment	30 - 31 81 - 82	7, 8, 9	
EN1 _{COMM}	Materials used by weight or volume	-	8	Performance indicator is not material. Since with energy as the dominant input and output in our business, it is difficult to see the value of reporting on this indicator for our sector.
EN2 _{COMM}	Percentage of recycled materials used	-	8, 9	Performance indicator is not material. Since with energy as the dominant input and output in our business, it is difficult to see the value of reporting on this indicator for our sector.
EN3	Direct energy consumption	118, 125	8	
EN4	Indirect energy consumption	118, 126	8	
OG2	Renewable energy investment	11, 57		
OG3	Renewable energy generation	57		
EN8 _{COMM}	Water withdrawal	118 - 119	8	
EN9 _{COMM}	Water sources affected by water withdrawal	70	8	
EN10	Water recycled and reused	118 - 119	8, 9	
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	98 - 99	8	
EN12	Description of significant impacts on biodiversity	98 - 99	8	
EN13	Habitats protected or restored	98 - 99	8	
EN14 _{COMM}	Strategies and plans for managing impacts on biodiversity	98 - 99	8	
OG4	Operating sites with biodiversity risk assessment	94, 98 - 99		
EN15	IUCN Red List species	99	8	
EN16 _{COMM}	Direct and indirect GHG	66, 89, 118, 124	8	
EN17 _{COMM}	Other relevant indirect GHG	67	8	
EN18 _{COMM}	Initiative to reduce GHG	64, 85	7, 8, 9	
EN19	Emission of ODS	-	8	PTT is in the process of phasing the ozone-depleting substances (ODS) by substituting ODS with non-ODS refrigerants in which we hope to complete the phase-out process in the near future.
EN20 _{COMM}	NOx, SOx, and other emissions	118, 123	8	
EN21	Water discharge	118, 120	8	Wastewater treatment process of PTT and PTTEP are effectively designed, operated and monitoring to assure qualities of treated wastewater are in compliance with relevant standards, prior to discharging to the industrial estate receiving canal and to the sea.
EN22 _{COMM}	Waste	118, 121	8	

Profile	Description	Page	UNGC Principle	Comment
OG5	Volume of formation or produced water	118, 120		
EN23 _{COMM}	Spills	118, 122	8	
OG6	Volume of flared and vented hydrocarbon	-		PTT learned about the importance of reporting volume of flared and vented hydrocarbon and is working with the calculation methodology so that it can be quantified and reported from FY2013.
OG7	Amount of drilling waste	118, 121		
EN26 _{COMM}	Initiatives to mitigate environmental impacts of products and services	56 - 57	7, 8, 9	
EN27	Percentage of products sold and their packaging materials that are reclaimed by category	-	8, 9	Reporting of percentage of packaging materials is not material. Main product is energy which no packaging is used.
OG8	Benzene, Lead and Sulfur content in fuels	57		
EN28	Environmental fines and sanctions	-	8	No significant fine and non-monetary sanction for non-compliance with environmental law and regulations in 2012.

Labor Practice and Decent Work

Profile	Description	Page	UNGC Principle	Comment
DMA LA	Disclosure on Management Approach – Labor Practice	30, 78	1, 3, 6	
LA1	Total workforce	112		
LA2	Rate of new employee hires and employee turnover	112 - 113	6	
LA3	Benefits for employees	73		
LA4	Employees covered by collective bargaining agreements	79	1, 3	
LA5	Notice period regarding operational changes	-	3	Reporting on the minimum notice period regarding significant operational changes is not material. PTT keeps employees well informed of operational changes through a variety of channels. Business and functional specific news is communicated through intranet that can be accessed by any employee in Thai language. In addition, leaders consistently cascade communications through the organization to employees. These communications occur in a time frame that is both timely and effective and does not cause conflict with the potential insider trading. While there is no minimum time frame for notifying our employees of significant operational changes, PTT makes every effort to give a reasonable amount of notice to all employees in the event of a significant change.
LA7 _{COMM}	Rates of injury, occupational diseases, lost days, absenteeism, fatality	116 - 117	1	
LA8	Training regarding serious diseases	74	1	
LA10	Training Hours	77, 114		
LA11	Programs for skills management and lifelong learning	73		
LA12	Employee performance review	74		
LA13	Composition of governance bodies and breakdown of employees	42, 112	1, 6	PTT report diversity data on the composition of the board of directors. PTT also report diversity data on employees by gender and age group. However data on minority employees (i.e. disabled employees) are not aggregated at group level as this depends on individual wish for declaration.

Profile	Description	Page	UNGC Principle	Comment
LA14	Basic salary and remuneration	73	1, 6	
LA15	Return to work after parental leave	114		

Human Rights

Profile	Description	Page	UNGC Principle	Comment
DMA HR	Disclosure on Management Approach – Human Rights	30, 40	1, 2, 3, 4, 5, 6	
HR1	Significant investment agreements and contracts undergone human rights screening	-	1, 2, 3, 4, 5, 6	All business partners and contractors (100 percent) shall comply with the Thai labour law.
HR2	Significant suppliers and contractors undergone human rights screening	-	1, 2, 3, 4, 5, 6	All business partners and contractors (100 percent) shall comply with the Thai labour law.
HR3	Employee training concerning aspects of human rights	41	1, 2, 3, 4, 5, 6	
HR4	Non-discrimination	39	1, 2, 6	
HR5	Freedom of association and collective bargaining	43, 51	1, 2, 3	This year there was on case of child labor, forced labor, employee dismissal or obstruction against the assembling of employees for negotiation purpose.
HR6	Child labor	43, 51	1, 2, 5	This year there was on case of child labor, forced labor, employee dismissal or obstruction against the assembling of employees for negotiation purpose.
HR7	Forced and compulsory labor	43, 51	1, 2, 4	This year there was on case of child labor, forced labor, employee dismissal or obstruction against the assembling of employees for negotiation purpose.
HR8 _{COMM}	Security practices	87	1, 2	
HR9 _{COMM}	Violation involving rights of indigenous people	-	1, 2	Reporting on this indicator is not applicable. PTT does not have any operation located in or near the vicinity of indigenous communities. PTT; however, fully supports and respects the rights of communities in accordance with law. PTT Group CSR Framework provides the frame PTT human rights implementation.
OG9	Operations where indigenous communities are present or affected by activities	-		Reporting on this indicator is not applicable. PTT does not have any operation located in or near the vicinity of indigenous communities. PTT; however, fully supports and respects the rights of communities in accordance with law. PTT Group CSR Framework provides the frame PTT human rights implementation.
HR11	Grievances related to human rights	43, 97		

Society

Profile	Description	Page	UNGC Principle	Comment
DMA SO	Disclosure on Management Approach - Society	30, 39, 93	10	
SO1	Impacts of operations on communities	94		
SO2	Business units analyzed for risks related to corruption	39	10	
SO3	Anti-corruption training	38	10	
SO4	Response to corruption incidents	39	10	
SO5 _{COMM}	Participation in public policy development and lobbying	40, 61	1 - 10	
SO6	Political contribution	-	10	Political contribution is prohibited. CG Handbook page 36 '3.2 Ethics for Political Support

Profile	Description	Page	UNGC Principle	Comment
S07	Actions for anti-competitive behavior	39		
S08_{COMM}	Fines and non-monetary sanctions for non-compliance with laws	39		
S09_{COMM}	Operations with potential/actual impacts	94		
S010_{COMM}	Preventions and mitigations measures	94		
OG10	Number and description of significant disputes with local communities and indigenous peoples	-		Reporting on this indicator is not applicable. PTT does not have any operation located in or near the vicinity of indigenous communities. PTT; however, fully supports and respects the rights of communities in accordance with law. PTT Group CSR Framework provides the frame PTT human rights implementation.
OG11	Numbers of sites that have been decommissioned and sites that is in the process of being decommissioned	-		No decommissioning.
OG12	Operations where involuntary resettlement took place, the number of households resettled in each and how their livelihoods were affected in the process	-		None of our projects have required relocation.
OG13	Number of process safety events, by business activity	87		

Product Stewardship

Profile	Description	Page	UNGC Principle	Comment
DMA PR	Disclosure on Management Approach - Product Responsibility	30	1, 8	
PR1	Health and safety impacts of products and services	54	1	
PR2	Incidents of non-compliance concerning health and safety impacts of products	54	1	
PR3	Product information requirements	55	8	All products and services (100 percent) shall comply with the PTT labelling procedures which are developed in accordance with the product information laws.
PR4	Incidents of non-compliance concerning products and service information and labeling	59	8	No significant fine and non-monetary sanction for non-compliance with laws, regulations and voluntary codes concerning products and service information and labeling.
PR5	Customer satisfaction	59		
PR6	Programs for adherence to laws related to marketing communications	54		No significant fine and non-monetary sanction for non-compliance with laws, regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship in 2012
PR7	Incidents of non-compliance with regulations concerning marketing communications	54		No significant fine and non-monetary sanction for non-compliance with laws and regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship in 2012
PR8	Complaints regarding breaches of customer privacy and losses of customer data	54	1	No substantiated complaint regarding breach of customer privacy and losses of customer data in 2012
PR9	Fines for non-compliance with laws and regulations concerning the provision and use of products and services	54		No significant fine and non-monetary sanction for non-compliance with laws and regulations concerning the provision and use of products and services in 2012
OG14	Volume of biofuels produced and purchased meeting sustainability criteria	57		

Orange text means core indicators

Subscript COMM means indicators with added commentary in GRI Oil and Gas Sector Supplement

Independent Assurance Report



Independent Assurance Report on Corporate Sustainability Report 2012

To Board of Directors of PTT Public Company Limited

PTT Public Company Limited ("PTT") engaged PricewaterhouseCoopers ABAS Limited ("PwC") to perform a limited assurance engagement on the selected subject matter ("the Subject Matter") presented in the corporate sustainability report for the year ended 31 December 2012 ("the Corporate Sustainability Report") in accordance with the reporting criteria ("the Criteria").

Subject Matter

The selected Subject Matter was chosen by PTT comprises:

- a) Environmental dimension performance indicators
 - Total direct energy consumption (GJ) (Page 125)
 - Greenhouse gases emission (scope 1 & 2) (tons CO₂e) (Page 124)
 - Nitrogen Oxide (NOx) and Sulphur Dioxide (SOx) emission (tons) (Page 123)
 - Oil spill (cubic meters) (Page 122)
 - Hazardous waste disposal and disposal method (tons) (Page 121)
 - Total water withdrawal (million cubic meters) (Page 119)
 - Total water discharge (million cubic meters) (Page 120)
- b) Social dimension performance indicators
 - Lost workday case, total recordable injuries case, total recordable injuries rate, lost time injuries frequency rate and fatalities (Page 117)

Criteria

The Subject Matter above has been assessed according to the following Criteria:

- The WBCSD/WRI Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, and
- The 'Sustainability Reporting Guidelines & Oil and Gas Sector Supplement version 3.1' by the Global Reporting Initiative

Inherent limitations

Inherent limitations exist in all assurance engagements due to the selective testing of the information being examined. Therefore fraud, errors or non-compliance may occur and not be detected. Additionally, non-financial data may be subject to more inherent limitations than financial data, given both its nature and the methods used for determining, calculating and estimating such data.

Responsibility and Methodology

PTT:

The management of PTT is responsible for preparing the Corporate Sustainability Report, determining the adequacy of the Criteria to meet the reporting need of PTT. Management's responsibility also includes designing, implementing and maintaining of a system of internal control relevant to the preparation and fair presentation of the Subject Matter that is free from material misstatement, whether due to fraud or error.

PwC:

Our responsibility is to provide a conclusion on the subject matter based on evidence-gathering procedures in accordance with the International Standard on Assurance Engagements (ISAE) 3000 "Assurance Engagements other than Audits or Reviews of Historical Financial Information".

The procedures selected depend on auditor judgment, including an assessment of the risks of material misstatement of the Subject Matter, whether due to fraud or error. In making these risk assessments, we

consider internal control relevant to PTT's preparation and fair presentation of the Subject Matter in the Corporate Sustainability Report in order to design assurance procedures that are appropriate in the circumstances, but not for the purpose of expressing a conclusion on the effectiveness of PTT's internal controls.

We read other information included within the Corporate Sustainability Report and consider whether it is consistent with the knowledge obtained through our procedures. We consider the implications for our report if we become aware of any apparent material inconsistencies with the Subject Matter. Our responsibilities do not extend to any other information reported by PTT.

Assurance work performed

The assurance procedures included the following work:

- visiting selected two sites of business units:
 - Rayong Gas Separation Plant
 - Si
- conducting an offsite review of the following business units:
 - Greater Bangkok North
 - Greater Bangkok South
 - Arthit
- completing analytical procedures
- reviewing the appropriateness of management review and reporting processes
- performing substantive testing of selected data to source information, and
- reviewing the process for consolidating data at a corporate level.

As a limited assurance engagement generally comprises of making enquiries, primarily of management, and applying analytical procedures and the work is substantially less detailed than that undertaken for a reasonable assurance engagement, the level of assurance is lower than would be obtained in a reasonable assurance engagement.

We believe that the information we have obtained is sufficient and appropriate to provide a basis for our conclusion.

Use of our report

This report has been prepared in accordance with our engagement terms, solely for the Board of Directors of PTT as a body, for the purpose of reporting on the Subject Matter within the Corporate Sustainability Report. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Board of Directors of PTT for our work or for this report, or for any other purpose other than that for which this report was prepared.

Our report is intended solely for the Board of Directors of PTT for the purpose described above, and must not be distributed or used by any other party.

Conclusion

Based on the work described above, nothing has come to our attention that causes us to believe that the Subject Matter for the year ended 31 December 2012 included in the Corporate Sustainability Report has not been prepared, in all material respects, in accordance with the Criteria.

For PricewaterhouseCoopers ABAS Limited

By Srivadi Anumanrajdhon
Partner

Bangkok, Thailand
13 March 2013



Statement GRI Application Level Check

GRI hereby states that **PTT Public Company Limited** has presented its report "Corporate Sustainability Report 2012" to GRI's Report Services which have concluded that the report fulfills the requirement of Application Level A+.

GRI Application Levels communicate the extent to which the content of the G3.1 Guidelines has been used in the submitted sustainability reporting. The Check confirms that the required set and number of disclosures for that Application Level have been addressed in the reporting and that the GRI Content Index demonstrates a valid representation of the required disclosures, as described in the GRI G3.1 Guidelines. For methodology, see www.globalreporting.org/SiteCollectionDocuments/ALC-Methodology.pdf

Application Levels do not provide an opinion on the sustainability performance of the reporter nor the quality of the information in the report.

Amsterdam, 25 April 2013

A handwritten signature in blue ink, appearing to read "Nelmara Arbex", is written over a large, faint watermark of the GRI logo.

Nelmara Arbex
Deputy Chief Executive
Global Reporting Initiative



The "+" has been added to this Application Level because PTT Public Company Limited has submitted (part of) this report for external assurance. GRI accepts the reporter's own criteria for choosing the relevant assurance provider.

The Global Reporting Initiative (GRI) is a network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework and is committed to its continuous improvement and application worldwide. The GRI Guidelines set out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. www.globalreporting.org

Disclaimer: Where the relevant sustainability reporting includes external links, including to audio visual material, this statement only concerns material submitted to GRI at the time of the Check on 29 March 2013. GRI explicitly excludes the statement being applied to any later changes to such material.



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