



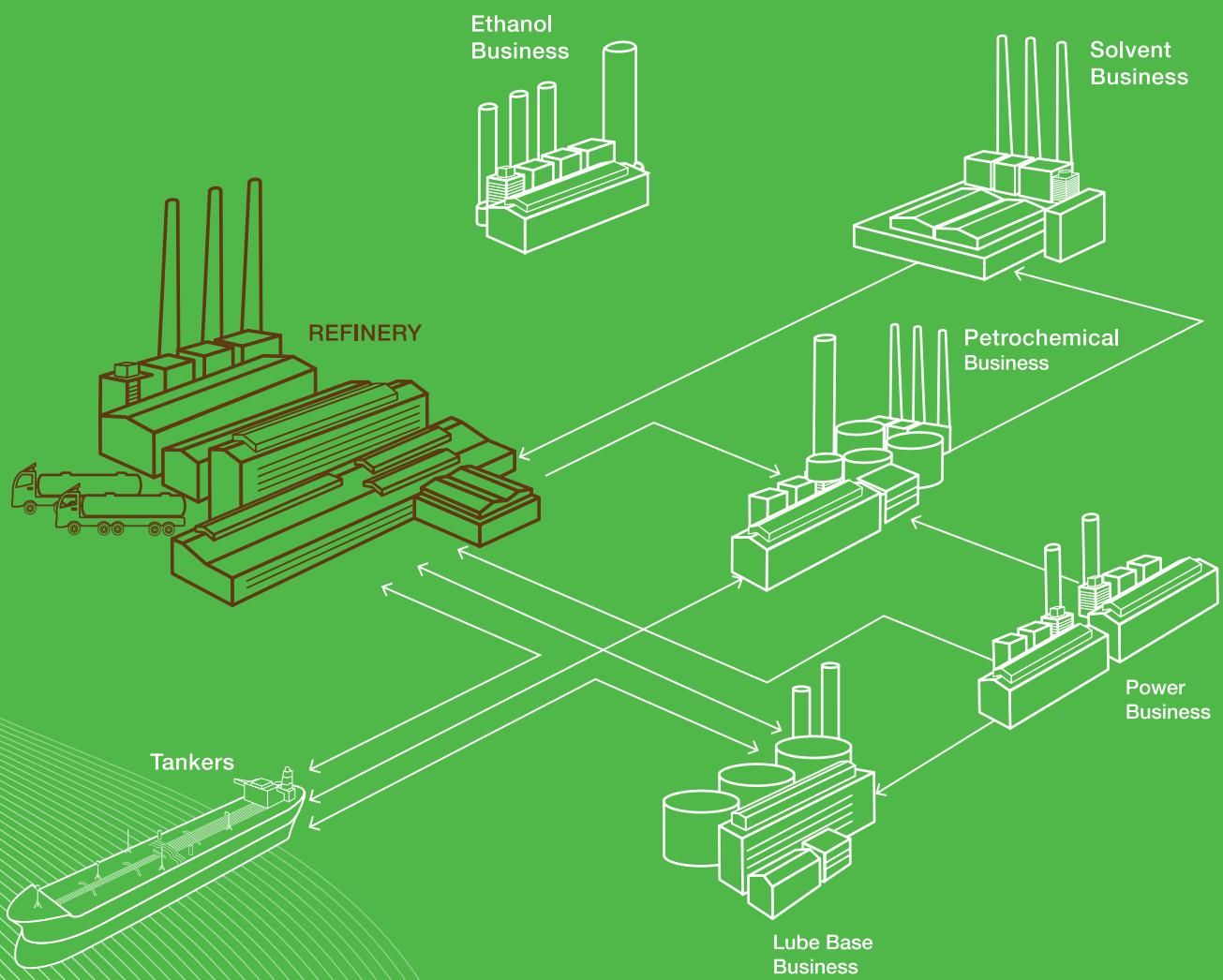
## THE FIRST STORY OF THAIOIL'S QUEST FOR SUSTAINABILITY

### SUSTAINABILITY REPORT 2011

THAI OIL PUBLIC COMPANY LIMITED

REUSE  
REDUCE  
RECYCLE

# THAIOIL GROUP SYNERGY



# Content

**02**

About  
This  
Report

**04**

Thaioil  
At a Glance

**14**

Message  
from CEO

**16**

The Story  
Begins...

**24**

Our Good  
Corporate  
Governace  
& Ethnics

**36**

Our Clean  
& Safe  
Operation  
Story

**50**

Our People  
Story

**58**

Our  
Customers  
& Suppliers  
Story

**66**

Our  
Communities  
& Society  
Story

**76**

Summary  
of Our  
Performance

**77**

Our Prizes

**78**

GRI Content  
Index

# About This Report

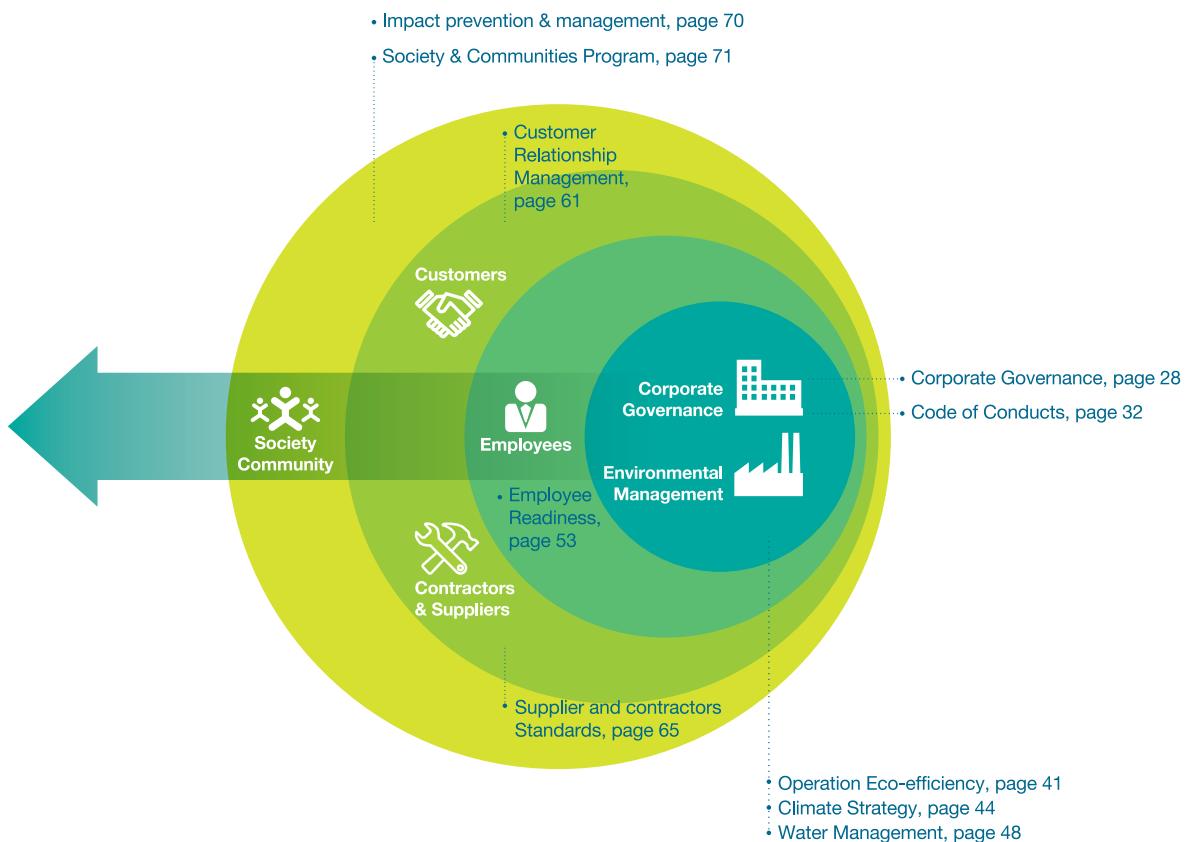
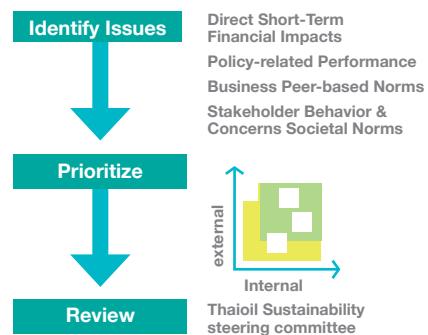
**This 2011 Sustainability Report is marked as the first annual public report of Thai Oil Public Company Limited (Thaioil) prepared in accordance with the Global Reporting Initiatives (GRI).**

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GRI Reporting Guidelines Version 3.0 (G3) and its Indicator Protocols have been followed in this report. The Report covers the period of 1 January to 31 December 2011. It is our policy to disclose balance, comparable, accurate and timely information that is material to the sustainability of Thaioil from organizations within our control. Therefore, boundary of environmental and safety performance data in 2011 covers operations in Thailand under Thaioil, Thai Paraxylene Company Limited (TPX), Thai Lube Base Public Company Limited (TLB), Thaioil Power Company Limited (TP) and Independent Power (Thailand) Company Limited (IPT) where we have reliable and auditable information. Performance data of contractors and suppliers is clearly indicated where it presents. Human resource management information is limited to

only Thaioil as we are in the process to streamlining our human resources policy across the Group. We are currently seeking to expand the scope of performance data disclosure to mirror the materiality of the whole value chain of Thaioil specifically in areas where we have the control and influence. Data that changes every year, such as information on human resources, have been given as of the last day of this fiscal year (31 December 2011), while special cases have been marked with asterisks. Thaioil believes that this report merits GRI G3 Level B. We are developing a comprehensive process to gain independently assurance of the report, ensuring that material issues are reported and quality of reported information is reliable. We expect our 2014 Report to be the first independently assured sustainability report.

The Principle of Materiality from AA1000APS and GRI Technical Protocol: Applying the Report Content Principles is applied to Thaioil and our subsidiaries in defining the content of this sustainability report as illustrated in the figure to the right. Materiality determination is an on-going process which is reviewed annually to ensure changes and maturity of issues and concerns. Thaioil is expecting this process to be continuous improved to include more sources of information in the near future. The figure bellow shows material issues which are addressed in this report.



For further information, please contact us at the following:  
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 Telephone +66(0) 2299-0000, +66(0) 22797-2999  
 Fax +66(0) 2797-2974  
 E-mail [sustainability@thaioilgroup.com](mailto:sustainability@thaioilgroup.com)  
 URL <http://www.thaioilgroup.com>



# THAIOIL AT A GLANCE

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**95** million  
barrels  
of crude and  
other feedstocks

**> 400,000** million  
baht  
of products  
value provided  
for the society

**18.5%** Return  
on equity

---

# THAIOIL THROUGHOUT THE YEAR

January	February	May	October	November-December
<b>Completed the unit expansion of Treated Distilled Aromatic Extract (TDAE) at TLB</b>			<b>Become the first in Thailand to produce a complete range of fuels to meet EURO 4 standards</b>	<b>Provided financial support and in-kind to help Thai society in the flooding crisis</b>
	<b>Increased investment in ethanol business by purchasing 21.28% share of Ubon Bio-Ethanol Company</b>			<b>Grand opening of the Community Medicine Center</b>
		<b>Co-founded PTT Energy Solutions with PTT, PTTGC and IRPC to provide engineering consulting</b>		

**We strive to  
be a leading  
fully integrated  
refining and  
petrochemical  
company in  
Asia Pacific**

1

**To be in top quartile  
on performance and  
return on investment**

2

**To create  
a High-Performance  
Organization that promotes  
teamwork, innovation and  
trust for sustainability**

3

**To emphasize  
good Corporate Governance  
and commit to Corporate  
Social Responsibility**

# Thai Oil Public Company Limited

**Headquarter**

555/1 Energy Complex Building A, 11th Floor, Vibhavadi Rangsit Road,  
Chatuchak, Chatuchak, Bangkok 10900, Thailand

**Registered Capital**

THB 20,400,278,730

**Number of employees**

840 (as of 31 December 2011)

**Business sector**

We operate a comprehensive refinery that uses advanced and efficient processing technologies to produce petroleum products primarily for domestic distribution. Our auxiliary investments include other such associated businesses as: petrochemical, lube base oil, ethanol, solvent, power generation, marine and pipeline transportation of crude oil, petroleum and petrochemical products including service provider for crude oil, professional services

The company was listed on the Stock Exchange of Thailand on 9 August 2004 and the first day trading was 26 October 2004.

We are one of the associates of PTT in the class of Refinery Flagship Company within PTT Group which PTT owned 49.10 of the company's issues (as of 31 December 2011).

The Thaioil Group of companies share common vision and mission in our concerted effort to drive sustainability across the value chain and society. We advocate a common set of values which are in line with our mission.

## Corporate Value



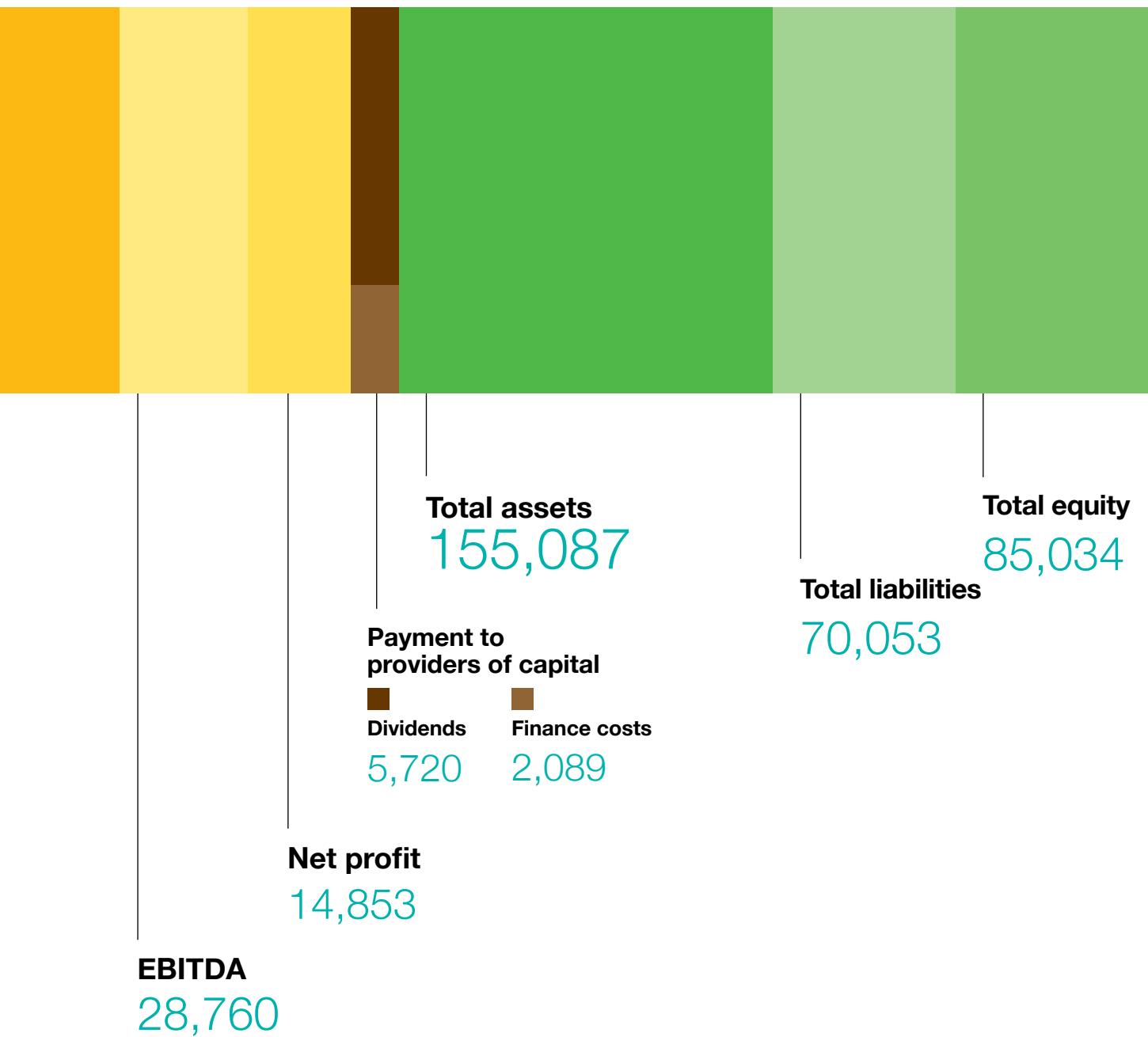
# Financial Highlights

Million Baht

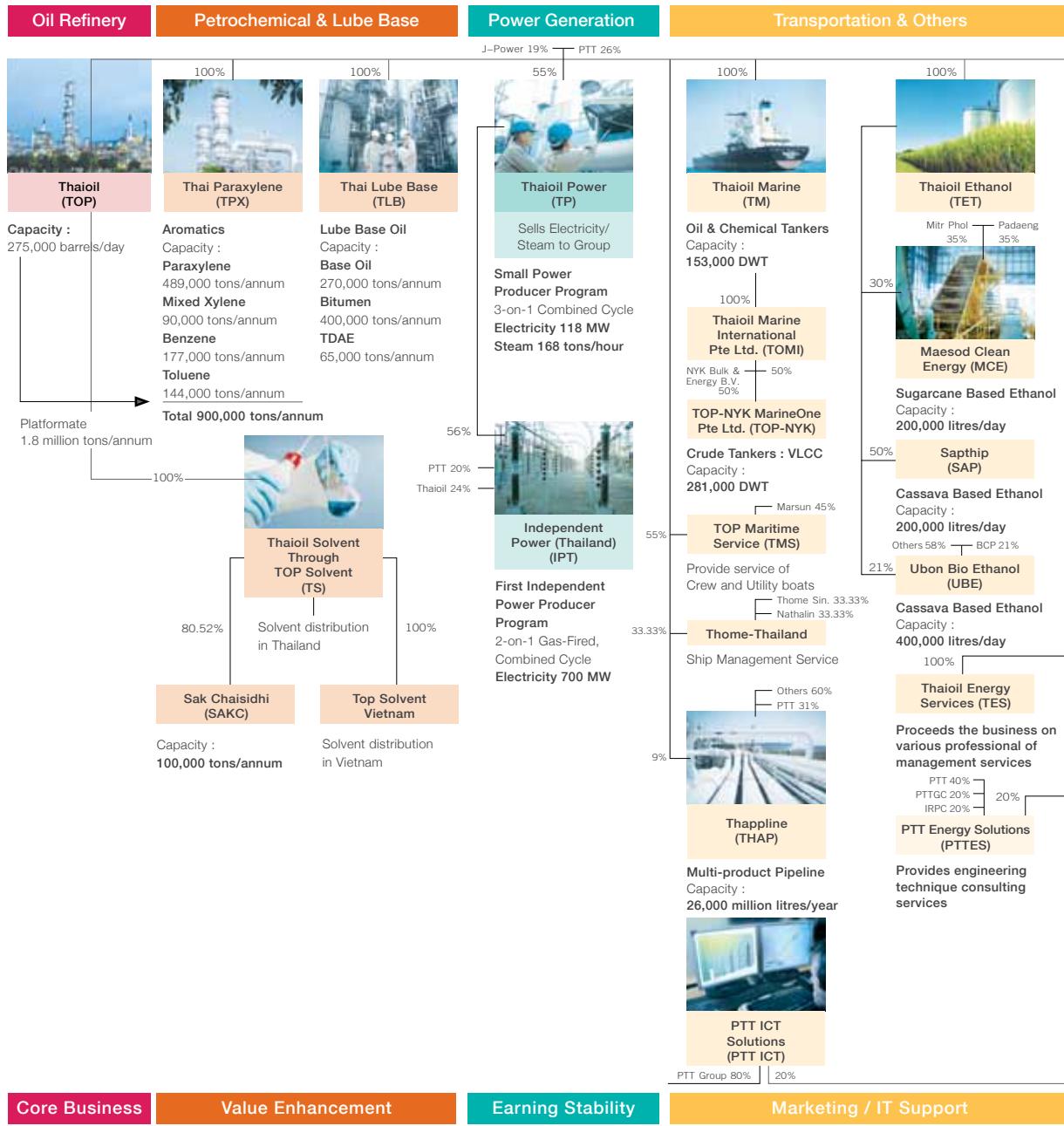


**Total revenues**  
**448,773**

**Operating cost**  
**422,012**



# TOP Group Business Structure



## Oil Refinery

### Core business

The Oil Refinery Business has a capacity of approximately 275,000 bbl per day to refine crude oil and other feed stocks. This accounts for approximately 25% of the nation's overall refining capacity and is capable of meeting the domestic demand for petroleum which stands at an average of 35%. As one of the regional leading complex refineries, our strength is in flexibility to use varieties of crude oil from various sources, efficiency of crude optimization and energy use and operational reliability.



## Power Generation

### Earning & stability

Power generation business comprises Thaioil Power Co., Ltd. (TP) and Independent Power (Thailand) Co., Ltd. (IPT). IPT is a natural gas-fired combined-cycle while TP operates natural gas co-generation power plant. IPT and TP have combined capacity to produce 700 and 118 MWh respectively. Electricity from TP is mainly for internal use to provide stability of operations while electricity from IPT is provided to the national grid. Aside from electricity, TP is able to provide 168 tons of steam per hour for operations in the same area.

## Petrochemical & Lube base

### Value enhancement

The Business comprises products such as aromatics, lube base oil and solvents which increase the value of our refinery value chain. Petrochemical and lube base plants are directly connected to the refinery and the power plant. The petrochemical complex has a total annual production of 900,000 tons of upstream aromatics and 735,000 tons of lube base oil, bitumen and TDAE. Thaioil engages in the solvent business through a holding company that invests in solvent manufacturing plants and trading business that have a combined annual production of 100,000 tons.

## Transportation & Other

### Marketing support and efficiency improvement

Thaioil Marine Company Limited (TM) is 100% owned by Thaioil which the marine fleet includes 1 very large crude carrier (VLCC) with 281,000 dead weight tons and 6 petroleum and petrochemical tankers with an overall capacity of 153,000 dead weight tons. Ethanol business is conducted through a holding company to invest in ethanol manufacturing plants that has the combined capacity of 800,000 liters per day. Thaioil also has Thaioil Energy Services to manage human resources for the Thaioil Group, hold 20% share in PTT Energy Solutions and PTT ICT Solutions along with other companies in PTT Group and 9% share in Thai Petroleum Pipeline Co., Ltd.

# Message from CEO

I am pleased to present our first Sustainability Report that has been prepared in conformance with the Global Reporting Initiatives (GRI). The intent is not only to illustrate our past achievements but also to make public our commitment to create value for our stakeholders and contribute to the sustainable development of the society in which we operate.

For Thaioil, sustainable development means our ability to sustain long term value creation through both horizontal growth via a synergized refining network, deeper investment in aromatics, lube base oil and solvents, and vertical growth by exploring new business opportunities in specialty products and ethanol.

At present, many new refineries in Asia-Pacific possess the strength for large-scale productivity, whereas our refinery outplays most of them in terms of operational flexibility and reliability. Maximizing efficiency of natural resources and energy use is crucial to help keep our business competitive in the market. We have also noted an increased demand from our stakeholders for higher transparency with regards to our company's environmental and social performance. Low carbon initiatives introduced and promoted by various international communities and governments has confirmed our aspiration to become an Energy Converting Company.

As such, Thaioil developed the Sustainable Development Roadmap (SD Roadmap) in 2011 to enable us to achieve our vision of leading a fully integrated refining and petrochemical company in Asia-Pacific along with sustaining long-term value creation to our stakeholders.

Businesswise, our overall performance exceeded our expectations as we saw increased sale revenues and net profitability by 40% and 66% in 2011 respectively. The key to this achievement was based on our ability to respond rapidly and effectively to challenges while staying on course by focusing on the flexibility of our feedstock, efficient use of our resources an energy usage and reliability of our operations.

In addition to our exceptional business performance, we took steps to strengthen our efforts in social and environmental dimensions, which we believe has yielded outstanding outcomes. For example, our safety performance has been above the industry standard and we recorded zero fatalities of employees or contractors. There was also no major environmental incident, including spills and non-compliance reported. We invested more than 70 million baht in the Community Health and Education Center in Sriracha to help better the education and health of our neighbors. We had done public consultations for 1 environmental impact assessment project in 2011 which we expect the assessment to be completed within this year. In addition, we have developed the full scale health impact assessment for our major operations in Sriracha. We also took an active role in supporting flood relief and recovery efforts by donating diesel fuel for the Thai navy for use in rescue and relief missions; providing boats for flood victims through the Ministry of Energy; handing out relief supplies bags; and working with PTT Group to manage a flood relief center at Adisorn Military Camp during the crisis. Our overall contribution was estimated to be more than 35 million baht.

I have a very positive outlook regarding the prospects of the Thaioil Group as we move towards being an Energy Converter and provide value added projects that suit the demand of the future. However, we recognize that a change is needed for us to follow through with our aspiration to go for the regional business area via expansion and integration to focus on producing high valued products. To enable this change, we have placed a priority on talent attraction and retention to ensure the readiness of our employees for the challenging road ahead. On the business practice side, our commitment to develop our business process in line with the Thailand Quality Award is expected to strengthen our internal management, while innovation management will be the key enabler of our future.

Our priorities spanning the next three years would be in the areas of innovating resource efficiency and low-polluting solutions, responsibly and transparently conducting our business, and continuously identifying and developing opportunities to create value to our stakeholders.

I would like to thank all of our stakeholders for their continued support, as well as our Thaioil Group employees for their valuable contributions. We will continue to drive our sustainability agenda forward so that we get closer to the position of the Energy Converting Company that we aspire to be.



A handwritten signature in black ink, appearing to read "S. Bulakul".

**Mr. Surong Bulakul**

Chief Executive Officer  
Thai Oil Public Company Limited

# THE STORY BEGINS...



## Highlights from 2011

**>50** years

of refining energy  
for Thailand and Asia

**1** st

step of change toward  
more sustainable future

**>50** years

that we will step into  
the future to convert  
energy for humanity

What We

### DID IN 2011?

**Developed our First Sustainable  
Development Roadmap**

**Integrated Sustainable Development  
Roadmap into Thaioil Business Plan**

What We

### PLAN TO DO IN 2012?

**+ Develop and Roll-out Sustainable  
Development Action Plan**

**+ Develop and Roll-out SD  
Communication Program**

# The Energy Converter for the Future of Sustainable World

In 1960, a small privately own refinery has been established under the register value of only 10 million baht to refine the first drop of fuel for Thai society and economy. Since that day, we have gone through many challenges, such as oil price crisis or economic downturn but we are able to survive through the test of time and undisputedly succeeded in being one of the leading companies in Thailand.

We are proud of our decorated history but we now need to carry on our journey into the changing world of shifting global economic power, global warming, environmental degradation, natural resource degradation, over populating and increasing trend of natural disaster. In addition, the voices of stakeholders have never been louder that generates pressure into political and marketing arena to have stringent requirements and more influence on every business.

We, Thaioil and our affiliates as the Group, regards challenges as opportunity and are able to foresee what our success will look like in the next 50 years. We will not stop only at being a national champion, we will not longer be only operations focused and hardware oriented company and we will not provide only commodity products in the next 50 years. In the next 50 years, we will be a regional champion, we will be innovation focused and software oriented company, and we will provide specialty products to position ourselves as the “Energy Converting Company”. Our aspiration to provide added value for any kind of energy the world would use in the next 50 years. This aspiration will support the world to overcoming environmental challenges and contribute to the sustainable development of the nature and humanity.

As a first step, we continuously develop our work system to promote business excellence, and form a concrete foundation for changes to come. In 2011, we mark the first step in our Growth Strategy toward being an energy converter. We build everything on our strengths on flexibility of raw material use, efficiency of resource and energy use and reliability of our operation. Meanwhile, we have been developing a Sustainable Development Roadmap to guide us through balancing prosperity, people and planet.



# Our Business Principles

## From Thaioil's missions

to be in the top quartile on performance and return on investment; to create a high-performance organization that promotes teamwork, innovation and passion for sustainability; with emphasis on good Corporate Governance and commitment to Corporate Social Responsibility, we have defined our business principles into High Performance Organization (HPO), Corporate Governance (CG) and Corporate Social Responsibility (CSR).

We believe the contribution of the three principles will take Thaioil to the level of corporate sustainability where we could provide value added products for the future.

We deploy these principles through multiple channels of which one of them is our Corporate Value,

**POSITIVE** that stands for **P**rofessionalism, **O**wership and commitment, **S**ocial responsibility, **I**ntegrity, **T**eamwork and collaboration, **I**nitiative, **V**ision focus and **E**xcellence striving.



## Sustainable Development at Thaioil

At Thaioil, "Sustainable Development" reflects our ability to sustain long term value creation through our synergized refining network, deeper investment in aromatics, lube base oil and solvents, and new business opportunities in bio-ethanol. The above value will be realized by adopting innovative and sustainable approaches in managing environmental and social aspects from our activities and products.

Therefore, we develop our own Sustainable Development (SD) model to achieve and sustain a position in internationally recognized sustainability indexes through stakeholder engagement process, integrated SD management process and embedding SD principles into our culture.

SD issues material to our sustainable development are identified and prioritized through gap assessment and benchmarking to compose the Thaioil Group Sustainable Development Roadmap consisting of initiatives in the dimension of economic, environment, society and governance. Our Strategic Thinking Session, a platform where all our senior leaders brainstorm to consolidate and make decision for long-term, medium-term and short-term strategic plan of Thaioil, will from now on include our Sustainable Development Roadmap in its agenda. We expect to be able to communicate the detail and process against the Roadmap in our next Sustainability Report.

## Stakeholder Engagement at Thaioil

Engagement of stakeholders is the central piece of business process at Thaioil. We identify groups of stakeholders based on relevance to Thaioil's activities, products and services. The list of stakeholder groups include: shareholders, customers, business partners, creditors, financial institutions, employees, local communities, society, and relevant public agencies. We adopt de-centralized approach in stakeholder identification and management as each Thaioil department is responsible to identify and manage the nine groups of stakeholders as shown in the table below. The overall picture of Thaioil stakeholder engagement process, the engagement approach, key topics, and concerns and approach to address concerns are as follows:

Stakeholder Group	Key Engagement Approach	Key Topics & Concerns	Result/Approach to Address Concerns
Shareholders/ Capital Providers/ Investors	Annual general meeting Quarterly performance update Analyst meeting Road show Annual report	Financial performance Corporate governance Long term investment	Financial highlights outlined in this report confirms our excellent financial performance Board of Directors are independently assessed by the Institute of Thai Directors in 2011 Aspiration to be the “Energy Converting Company” of the future and selecting Dow Jones Sustainability Indexes (DJSI) as a benchmarking tool in assessing sustainability performance against leading oil and gas companies
Employees	Joint Advisory Committee Monthly newsletter Annual engagement and satisfaction survey	Career development Employee welfare	Integrated career management system to identify performance gap, develop individual performance development plan, conduct annual performance appraisal along with coaching, mentoring and knowledge management system to develop our employees Compensation and welfare for all employees beyond regulatory and respecting the rights of all employees according to Universal Principles of Human Rights
Regulators	Participating in government initiatives Government report	Regulatory compliance	Internal control and internal audit to ensure compliance at the corporate level for SET and SEC rules along with Integrated Management System at site level to ensure compliance with quality, safety and environmental regulations
Communities	Regular community engagement program Monthly community leaders meeting	Local environmental, health and safety impacts Coexisting between communities and plants and good quality of life	Environmental impact assessment that including social and health aspect according to Thai regulations Community development and social investment programs for adjacent communities and larger society
Customers	Regular communication Monthly visit Annual satisfaction survey	Quality and timeliness of products/services	Voice of customers and customer relationship management processes are in place to continually improve our process and ensure satisfaction of customers
Suppliers/ Contractors	Regular communication email/phone call	Clear communication Following agreement	Approved vendor list to be a mechanism to promote our CSR values onto our suppliers and contractors. We endeavor to improve their CSR performance in line with our mission.

We are at the stage of our standardizing our stakeholder engagement process across the Thaioil Group to ensure each function is systematically identified, prioritized and managed, up to our stakeholder's expectations. The standardized process is expected to be developed and rolled out in the very near future.

## Management Process

Thaioil has committed to continually assess and develop Thaioil business excellence framework for the past three years in accordance with Thailand Quality Award (TQA) criteria that is based on the Malcolm Baldrige National Quality Award focusing on areas such as Leadership; Strategic Planning; Customer Focus; Measurement, Analysis and Knowledge Management; Workforce Focus; Operations Focus; and Results. We believe this work system will drive maturity of Thaioil operation toward integrated approaches that the processes are repeatable and regularly evaluated for improvement opportunity in synergy with other functions. In addition, analysis, innovation and learning organization would better our efficiency and provide us with better results in all areas of focus. In term of sustainable development, we see ISO 26000 as a guide in proactively managing our SD risk and opportunity while the Global Reporting Initiatives (GRI) is considered as a guideline for SD disclosure.

## SD Communication Program

SD Communication Program is our program to imprint sustainable development into the mindset and culture of individuals across Thaioil Group. We plan to develop and roll-out communication program to all stakeholders from the Board room to control rooms, suppliers' plants and our customers in order to allow them to appreciate the value of our sustainable development. Ultimately, Thaioil has ambition to integrate sustainable development into our POSITIVE culture through advocating, communicating, and aligning them into our leadership expectations.



# OUR GOOD CORPORATE GOVERNANCE & ETHICS





## Highlights from 2011

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**~ 90%**

of employees &  
management  
participated in  
CG E-learning module

**> 90%**

Assessment and rated "Excellence"  
for Top Corporate Governance  
Report for Listed Companies 2011  
conducted by the Thai Institute of  
Directors (IOD)

**Full 100**

score on quality of  
Annual General Meeting  
of Shareholders (AGM Checklist)  
Assessment by the SEC and  
Thai Investors Association (TIA)

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What We

## **DID IN 2011?**

- **Review and Develop CG E-Learning into the Second Revision**
- **Organize a Competition of Initiative to Improve CG from Employees**

What We

## **PLAN TO DO IN 2012?**

- + Expand the Scope of CG E-Learning to Cover Subsidiaries**
- + Apply for United Nations Global Compact**

# REACT is the Foundation in Conducting Businesses

---

At Thaioil, efficiency, reliability and integrity do not rest only pipelines and machineries, but beyond. The same way we design production line to ensure quality and timeliness of our products, we design our corporate governance to ensure the quality and timeliness of our organizational operations and individual conduct. Therefore, Thaioil believes in delivering the highest standard of corporate governance and individual conducts, to be communicated to the shareholders and society, thereby building "Trust", similar to how our high quality product generate "Loyalty" among our customers.

Corporate Governance (CG) along with High Performance Organization (HPO) and Corporate Social Responsibility (CSR) are our core sustainability principles. Our organizational governance mechanism is designed based on the philosophy that the corporate governance is what we do as a company while code of conduct is what we expect all individual representing the face of Thaioil to follow

under the principles of Responsibility, Equitable Treatment, Accountability, Creation of Long Term Value and Transparency (REACT).

Therefore, Thaioil adopts the Stock Exchange of Thailand (SET)'s Voluntary Principles on Corporate Governance for Listed Companies in Thailand, since 2006 along with the Company's Articles of Association as the building block for our CG Manual.



# How We Operate

## Board of Directors

At Thaioil, the Board of Directors is the highest governing body to provide entrepreneurial leadership to the Management Team within a framework of prudent and effective controls, which enables risk to be assessed and managed. As leadership is arguably the most important factor for a company to reach the desirable goal, effectiveness of the company highest leadership is scrutinized by shareholders to ensure their interests are met. Thaioil, therefore, ensure the effectiveness of the Board through diversity, clear expectation for each Director and company secretary, adequate information to support decision making, periodic evaluation of the Board performance, remuneration, communication and succession planning.

According to the principle of check and balance, the current position of Chairman of the Board and Chief Executive Officer (CEO) is separated. There are committees under the Board who are responsible for specific issues, such as the Audit Committee, the Nomination and Remuneration Committee, the Risk Management Committee and the Corporate Governance Committee. In addition, specific number of independent directors for each committee is required to ensure transparency. The Audit Committee, Nomination and Remuneration Committee and Corporate Governance Committee require independent directors to make up a majority. Definition of independent director is provided in the Manual.

## Diversity of the Board

Diversity of the Board plays an important role in identifying and understanding risks in different angles and ensuring that a Board is not comprised solely of like minded individuals. Thaioil's corporate governance policy requires the Board to comprise of Directors with diverse background, in areas such as industrial, business, finance, management, international marketing, strategy, crisis preparation and response, legal and corporate governance. The Nomination and Remuneration Committee is responsible for selecting the qualified person according to these aforementioned criteria. The current Board consists of nine independent directors, three non-executive directors and one executive director.

In 2011, the Board met nine times and two independent director meetings were held to openly discuss matters related to improving the Company's Corporate Governance. Thaioil succeeded in achieving the Excellent Level from the CG Rating campaign conducted by the Thai Institute of Directors (IOD) in conjunction with the Stock Exchange of Thailand (SET) and the Securities and Exchange Commission (SEC).

## Remuneration of Directors

Remuneration is linked to the director's performance and responsibility as well as the company's performance and benefits to the shareholders. Performance of the Director is assessed in three steps: self assessment, board assessment and peer assessment on Board policy, Board composition, Board meeting and Board practices. The overall Board assessment in 2011 is in the level of excellence for the score of 95%. The Nomination and Remuneration Committee is responsible for identifying remuneration principles and methods, in which must be presented at the Annual General Meeting of Shareholders (AGM) for approval.

For the CEO, the performance assessment is conducted by Nomination and Remuneration Committee for the categories of achievement of Corporate Key Performance Indicators (Corporate KPI), leadership competency and efficiency of budget and project management. The concept of Balance Scorecard (BSC) is adopted where the indicators cover economic, social and environment aspects. These results must be presented to the Board for approval.

## Externally-Facilitated Board Evaluations

Thaioil has been involved in the bi-annual program of the Thai Institute of Directors (IOD) called the Board of the Year Award which evaluates the Board in the areas of policy, performance, structure, guidance, meetings and composition. The evaluation is conducted based on interviews with the Directors of the Board, response to their questionnaire, and review of supporting documents. Thaioil considers this as an opportunity to subject the Board to an independent external review for effectiveness. Thaioil was awarded the Board of the Year Award in 2008/2009 and the Top Corporate Governance Report Award in 2010. In addition, Thaioil was awarded the Board of the Year Award in 2010/2011 in the category of Board with Consistent Best Practices, Board of the Year for Distinctive Practices and Audit Committee of the Year. This demonstrates our consistency in corporate governance mechanism.



The Board of the Year Award 2008/2009



The Board of the Year Award 2010/2011  
(continous)



Top Corporate Governance Report  
Award 2010



## Organizations to Drive Sustainable Development

Corporate Governance Committee holds the highest responsibility for sustainability management in Thaioil Group, while the Sustainability Steering Committee is accountable for the direction of the Company. The Corporate Affairs Assistant Managing Director chairs the Sustainability Steering Committee which is composed of relevant department managers, while the Strategic Planning Manager acts as the Committee's secretary. To ensure the sustainability endeavours in line with the direction is effectively deployed, the SD Taskforce is established, chaired by the Strategic Planning Manager and composed of section heads of the relevant function.

### Risk Management

Risk management is one of the internal control mechanisms of Thaioil under the corporate governance system. The highest body to oversee risk management of the Thaioil Group is the Risk Management Committee. The internal Risk Management Steering Committee reports to the Risk Management Committee and composed of high-level management, responsible to drive the risk management effort of Thaioil Group to achieve greater efficiency in all activities and to support the embedment of risk management into daily work and corporate culture. The Steering Committee is also responsible for providing recommendation, monitor progress, and endorse the risk and control measures. Multiple risk management committees exist for each business area such as marketing, refinery, strategic planning and business development, finance, corporate affairs and affiliates.

At Thaioil, each development has to assess risk of their own scope of work. If the risk is identified to exceed the ability of the function to control or manage it, the identified risk will be forwarded to the Risk Management Committee of each respective business area and considered as corporate risk. Management Information System with user friendly interface is used for facilitating the risk management processes for all functions before sending the result to the Risk Management Section.

In order to streamline the risk management process, Thaioil Group has developed the Enterprise Risk Management Manual which outlines the process for a multi-dimensional risk management process. Ernst & Young Corporate Services Limited was engaged to conduct an independent assessment on the quality of the risk management process and manual. We scored 88% in the independent assessment in 2010.

Environmental and social risks are also included in the risk management process and the Risk Management Committee from each business area could raise the environmental and social risks up to the Risk Management Steering Committee. For example, uncertainty of government regulation was raised through the Corporate Risk Management Committee and included in Thaioil Risk Matrix.

## The Test of The Flood Crisis

In 2011, the flooding crisis impacted Thailand for more than three months and resulted in business discontinuity of many factories and companies. Although Thaioil Group's major operations are not located in the flood areas, indirect impact from the flood was still felt as transportation route and other petroleum terminals were impacted by the flood. We take pride in the fact that although our headquarter in Bangkok was impacted by the flood, our operations managed to continued as usual.

Some may call it luck, but we believe in preparation and response. We had begun monitoring the flood situation since the flood hit the northern part of Thailand and more closely when it reached the Central part of Thailand in August. During the time, we analyzed and prepared measures to prevent supply shortage and impact products distribution. Due to the closure of several petroleum terminals, we distributed products for additional 2-3 million liters per day via our lorry loading. This ensured our customers that, when they need it the most, the products were continuously supplied. We also established a temporary office at Sriracha area when our headquarter was hit by the flood and allowed employees to work at home. We consider this crisis as a test of our Company's preparedness and response plan, and we believe we successfully passed the test as no business discontinuity occurred. We will continue to review and update our crisis management plan to ensure our readiness to face the future world of more uncertainties.



# How We Do Business

Thaioil Group expects nothing less than the highest ethical standard from every person in conducting our business. This bold statement is why we strive to be a good corporate citizenship in everywhere we operate. Therefore, our code of conduct has been developed as one of the internal control for our corporate governance system. All individuals including the Directors, Executives, Management and Thaioil Group employees are expected to abide to the code.

Multiple practices including the Principles of Good Corporate Governance for Listed Companies developed by the Stock Exchange of Thailand in 2006 are used to implement in code of conduct for Thaioil Group. The code of conduct is separated into code of conduct for staff, code of conduct to the stakeholders and other codes of conducts for specific topic, including laws and human rights; cultures, customs, and political neutrality; conflicts of interest, connected transactions, confidential and inside information; giving or acceptance of presents; marketing communication; intellectual properties, information and communication technology and other important policies. In addition, disciplinary approach in case of any breach of the code of conduct including anti-corruption and bribery policy and guidance for determination of action are also provided in the Manual.

# Fight Against Corruption

In 2010, Thailand marked its move against corruption in forming an opinion survey of private sector leaders on Anti-Corruption Collective Action developed by the Thai Institute of Director, jointly conducted with the Thai Chamber of Commerce, the Joint Foreign Chambers of Commerce in Thailand, the Thai Listed Companies Association, and the Thai Bankers Association. The coalition seeks to involve all public and private sector partners, the oversight agencies, and all parts of the Thai society. Believing that corruption in all forms is a handicap for our business growth toward sustainability, we took part in the "Collective Action Coalition Against Corruption for Private Sectors" in that same year. We consider corruption and bribery as imminent risks of all businesses and we included anti-corruption and bribery policies into our CG Manual and Code of Conduct Handbook. These policies include no political contribution of any kind, conflicted interests, connected transactions, giving and receiving gifts, etc.

In fighting against corruption, we strictly comply with legal requirements on the environment safety, labor, tax and accounting, as well as government announcements. Employees at every level must study and understand the applicable laws to their work and never violate such laws. We instill compliance to laws, rules, and regulations in employees at every level.



To communicate the code of conduct, we distributed CG manuals and code of conduct handbooks to Thaioil Group's employees. Every person has to sign the acknowledge form and send it back to Corporate Management Office to keep record.

We also developed CG E-learning, an online training program with contents encompassing key elements of the code of business ethics to ensure proper guidelines for employees. The program consists of the essences of the CG manual and the code of conduct handbook featuring principles for corporate governance and code of ethics, case studies, and test forms. Employees are encouraged to learned CG E-learning to check their level of understandings. To date, there are more than 90% of the employees have undergone this training. In 2012, we will expand CG E-learning to our subsidiaries.

In 2011, we issued a handbook on the standard and guidelines for social responsibility of industrial operators in Thaioil Group's supply chain. We also staged a workshop with contractors and suppliers. To encourage other contractors and suppliers, we awarded ten contractors and suppliers with the best standand with the "CSR in Supply Chain" certification letters. To coincide with Thaioil's 50<sup>th</sup> anniversary of business, we have initiated a project for the construction of Emergency Building at Ao Udom Hospital to support and improve communities around the refinery.

For environmental, health and safety dimension, we have defined a quality, health, safety, and environment policy, a social responsible policy, and comply with all laws, standards, and other regulations relating to this dimension. In dealing with quality, occupation health, safety, and the environment, we have included an integrated management system (ISO 9001/ISO 14001/TIS 18001/BS OHSAS 18001) and laboratory capability management system (ISO/IEC 17025) in our work processes. This year, we successfully underwent an audit by Management System Certification Institute (Thailand) for our integrated management systems and another by Thai Industrial Standards Institute of its laboratory capability management system. Both audits showed no defects leading to non-conformity.



# How We Ensure

Internal audit and whistle-blowing mechanism are the core processes of verifying our internal control mechanism. We have an internal audit function to conduct internal audit based on the risk of each business. The audit areas include internal control, regulatory compliance, and financial report. Internal audit plan has to be approved by the Audit Committee. The audit results will be reported to the Committee at least quarterly. The approved findings are then communicated back to the whistle-blower for tracking, and consequently lead to gap closure processes. We also visit our suppliers and contractors to help them implement our supplier and contractor standards as part of our CSR supply chain program.

We provide whistle-blowing mechanism including the whistle blowing measures and whistle-blower protection mechanisms to ensure fair treatment for all stakeholders under the CG principles, the company set up channels for complaints, suggestions, or recommendations indicating impacts or risks of impacts on stakeholders arising from its business or any wrongful action or violation against the code of conduct, as well as implying corruption and unfair treatment, while assuring confidentiality of the whistle-blower. These channels can be seen in the company's annual report, CG manual, code of conduct handbook, as well as website ([www.thaioilgroup.com](http://www.thaioilgroup.com)). In 2011, there is no report on such violations in breaching our code of conduct. In addition, there is also no report of breach against regulations concerning environment; anti-competitive behavior, anti-trust, and monopoly practices; health and safety impacts of products and services; disclosure of information; marketing communications; and provision and use of products and services.

As our mission to strive toward in the leading refining and petrochemical business in Asia Pacific Region, we aim to provide ethical-balance between each group of stakeholders and related organizations alike. We plan to endorse the UNGC in 2012 and review our Corporate Governance Manual by 2013 to ensure that our corporate governance is up-to-date and ready to support our way of conducting business in the international arena.

## United Nations Global Compact (UNGC)

The United Nations Global Compact is a strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labor, environment and anti-corruption. Since its official launch in 2000, the initiative has grown to more than 8,000 participants, including over 6,000 businesses in 135 countries around the world. As one of the UNGC commitment is the company to have Communication on Progress (CoP) on the commitments in the ten principle, our 2012 Sustainability Report is expected to be the first CoP to communicate our commitment and progress in addressing the ten principles by Thaioil.



## HIGHLIGHTS FROM 2011

**24** million

liters reduction of fuel use  
from energy efficiency  
and loss prevention

**60,000** tons

reduction of carbon dioxide  
from reduction of fuel use and  
hydrocarbon loss

**13.16** million

man-hours without  
Lost Time Injury (LTI) for  
both employee and contractor



What We

## DID IN 2011?

- Mapped our 5-Year Environmental Master Plan
- Developed 5-Year OHS and Fire Roadmap
- Conducted Soil and Groundwater Quality Analysis at All Major Operations
- Structured Framework for GHG Inventory
- Integrated and Standardized the Management of Occupational Health, Safety, Fire Protection and Emergency Response into the Single OHS and Fire Process in Sriracha
- Conducted Random Internal Assessment of Safety Leadership Level

What We

## PLAN TO DO IN 2012?

- Initiate Action Plan According to 5-Year Environmental Master Plan
  - Progress to the 2nd Phase of Soil and Groundwater Quality Project
  - Improve the Wastewater Treatment System to Increase Recycling Water
  - Conduct Feasibility Studies for Carbon Reduction
  - Develop a Business Continuity Plan that Leverages on the Emergency in Sriracha
- Roll-out Action Plan According to 5-Year OHS Roadmap
  - Conduct Group-wide Internal Assessment of Safety Leadership Level

# Environmental Management for Excellence

**We strive to be a leading organization in environmental management through continuous performance improvement and involvement of internal and external stakeholders in our program**

As the nature of refinery and petrochemical industry, we realize that our operations could cause impacts to the environment if not managed properly. Therefore, Thaioil has always operated in compliance with law and regulations or beyond. In addition, we have developed Thaioil Group Environmental Master Plan and constructing soil and groundwater baseline information at our major operations in preparation for the change for the future which more stringent law and regulations are expected.

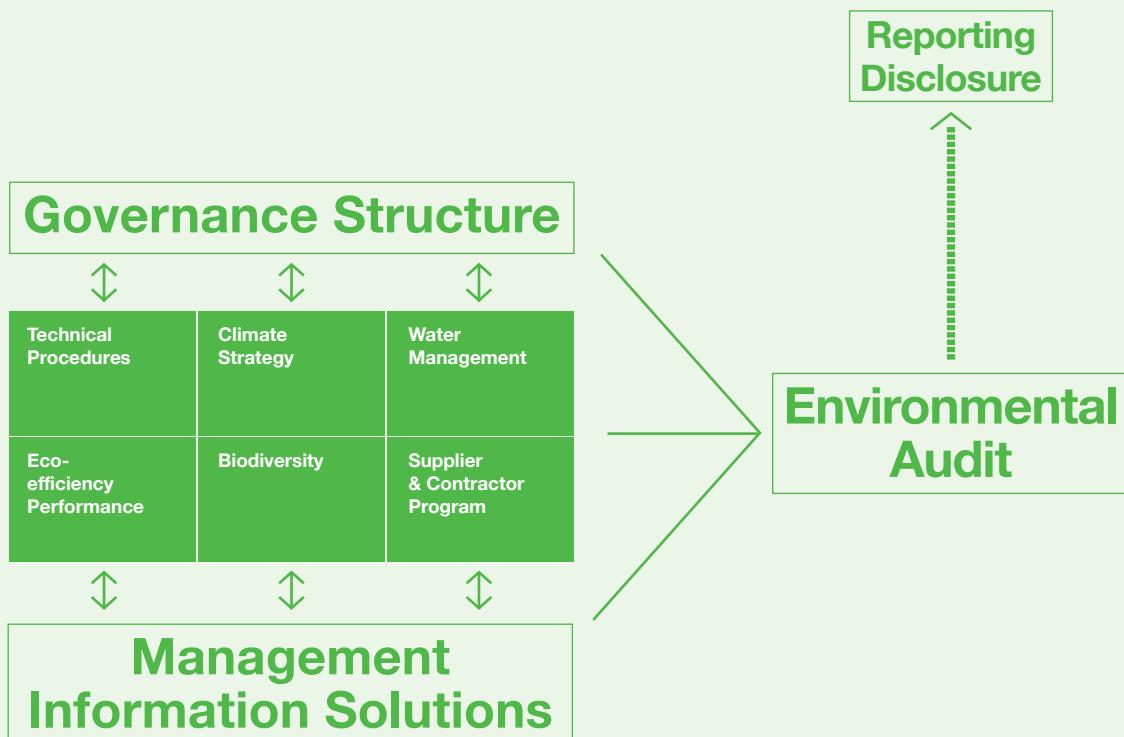
At Thaioil, we have in place our ISO 14001 environmental management systems certified by a third-party at all of our major operations which they share the common environmental, health and safety policy. The management system provides the backbone for our environmental management including managing compliance and defining objectives and targets in accordance with our Thaioil Group Environmental Master Plan. This is expected to prevent potential impacts from our activities, such as air emissions, effluent and spills to biodiversity and communities. We have our share service of environmental professionals at our major operations to provide a level of consistency of environmental management.

Our ongoing 6-monthly environmental monitoring program conducted by a third-party is also providing another level of assurance that no significant impact from our operation to the environment and local communities.

Apart from our shared operational environmental function, we have the corporate function to provide support on environmental regulation tracking and update. In addition, the corporate function is responsible for managing environmental permits including environmental impact assessment and environmental monitoring reports to the government with the involvement from the operational environmental function.

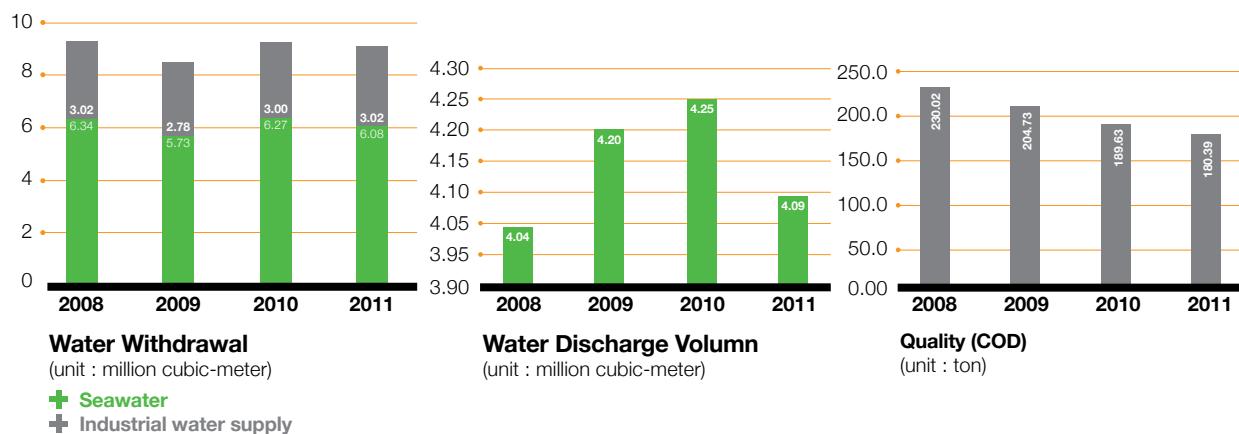
# The Thaioil Group Environmental Master Plan

As the environment has been rapidly changed in both of the global and local scale and in term of physical and regulatory, Thaioil realizes that managing day-to-day environmental issues are not adequate for the sustainability of the company anymore. It is time for Thaioil to look into a crystal ball and prepare for the future challenges in the dimension of environment. Therefore, Thaioil Group Environmental Master Plan was formulated through a consultation with relevant stakeholders including regulators, communities, internal environmental personnel and management on key environmental challenges. In addition to the stakeholder consultation, benchmarking on environmental management practice and identification of oversee best practice resulting in the Environmental Master Plan. After the company has a goal to be listed in Dow Jones Sustainability Indexes (DJSI), this Environmental Master Plan has been shaped to support the Company's goal which includes the nine areas as the following figure.



Thaioil is in the process of rolling-out the Master Plan which the progress is expected to be included in 2012 Sustainability Report.

Environmental performance is emerging to be the focus area of stakeholders to see environmental footprint that the company left on the planet. Thaioil is in the process to improve our data collection and develop our environmental performance targets for key emissions to track, control and disclose our environmental performances to interested parties.



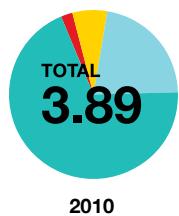
Thaioil has two sources of water supply including seawater and industrial water. Raw water from these two sources is channeled to all our operations in Sriracha District which includes the refinery, petrochemical plant, lube base plant and power plants. Our water supplier, EastWater withdraws water from the Bang-pra and Nong-kor Reservoirs into Thaioil's raw water reservoir. Our total water withdrawal reduced by approximately 2% from 9.28 million cubic meters in 2010 to 9.10 million cubic meters in 2011 due to our initiative to reduce water consumption by increasing the cycle of blowdown water from the cooling system.

Water from our operations is discharged to the ocean after it is treated to meet or exceed Thai legal requirements. We ensure that water is thoroughly treated and analyzed prior to discharge off-site. In 2011, as a result of increasing in reuse and recycling of water, we managed to decrease the total volume of water discharge by approximately 160,000 cubic meters (3.8%) as compared to 2010.

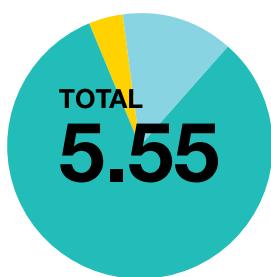
COD (Chemical Oxygen Demand) indicates a degree of pollution in wastewater by organic compounds. In absolute term, our discharge trend of COD is continuous decreasing from 2008 to 2011. In addition, we have signed an MOU with Chulalongkorn University in a collaborative study on the use of algae to improve the quality of wastewater effluent. We will communicate the progress of this effort in the near future.

**Total Hazardous Waste Disposal**

(unit: thousand ton)



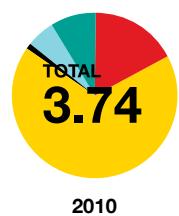
■ 0.85 Recycling  
 ■ 2.70 Recovery  
     (including energy  
     recovery)  
 ■ 0.08 Incineration  
 ■ 0.26 Landfill



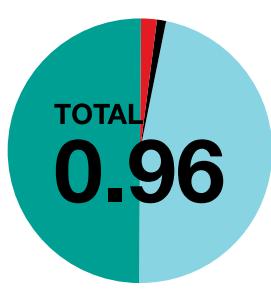
■ 0.76 Recycling  
 ■ 4.57 Recovery  
     (including energy  
     recovery)  
 ■ 0.00 Incineration  
 ■ 0.22 Landfill

**Total Non-Hazardous Waste Disposal**

(unit: thousand ton)



■ 0.64 Recycling  
 ■ 2.54 Composting  
 ■ 0.02 Recovery  
     (including energy  
     recovery)  
 ■ 0.20 Landfill  
 ■ 0.34 Land Reclamation

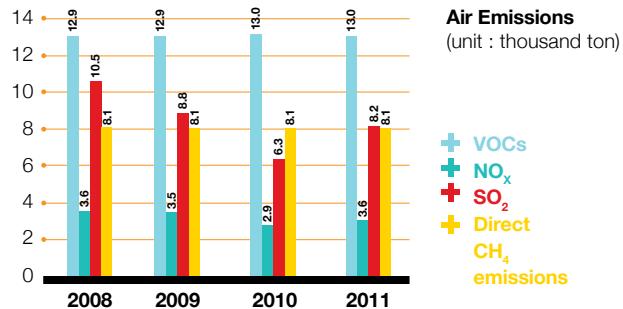


■ 0.02 Recycling  
 ■ 0.00 Composting  
 ■ 0.01 Recovery  
     (including energy  
     recovery)  
 ■ 0.45 Landfill  
 ■ 0.48 Land Reclamation

At Thaioil, we have a dedicated Waste Management Committee that monitors the refinery's waste from generation to the proper treatment and disposal according to regulations. The principle of 3Rs: Reduce, Reuse, and Recycle has long been integrated into our consideration for waste management. The total volume of hazardous waste generated in 2011 was 5.55 thousand tons, which was increasing from 3.89 in 2010 due to retention ponds cleaning that produced contaminated soil and sandstone.

Our preferred disposal method is recovering (including energy recovery) that accounted for 82% of our total hazardous waste in 2011. Our recovery waste steam was used as fuel substitution or burn for energy recovery, fuel blending or co-material in cement kiln which includes oily sludge, spent activated carbon, copper slag, ceramic ball and spent catalyst. The other methods were recycling and landfilling accounting for 14% and 4% respectively. It should be noted that no hazardous waste was sent for incinerating in 2011.

We manage our non-hazardous waste just as firmly as we manage our hazardous waste. Generation and disposal is monitored, and measures are taken to salvage from the waste steam all that can be recycled or recovered before final disposal is considered. In 2011, a total 0.96 of Non-hazardous waste was generated. This was a 20% decreasing from the figure in 2010.



Thaioil operating condition has no significant change during 2008-2011. As the result, our emission data calculating by using Shell Group HSE Performance Monitoring and External Reporting Guide 2004 has no significant difference except SO<sub>2</sub> emission in 2010 which the choice of fuel was the main factor.

In 2011, all environmental monitoring data; including ambient air, stack emissions, noise, and wastewater complied with the regulatory limits; and there was no fine and/or non-monetary sanction with regard to environmental laws and regulations. Further, there was no environmental incident in 2011 with the potential to impact the environment for example spillage, leakage, and explosion. We have measures in place to minimize the possibility of any such incident from occurring, and established procedures for emergency.

## Soil & Groundwater at Our Home

To fully understanding the environment where our major operations located and prevent future liability regarding soil and groundwater, Thaioil has conducted soil and groundwater study to construct the baseline in the area of 13.52 square kilometers covering area of our major operations in Sriracha and communities nearby. The study focuses on potential contaminants those relevant to refinery and petrochemical operations such as hydrocarbon compounds. Risk assessment for activities was conducted to identify the appropriated location for the sampling wells. As the results, there were eight wells constructed in addition to the existing seven monitoring wells for the total of 15 wells for groundwater samplings. Thaioil also took soil sampling from 10 locations within our operating sites. There was no indication of VOCs contamination in soil and groundwater that could be the consequence from our activities at all sampling locations.

As our goals to go further into the regional arena which our operation area could be located oversea, we aim to conduct our environmental management at the same standards wherever we operate. Therefore, we will leverage good practice and use lesson learned from our major operations in Sriracha to use in other areas. Ultimately, we would like our environmental brand to be seen as a responsible company in environmental management.

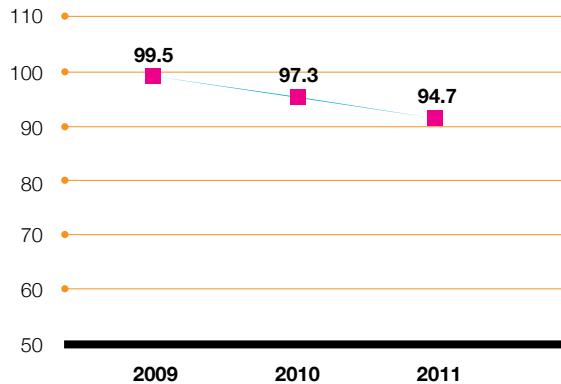
# Climate Change Mitigation & Adaptation

**As our majority of Thaioil greenhouse gas emissions from our activities come from fuel combustion, Thaioil approaches to reduce greenhouse as is through energy efficiency**

Global warming has become more challenging and real than ever before, this issue, indeed, pose risks to our business operations, particularly, of which is related to energy consumption. At Thaioil, we have developed continuous initiatives to reduce our greenhouse gas emissions through as energy efficiency in the production line with numbers of efficiency improvement programs as Thaioil founded a strong principle of efficiency. Our Energy Management and Loss Improvement Committee (E&L Committee) functions to monitors our energy consumption and manages its loss. We also have a program to minimize impact from climate change on our water resource which including forecasting, planning and reducing water use. As for a longer term concern of climate change, we plan to develop our strategy in response to climate change which includes reduction of our greenhouse gas emission from our activities and preparation for the impact from climate change in term of regulatory, policy and physically.

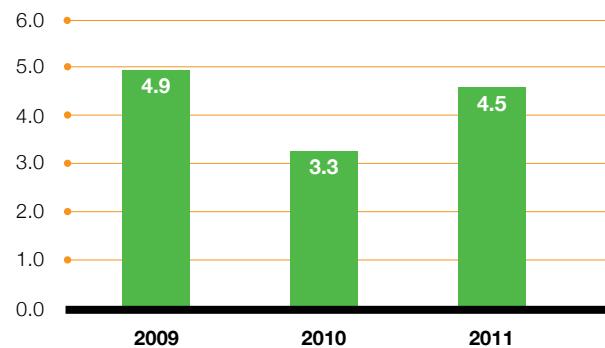
With the looming threat of global warming, climate change is a challenge that we face as citizens of the world. As we move forward to realizing our aspiration to become a leading company in the Region, it is only necessary that we demonstrate exemplary efforts in mitigating climate change. We had begun taking measures in this regard in 2009, and over time we have developed continuous initiatives to reduce our greenhouse gas emissions from our activities such as energy efficiency in our production line because of most of the operating expenses in the production processes (excluding raw material costs) are energy and fuel costs. We see this approach as the win-win opportunity for environment, society and our business. At Thaioil, we have an Energy Management and Loss Improvement Committee (E&L Committee) that monitors our energy consumption and manages its losses. The committee consists of 39 representatives and is led by technology department manager.

The following figures show our performance in terms of energy consumption and GHG emissions. The GHG data presented in this report was calculated using the Shell Group HSE Performance Monitoring and External Reporting Guide 2004. We accounted for our direct GHG emissions in determining our 2011 greenhouse gas emissions from our activities. However efforts are currently being made to develop a more in-depth GHG inventory to cover other indirect emissions such as employee commuting, product use and employee transportation emissions. In this regard, we are planning to report such emissions in the near future. It should be noted that the performance data of energy use and GHG are from the period of 2009-2011 because the data collection process for energy usage was roll-out operation by operation which the coverage included all our major operations in 2009. Therefore, our data on energy consumption of all major operations before 2009 is not on the same basis. We will continuously report our energy consumption from 2009 onward.



#### Corrected Energy & Hydrocarbon Loss (CEL) Index

Direct energy is energy that is derived from sources owned and controlled by Thaioil and its subsidiaries. This includes the energy generated from the combustion of various fuel types at our plants including natural gas, LPG, fuel gas, bunker oil and diesel. Our Corrected Energy & Hydrocarbon Loss Index is continuously decreasing from 99.5 in 2009 to 97.3 in 2010 and 94.7 in 2011 demonstrating our increasing in energy and hydrocarbon loss efficiency. However, it is a fact that our absolute direct energy usage does not totally reflect our energy efficiency since different products results in different energy required. Therefore, our direct energy usage in 2011 was about 10,000 MM GJ increasing from 9,000 MM GJ in 2010 due to changing in type of product produced and the processing of light crude oil type which require higher energy in comparison.



#### Direct Greenhouse Gas Emissions

(unit: million ton)

Direct GHG emissions (also known as Scope 1 emissions) are GHG emissions from sources owned and controlled by Thaioil and its subsidiaries. This includes emissions from the combustion of fuels in our stationary source. In 2011, our total direct GHG emissions rose by approximately 1.2 million tons of CO<sub>2</sub> equivalent (tCO<sub>2</sub>e), or 37.05% as compared to 2010. The increase was very much due to our changing of fuel source but it was still lower than 2009 GHG emissions even we had higher production in 2011.

Indirect energy is purchased energy. The use of such energy is considered 'indirect' as it is sourced at the power plant or at the relevant site that is providing the energy, rather than at our own site. At Thaioil, we normally use electricity and steam from our own operations (TP) which the indirect energy use at our refinery and operations in the same area is not included in this report to avoid double counting. We bought electricity only when our power plants were shutdowns which were about 10,000 times lower than our direct energy used. Therefore, it is not material to report our indirect energy use and indirect greenhouse gas emissions from our major operations.

## Energy Efficiency and Hydrocarbon Loss

At Thaioil, we build our strong foundation on the principles of efficiency, reliability and flexibility of our operation and natural resources use including energy. We have set our goal to be in the first quartile of the refining performance benchmarking among the Asia-Pacific refineries group, which has been undertaken every two years by Solomon Associates. To achieve this goal, the Company has established the 5-year energy roadmap as the Company Energy Master Plan for effective implementation. In addition, Thaioil introduced Hydrocarbon Management System to reduce hydrocarbon loss while increasing energy efficiency. Some important indicators that demonstrate our excellence in energy and hydrocarbon loss management are:

### Ocean Loss Index:

This indicator shows the controlling of ocean loss which reflects the Company's operating expense.

### Corrected Energy and Loss Index (CEL):

CEL index consists of energy index and loss index which is assessed by comparing the actual energy consumption and hydrocarbon loss incurred with the corresponding theoretical allowance. This performance indicator has been included as a Corporate KPI.

### Operating Expense:

The operating expense mainly comprises energy consumption, hydrocarbon loss and maintenance cost. When compared our operating expense to other refineries' in the Asia-Pacific Region, Thaioil was categorized in the first quartile of the benchmarking done by Solomon Associates.

## Energy Saved due to Efficiency Improvement and Conservation

In 2011, we set the new bar for energy and hydrocarbon loss index as we operated in the highest efficiency condition in the past 50 years since the day the refinery has been start commissioning. Thaioil focus our efforts in controlling CEL index not to exceed 98 which the results of our hardworking and support from senior management payoff as our CEL index was 94.7. This achievement was met due to our equipment installation and retrofitting including energy conservation through change in operating conditions and practices as follows

### Equipment Installation and Retrofitting

- Heater insulation improvement
- Insulation installation at steam pipeline
- Changing in heater convection section
- Installation of low NOx burners
- Installation of fogging system in gas turbine electric generator
- Utility optimizer for energy production units

### Energy Conservations

- Reducing the use of bunker oil for the use of cleaner energy, for example natural gas as a replacement
- Improving advanced process control and introduced real time optimizer at fractionating tower
- Reducing pressure at fractionating tower to reduce energy use
- Reducing steam usage at Hydrogen Manufacturing unit
- Reducing atomizing steam usage at Fluid Catalytic Cracking Unit
- Cleaning of heating equipment
- Reducing blow-down from boilers
- Inspecting and adjusting oxygen into the furnace
- Reviewing and adjusting fuel usage in each furnace

The results from above initiatives help Thaioil saves 18 Megawatts of energy that is equivalent to 14,000 tons fuel per year or 35,000 tons of carbon dioxide emission reduction in 2011. In addition, it also provides more reliability for the production.

### Hydrocarbon Saved due to Hydrocarbon Management

Efficiency of input material use is another area of our focus which we also set a target for refinery loss and numbers of initiatives to reduce hydrocarbon loss including

- Installation of crude online sampler to take crude oil sample from a marine tanker automatically
- Improvement in crude oil washing in a marine tanker to reduce the leftover crude oil
- Improvement in surveyor procedure to be in line with international standards
- Introducing random inspection of staffs practice on discharging crude oil from crude cargo to storage tanks whether it is in line with the procedure and international standards

Thaioil is able to reduce hydrocarbon loss of 10,000 tons in 2011 which is equivalent to 25,000 tons of carbon dioxide equivalent.

We also have initiatives to reduce energy use and hydrocarbon loss at the stage of feasibility study and engineering design in the area of cleaner fuels usage, heat and vapor recovery and installation of equipment and retrofitting to continue our success in energy and loss management and contribute to greenhouse gas emissions reduction.

### Climate Change Adaptation

Right now, there are more and more evidences of the changing world through uncharacteristic of natural disaster which climate change arguably be one of the causes. Therefore, Thaioil is aware that to be in business for the next 50 years has to be able to adapt for the more rapid change to come. In addition, we use our enterprise risk management to identify, assess and manage risk regarding to the climate change. In 2011, climate change is illustrated as one of the factors contributing for the risk of water shortage. This risk is identified as in the acceptable level due to our ability to manage the issue in the area. However, water situation has been closely monitored by responsible person.

## Water Management For Our Operations

Even refinery and petrochemical industry requires less water withdrawal comparing to food industry, Thaioil has developed annual water management plan in place for more than 5 years. Thaioil's major operations in Sriracha acquire industrial raw water from 2 reservoirs: Bang-pra and Nong-kor through East Water, our water supplier. Seawater is also another source of our water which 6 seawater desalination units are installed.

Thaioil has comprehensive water management plan to ensure adequate water for our operation. Risk regarding water shortage is identified. In case of the crisis, we have an annual water crisis preparation that is taking current water demand (for both normal operation and crisis situation), weather forecast and raining forecast into account. Therefore, our response strategy is around the concept of

**Reduce** industrial water supply through setting water consumption target in refining process and maintenance of seawater desalination units to be able to make-up the shortage of industrial supply water

**Reuse and Recycle** cooling water for cleaning and watering trees and improving recycle rate of cooling water

**Replace** the existing water supply sources through conveying raw water from other sources by ships in case of emergency

Thaioil never experience water shortage that effects our operation before. In addition, we have community affairs team to regularly engage to monitor the issues of local communities around our operation that preventing conflict regarding water use in the area.

Climate change is having larger role in business world right now and it is expected to have increasing roll in the near future. Thaioil will assess the situation and prepare for the adaptation to the changing in physical and legal operating and business environment. Meanwhile, we will continuously put our effort to mitigation climate change through energy efficiency which helps reducing the level of greenhouse gas emitted. As we aim to develop our strategy in preparation for the future challenges in climate change which is expected to be completed in the near future.

## Integrated Thaioil Occupational Health & Safety System

**Nothing less than the finest level of occupational health and safety in the company is our aspiration to sustain Thaioil first class position of occupational health and safety in petroleum industry**

Thaioil's first and foremost priority is placed on occupational health and safety of our employees, communities and contractors. We successfully aligned the management system of occupational health and safety across all our operations, established functions to control and monitor performance. Thaioil has incorporated safety aspect into our key performance indicators as a means to instill consciousness into our people whilst our recording, tracking and reporting on safety performance remains an important channel in charting our progress. We will continue to improve our occupational health and safety program in order to maintain our leading position and driving forward to the regional champion.

At Thaioil, occupational health and safety of our employees, communities, contractors and assets are considered as the first and foremost priority. We have a proud tradition of sustaining excellence occupational health and safety performance which was arguably exceeding peers in Thailand. However, we understand we could not sustain the leading position if we do not drive ourselves to the next level as others are improving themselves. Therefore, we have developed the 5-year Occupational Health, Safety and Fire Prevention (OHS & Fire) Roadmap as our agenda to move into the next level.

## Management of Occupational Health and Safety

In 2011, we successfully aligned the Occupational Health and Safety management system across all our operations, including at Sriracha, to establish consistency in the overall management of occupational health, safety, fire prevention and emergency response in our major operations. In this regard, we have dedicated functions to control and drive performance in all aspects related to occupational health and safety. In addition to the dedicated function, we have a joint-management employee occupational health and safety committee that comprises of workforce representative of at least 50% (excluding the Chairman). The committee holds a meeting at least once a month to keep everyone updated on recent incidents, the progress of things, and on upcoming plans.

In 2011, we have also started to incorporate key performance indicators in the areas of occupational health and safety and fire prevention as a means of infusing the culture and awareness into our people. To stay ahead in the fast-paced and competitive oil and gas industry, we regularly review Thaioil's management systems and procedures against world-class safety guidelines for example safety laws and regulations, safety and fire standards, communication, documentation, process safety management.

One can manage best what one can measure. With this in mind, we established a system for the recording, tracking, and reporting of our employees and contractors safety performance, incidents, and potential incidents (unsafe act, unsafe condition and near-miss). The following table shows the rates of Total Recordable Case Frequency (TRCF), Lost Time Injuries Frequency (LTIF) recorded between 2008 and 2011.

	Total Reportable Case Frequency*#				Lost Time Injuries Frequency*			
	2008	2009	2010	2011	2008	2009	2010	2011
<b>Employee</b>	0.57	0.00	0.54	0.55	0	0	0	0
<b>Contractor</b>	1.23	0.97	0.63	0.55	0.00	0.39	0.00	0.14

\* The TRCF and LTIF were calculated using  $(x / \text{Total Hours Worked in a Given Year}) \times 1,000,000$  Work Hours; where  $x$  is the total number of injury/lost workday case in a given year.

# Minor (first-aid level) injuries were excluded in the injury rate data

There are no evidence of occupational health cases occur during the past 50 years, The health risk assessment has been developed recently. To further improve on our safety and health awareness, we widened our scope to include keeping track of incidents occurring in other refining and petrochemical companies globally, to develop prevention and/or control measures from lessons learned.

## Improvement Initiatives

In 2011, we have integrated and standardized the management of occupational health, safety, fire protection and emergency response into the single OHS & Fire process in Sriracha for example e-permit, accident/incident report online (OFI online), emergency response equipments and tools, emergency/ crisis management team and drills.

Over the past year, we have also incorporated OHS requirements for contractors in the supply chain management program. This includes contractor safety certification and training with real tools and equipments. Buddy system in occupational health and safety was introduced for both contractors and employees in January 2011, allowing personnel to warn each other of potential dangers, unsafe acts and/or unsafe conditions during operations. It was noted that the number of incidents/near misses reduced by 14.55% after the implementation of the buddy system

## Hearts & Minds to Develop Safety Leadership

Thaioil adopts safety leadership program from Shell to enhance safety leadership and awareness among our employees. When it comes to behavioral change, nothing beats efforts applied at the roots consciousness—we go the extra mile at Thaioil. We assess safety leadership in the 5 levels, including pathological, reactive, calculative, proactive and generative. We have randomly assessed our safety leadership level in 2011 which the result indicated that the safety leadership level was "calculative". We will expand the scope of assessment to cover all key operations in 2012.

We believe our continuous improvement in term of OHS program and performance data has a large role in our business reliability and our employee engagement. Right now we could arguably claim as one of the national champions in term of OHS management which we commit to sustain the position while moving on to the regional champion to support the future of Thaioil.

# OUR PEOPLE STORY



## HIGHLIGHTS FROM 2011

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**84** hours

of employee training  
per year per person

**100%** of

our employees have career  
development plan

**~98%** of

our employees participate in our  
annual employee satisfaction &  
engagement survey

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What We

## DID IN 2011?

- Enhanced Leadership Development Program
- Aligned Performance Management System Across TOP, TLB, TPX, TES
- Connected Our Performance Management System with Personnel Database
- Improved Our Performance Appraisal System
- Improved Recruitment Process Efficiency
- Developed Soft Competency Set for Serving Business Directions and Goals
- Established and Implement TOP Group Scholarship in Five Themes
- Developed Employee Self Service & Manager Self Service (I-Link) for Appraisal Center and Training Management Integrated to Single System; SAP Platform

What We

## PLAN TO DO IN 2012?

- Launch I-Link Application to Manage Human Resources Data, Appraisal, Training Management
- Expand Career Management System and Succession Plan to Cover Every Career Paths and Companies in Thaioil Group
- Health Promotion Campaign

# Integrated Human Resources System to Support Our Growth Strategy, Culture and Employees

At Thaioil, employee readiness is one of the key challenges for our sustainability. Therefore, we define our strategy named DEAR which comes from Develop, Engage, Attract, and Retain to overcome the challenge. Our approach of development employees is constructed around our Performance Management System (PMS) that includes identifying competency gap and developing individual development plan to conducting performance appraisal. Regarding employee engagement, we believe a person will be engaged if they are proud of what they do and do what they do best which would be addressed in Thaioil PSM. We also provide the competitive salary and benefits for our employees in the area of fundamental needs, employee development, family support, work-life balance and career ending assistance. Manpower management is another challenge for us to prepare our people and attract new talents in term of number and capability to serve the existing and expanding business. We also conduct our annual employee satisfaction and engagement to understand what employees are thinking and feeling toward our organization. We take the feedback from the survey seriously and incorporate it into our employee readiness plan.

Readiness of skilled employees to serve business growth and maintain existing operation is one of the sustainability challenges in oil and gas industry and also included in Thaioil Strategic Challenge. In responding to such challenges, we have our human resources strategies to Develop, Engage, Attract and Retain (as known as DEAR) people to ensure our people readiness to serve business needs.

## Manpower Management

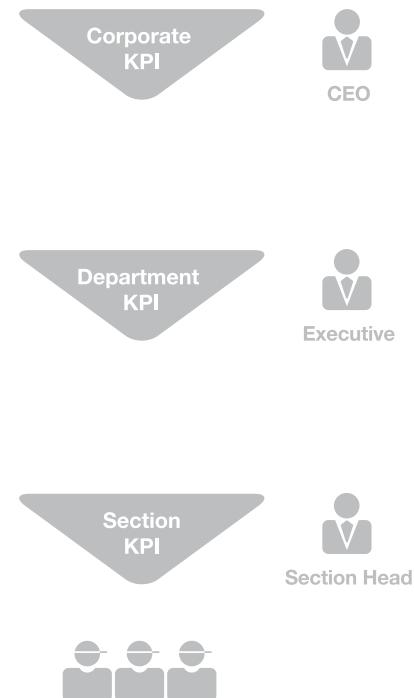
Manpower management is the first stepping stone to link people strategy with business strategy. At Thaioil, manpower planning is not only the responsibility of human resource divisions. On the other hand, it rests in every department managers and section heads to assess manpower need in accordance with organizational structure and business strategies with supports from human resource and planning department. Then, recruitment opportunities are identified in term of both number and competency. This process is repeated annually and documented in our quality management system.

At Thaioil, we are in the excited transitional period from single company to the Group of companies working together to achieve the single goal. Therefore, manpower management of Thaioil Group is about to be changed to match with the changing business landscape which employee diversity in term of age range and skills is one of the keys. Employee segmentation model is then developed to monitor and ensure execution of human resource planning.

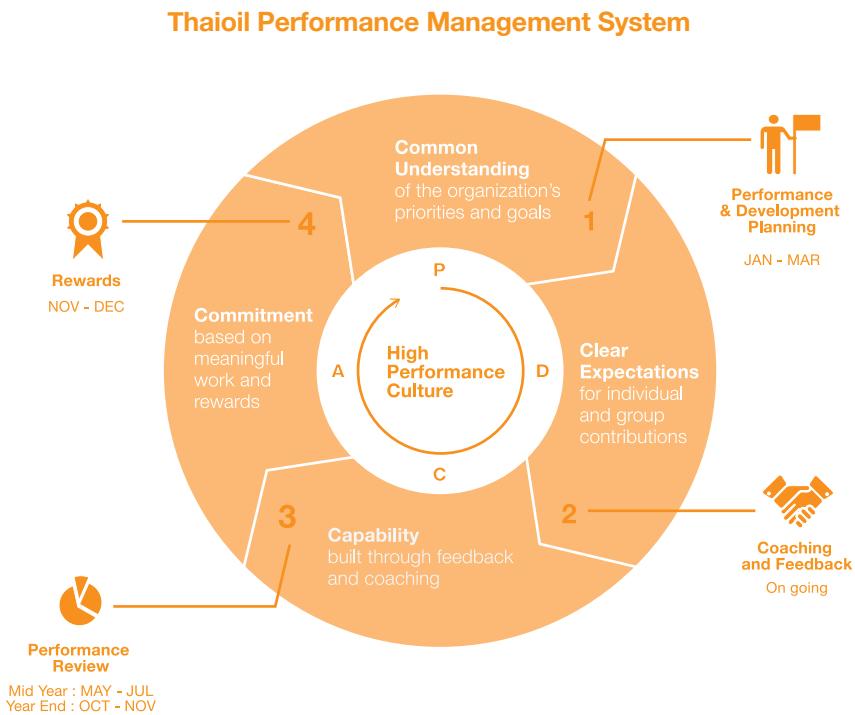
## Performance Management System

Performance Management System (PMS) is one of the core processes to align employees with Thaioil's defined priorities and goals. In addition, we believe it is the best way to keep our employees motivated and understand how they contribute to the success of Thaioil. PMS is comprehensive process that provides common understanding of the priorities and goals, clarify expectations for individual and group contributions, identify competency gap through feedback and coaching and engrave commitment based on meaningful work and reward. This process is facilitated by our Management Information System (MIS), the COACH under the SAP platform. Moreover, the I-Link program will be applied in 2012 instead of the COACH in order to manage the human resource information data more effective way.

The Corporate KPI is the starting point where it was formulated according to Balanced Scorecard (BSC) principle which covers economic, environment and social dimensions which formulated from all departments and finalized by executive team. Then it is deployed from CEO to executives, department managers, section heads and employees respectively. Each person need to set their KPI to be in line with the assigned KPI from their superior to ensure alignment throughout the organization. Supervisor will then coach and provide feedback to subordinate for their development as well as encourage them for their contributions with recognition. Employee merit and variable compensation is linked to the PMS to motivate and promote employees to focus on the corporate priorities.

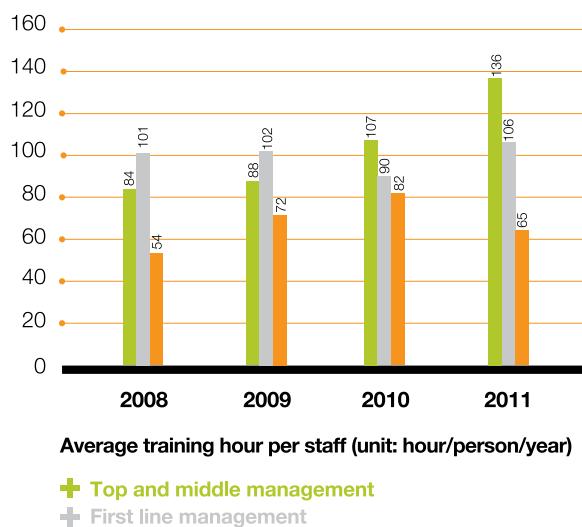


Thaioil also defines Core Competency for all career paths along with Leadership Competency to ensure all of our employees have opportunity to progress and success. Competency of all employees are assessed against the defined Core Competency and Leadership Competency to identify development opportunities which will be recorded for follow up in Individual Development Plan (IDP). The performance against KPI along with competency of all employees is assessed twice a year which influent employee's merit and variable compensation.



## Learning Organization

Apart from preparing people in term of number, preparing competency of our people to meet the demand is also critical for our success. To execute IDP, we provide numbers of channel includes scholarship, on the job training via coaching and mentoring. However, we believe knowledge management is beyond developing an individual. Therefore, we developed our knowledge management system to retain knowledge within Thaioil and share it with our employees through KM Portal, E-library and Community of Practices including best practice sharing among companies in PTT Group. In addition, we have a program to acquire the service of our retired employees to be a consultant for development of work system and work process and for educating new generation of employees.



Average training hours per staff is increasing for all level of employee for four consecutive years from 2008-2011 with an exception of non-management employee in 2011. We expect the number of average training hours per person to continuously improving to be one of the areas in organizational learning.

Also, average number of training hours for male and female in 2011 is 81 and 85 hours/person respectively which demonstrate our performance regarding commitment to equal opportunity.

# Knowledge Management at Thaioil

Thaioil developed knowledge management (KM) process under the COSSAI Model which includes 5 steps: capture, organize, store, share, apply and innovate. Representatives from all departments are assigned as KM Governance Committee to maintain KM within the organization. KM Portal acts as the facilitator of all KM processes within Thaioil, for example information sharing within community of practice and knowledge searching which every employee could access and learn. In addition, Thaioil assigns employees who decorated with experience and knowledge as the list of experts which other employees could make a contact to resolve specific issue.

## Compensation Mix & Employee Benefits

At Thaioil, we expect the best people to work for us which we believe the best people deserve the best compensation and benefits. We benchmark our position in compensation package and benefits annually with the first tier oil & gas and petrochemical companies in order to ensure our compensation and benefits are positioned in well place. All employees in equivalent level receive equivalent basic salary range and basic benefits package with no discrimination on gender, age, race, religion, etc.

We also consider our employees as family members to taken care off. Therefore, we provide employee welfare beyond legal requirements in the area of fundamental needs, employee development, family support, work-life balance and career ending assistance as provided in the following table.

Fundamental needs	Employee development	Family support	Work-life balance	Career ending assistance
<ul style="list-style-type: none"> <li>• Food for shift staffs</li> <li>• Transportation to work at the refinery</li> <li>• Medical insurance</li> <li>• Uniform</li> <li>• Residence employees at the refinery</li> </ul>	<ul style="list-style-type: none"> <li>• Schorlarship</li> <li>• Education leave</li> </ul>	<ul style="list-style-type: none"> <li>• Medical insurance for family</li> <li>• Child education allowance</li> <li>• Cremation allowance</li> </ul>	<ul style="list-style-type: none"> <li>• Employee clubs</li> <li>• Fitness center at headquarter</li> <li>• Saving and credit cooperative</li> <li>• Cosumer cooperative</li> </ul>	<ul style="list-style-type: none"> <li>• Defined benefit plan</li> <li>• Annuity</li> </ul>

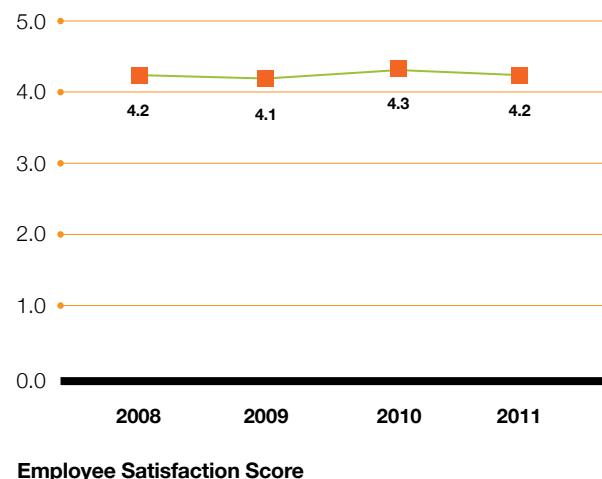
## Voice of Our Employees

Apart from commitment on Thai constitution and labor laws, we respect and listen to the voice of our employees through multiple channels. Thaioil has constructed an effective mechanism to connect management with employees by the coordination of Thaioil Union and Joint Advisory Committee (JAC), or in other words, Management-Employee Committee. All of the employee's representatives in the committee come from the Union to bridge the two parties of employees and managements. The committee has a meeting once a month to discuss any employee related matters. No incident regarding discrimination as well as issues regarding significant operational change that could substantially affect our employees comes to our attention through any channel in 2011. We are also having high portion of employee in our Union of 71%.

## Employee Satisfaction & Engagement

At Thaioil, we look beyond separated employee satisfaction and engagement to ensure we understand and response to the actual preference of our employee. Therefore, we develop Thaioil Model in 2010 which adopts factor analysis to look at the correlation of employee satisfaction and employee engagement.

In 2011, over 737 employees completed the questionnaire accounting for the excellent response rate of 97.9% (comparing to the target at 94%). The satisfaction score in 2011 was 4.2 from 5 which we aim that the score is not less than 4. The score indicate minor drop from 4.3 in 2010, however, the trend is considerably stable in 4 years. We will use the feedback to identify needed to step up our effort and to translate into action plans which will be tracked and reported progress in 2012.



## Rights of Our Employees

Thaioil commits to the principles of universal human rights as stated in the Corporate Governance Manual.

As a performance based organization, we ensure our decision on people bases on personal performance and competency. We ensure a fair treatment to all employees and contractors without discrimination based on gender, race, religion, political view or national or social origin. In addition, Thaioil is strictly in compliance with Thai laws and regulations which prohibit the use of child and forced labors and prevention of association and collective bargaining.

As we consider people is the power to drive the company to the aspiration in the next 50 years. We accept that the challenges in preparing people ready for the quick-step forward of Thaioil is not a short term fix. Looking at the other side of the mirror, this is excellent opportunity for both existing employees and persons who wish to join Thaioil to learn and grow in the exciting business of integrated refining and petrochemical as our aspiration to be the Energy Converter for the better world.

# OUR CUSTOMERS AND SUPPLIERS STORY



## HIGHLIGHTS FROM 2011

**89%**

satisfaction percentage  
of our customers  
(1HY2011)

**>250,000**

**metric tons**  
of sulfur that we save from  
releasing to the environment by  
introducing EURO 4 products

**10**

**companies**  
involved in the Pilot Phase  
for high priority suppliers and  
contractors of Thaioil CSR  
in supply chain



What We

## **DID IN 2011?**

- **Launched E-Ordering System Phase I for Petroleum Customers**
- **Organized a Workshop with Other Related Departments to Brainstorm on Responding to Customer Feedback**
- **Rolled Out CSR in Supply Chain Phase I for 10 Key Suppliers and Contractors**

What We

## **PLAN TO DO IN 2012?**

- + Modify Partial Parts of the E-Ordering System to Serve Customer Requirements**
- + Formulate Customer Database**
- + Expand CSR in Supply Chain Program into Phase II to Include More Suppliers and Contractors**

# Customers & Green Products

## **Listening, understanding and integrating customer feedback into product and service improvement process to build customer engagement**

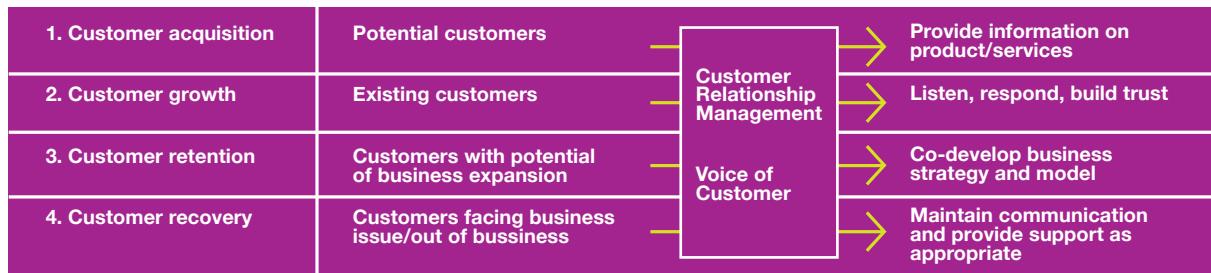
Thaioil sees and treats customers as our business partners whom we seek to understand and align their business goals with our business plan by working together to increase values between Thaioil and customers. In doing so, Thaioil has developed different methods and initiatives to ensure that our customers' concerns and voices are effectively managed and heard. For instance, a separate and independent function in managing customer relations is established to ensure that all concerns are addressed; and both large scale and small scale customer are included in our customer engagement plan. In 2011, our key achievements regarding customers and green products were the E-Ordering initiative which sustainably helps improving efficiency of oil ordering process whilst the Road Tanker project was launched to provide vehicle safety inspection and rest area for drivers of our customers with aims to prevent accident.

Moreover, a by product of Thaioil achievements in meeting EURO 4 standards which help reducing a number of sulfur from our air to breath. In the years to come, the challenge in holistic management of commercial activities for all of our existing and future business remains, however, with our strong infrastructure and dedicated teams, such a difficulty will soon be overcome.

At Thaioil, we go beyond customer focus to treat our customers as our business partners to understand their business goals and align with Thaioil's business plan. Our commercial strategy does not focus solely on increasing the number of customer as many as possible. On the other hand, we focus on walking together with the current customers to increase the value, both tangible and intangible between them and Thaioil. However, we open to do business with new customers to expand our family to be the big family business with the sense of professional of Thaioil.

Responding to the customer voice in timeliness and ultimately answering customer need is one of the key success factors for customer relationship management (CRM) at Thaioil. How we hear the voice and how we ensure we understand what our customer really wants are detailed as follows.

There are two categories of Thaioil's customers: large scale customers (i.e., off-takers) and small scale customers which their expectations are basically the same, i.e. quality of products/services, availability of product and safety of product. Therefore, Thaioil customer engagement process builds on customer lifecycle defined as follows



Thaioil has a dedicated function for managing customer relations independently from customer planning function to ensure interest of the function is to looking after customer voice. Every customer is included in our customer engagement plan that details the responsible person, schedule for engagement, method for engagement and objectives of engagement for each of the customers. The engagement methods include customer visits, calling via telephone, seminar and plant visit. In addition, customers could provide feedback through our website which the message will be centered by our Customer Relations. The customers' requirement, feedback and expectation will be gathered and passed to related department to timely deliver their requirement in term of response, product, service or business process improvement.

## From Now, We go On-Line, E-Ordering Initiative

Thaioil values voices of customers as one of the key inputs in our continuous development which E-Ordering is how we listen to customers and adapt it to the world of information technology and internet. The traditional process involving multiple steps of human dependent and out of date machine (i.e. facsimile) which human and machine error could reasonably be expected. Therefore, we analyzed customer feedback and came up with the conceptual design of increasing flexibility for customers, improving efficiency for oil ordering process and providing a convenient access to system for the customer with user-friendly system. The new process was then designed to have only 3 steps of creating sale order, issuing product ticket and collecting products. All steps are managed through SAP which the customer could access the system to track the status and credit. Therefore, the new introduced process could save time, reduce transaction error, provide flexibility including user-friendly interface. Our first phase in 2011 piloted on domestic lorry loading customers under the cash and credit payment term.

## Information Security

Security of customer data is the area we uphold as one of the priority in our customer data management system. As we currently moving toward more software oriented organization. Computer program and management information system is becoming a part of our daily life.

As our marketing, order, fulfillment and customer service history are included in our customer database, we only allow access to customer data to authorized persons only. Our commercial staffs could access to see only the data of customers they are responsible. In addition, all the access and actions are logged in the system to ensure tracking and investigation in case of the incidence. Maintaining confidential information and use of inside information is also included in our code of conduct. In 2011, Thaioil received the certification of ISO/IEC27001 Information Security Management System in the complex production network. Thaioil never experienced a case of breaches of customer privacy or losses of/stolen customer data.

We do not focus solely on giving everything our customer asking. However, we try to understand what the customer really wants to ensure our response help them to meet their expectation. We have weekly commercial meeting to discuss about responding to customer expectation and also monthly brainstorming session with other relevant departments to ensure holistic view to analyze customer expectation and identifying approach to response on key issues.

## Truck Loading

As our philosophy of corporate responsibility goes beyond factory fence-line, we also concern the well-being of road tanker drivers of our customers as to prevent accident that has consequence on safety of communities, environment, customers business and ultimately Thaioil. Therefore, we have been working together to identify the risk and understand the need to ultimately provide them with what we consider the best in class rest facility for our customers' truck drivers. They can access the facility to sleep, shower or rest before taking back our products. Apart from human factor, customers' vehicle is another area where our corporate responsibility reaches to. Thaioil has the safety precaution by inspection all trucks before offtaking our products. Un-qualified trucks will be informed the issues and we sadly could not provide our products to the trucks to protect our customer business and community safety.

To verify the effectiveness of our customer relation management, Thaioil conducts annual customer survey which includes satisfaction rating and descriptive feedback. Customer relations function is responsible for organizing the survey via questionnaire and compiles the results. The customer satisfaction score is then benchmarked with our competitors to identify improvement plan as needed. The descriptive feedback will be discussed in the monthly commercial brainstorming session.



## Overall Customer Satisfaction Score Against Target

The customer satisfaction score in 2011 was 89% against the target of 85%. The rating is increasing for consecutive years which we are excited to maintain the target again in 2012.

Despite our comprehensive approach, the challenge remaining is holistic management of commercial activities throughout Thaioil Group for our new business, i.e. solvent and ethanol. However, we have strong infrastructure and dedicated teams in both core and new businesses to be the total customer solutions of Thaioil Group by 2015. This will enable us to move on into the next 50 years which new challenges in increasing portfolio of specialty product and competing in regional arena.

## Green and Clean Products for Healthier Customers and a Better World

Thaioil believes that the buying pattern nowadays is gearing toward greener and cleaner products which would be rapidly increasing in the future as the environmental and health impact becomes more evitable. Apart from international standards and regulations, our voice of customers is also included in new product to improve our product quality and delivery, service and innovating new products to serve Thai market.

# Our Clean and Safe Products for the Better World



Air pollution in the urban area is one of the environmental issues in the major cities like Bangkok which exhaust gas from road vehicles is one of the main contributors. Sulfur content in fuels is released into the atmosphere after the combustion process in an engine. Sulfur in the atmosphere causes acid rain and particulate which could have impact on human health and the environment. In 2011, Thaioil became the first Thai refinery which all products are met with EURO 4 Standards including diesel, gasoline octane 95, gasoline octane 91 and base oil for gasohol octane 95 and octane 91 due to our volunteering begins the project to construct the Catalytic Cracked Gasoline Hydrodesulphurization Unit (CCG HDS) since 2006. This effort results in reduction of sulfur content in fuels from 350 ppm to be less than 50 ppm or approximately 7 times less than the regular fuels used in Thailand. We are able to produce 30 million liters per day of EURO 4 fuels. In other words, we were saving more than 250,000 metric tons of sulfur in 2011 that was supposed to be released into the atmosphere or equivalent to 2,500,000 rice sacks.

To be an early bird in the market, we responded to the change in the limitation of level of carcinogenic components called poly-cyclic aromatics (PCAs) contained in conventional rubber processing oil. Thaioil Group invested about 800 million bath for raising the productivity of TDAE, an environmental friendly product. The TDAE contains PCAs merely below 3% as limited by law throughout EU. Right now we have the commercial scale production capacity of 67,500 tons of TDAE per year.

# Suppliers & Contractors

## Integrated CSR risk management in our supply chain for business sustainability

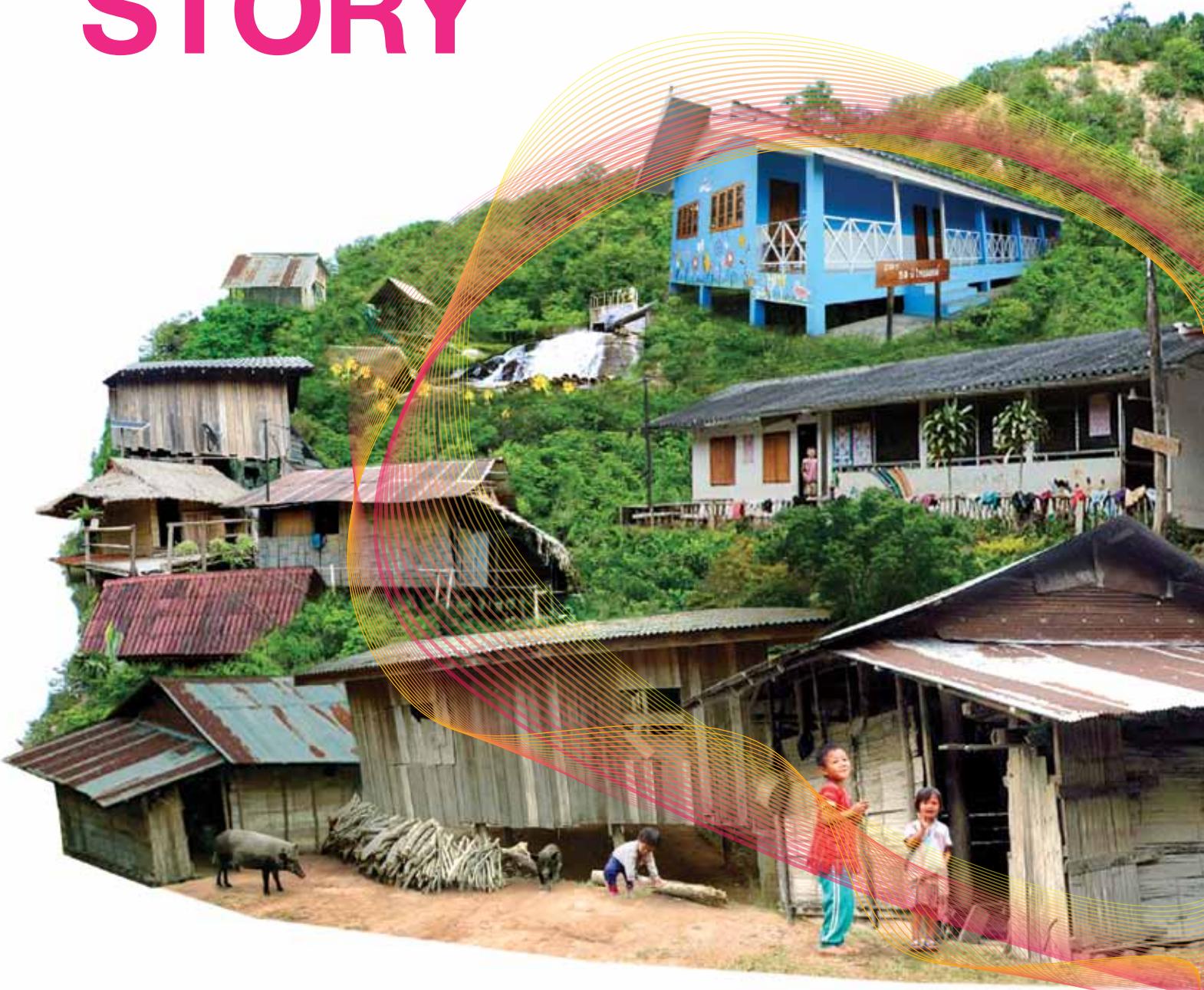
At Thaioil, we have concrete infrastructure for suppliers and contractors management. Our approved vendor list process will screen unqualified suppliers and contractors from our list which the criteria on quality, environment, and human rights are included. Our CSR in supply chain is another platform to demonstrate our preference to conduct business with responsible organizations. We developed our supply chain standards based on international recognized guidance on social responsibility along with a guideline to implement the standards. The phase one of CSR in supply chain was focusing on high priority suppliers and contractors while more suppliers and contractors are expected to be included in the phase two of this initiative.

In every business model including Thaioil's, supply chain is an undeniable integral part of it which the performance of suppliers and contractors is translated into the performance of Thaioil. Thus, the standards for suppliers and contractors that include social and environmental criteria have to be set and have to be checked on a regular basis which Thaioil ultimately prefer to conduct business with organizations that have equal or higher standards on corporate responsibility. Every suppliers and contractors of Thaioil has to be screened by filling the Vendor Questionnaire which includes the topics on labor rights, environmental, health and safety management before registered into the Approved Vendor List (AVL) of Thaioil Group's suppliers and contractors. Furthermore, considering we are capital and technological intensive industry, thus, child labor and forced labor are not the issues in our supply chain. However, we will not tolerate the abusing of the Fundamental Principles and Rights at Work in our supply chain.

In addition to the AVL, Thaioil has developed the voluntary standards on Corporate Social Responsibility for Suppliers and Contractors in 2010 which is in line with ISO 26000 Guidance on Social Responsibility and introduced the standards to suppliers and contractors in Thaioil CSR in Supply Chain 2010 along with knowledge sharing on responsible supply chain. There are 7 areas in the standards including governance, human rights, labor practices, the environment, fair operating practice, consumer issues and community development. In addition, Thaioil developed the guideline for key suppliers and contractors who seek to implement the Standards.

We officially launch the phase one of our CSR in supply chain in 2010 for our 10 high priority suppliers and contractors in operations and administrative areas as we intent to focus on delivering comprehensive process to our key suppliers and contractors those defined from their potential impacts from their CSR performance to Thaioil operation. During the year, we have visited our key suppliers and contractors to help them with the understanding of the Standards and overcome the barrier for implementation. We will carry on CSR in supply chain into the phase two which at least 25 more suppliers are going to join our initiative.

# OUR COMMUNITIES AND SOCIETY STORY



## HIGHLIGHTS FROM 2011

**>70**

millions baht

that we invested in  
Thaioil Group Health and  
Learning Center

**>50,000**

annual services transaction

in the Thaioil Group Health and  
Learning Center

**>200**

Households

**& 12**

public services  
buildings

benefit from renewable energy and  
energy efficiency projects of Thaioil



What We

## DID IN 2011?

- **Opened Community Medicine Center for Community around the Refinery**
- **Contributed in Coral Breeding & Rehabilitation at Si Chang Island**
- **Completed the Huay Poo Ling Pico-Hydro Power Plant Project**
- **Initiated the Umphang Energy Sufficient City in Honor of His Majesty the King Project**

What We

## PLAN TO DO IN 2012?

- **Carry on Building of Social, Physical, Mental and Intellectual Happiness in Communities Around the Refinery**
- **Continue the Umphang Energy Town in Honor of His Majesty the King Project, Coral Breeding & Rehabilitation and Ban Mae Cho Hydro-Power Plant Project**
- **New Projects of Biogas Production and Non-toxic Farming Project at Kho Mak Noi**

## **Corporate Social Responsibility (CSR) to build Thaioil Group Brand through Prevention of Impact to Communities and Establishing Sustainable Community Development Program at the National and Community levels.**

At Thaioil Group, our CSR principle is based on the five strategies of (i) Leverage our 50 year expertise for enhancing the Company's CSR strategic to be benchmarked with international standard of sustainability, (ii) Build CSR alliances and/or creating co-creation with the important institutes or bodies that influence societies, (iii) Reduce global warming through Clean Development Mechanism (CDM), (iv) Emphasize a more in-depth CSR activities with the communities (V) Create and consistently promote employee volunteering spirit.

Thaioil Group considers our nearby communities as neighbor which we commit to prevent and mitigate potential impact from our activities to the communities. We also emphasize in maintaining quality, occupational health safety and environment standards. Environmental Impact Assessment (EIA) and public participation are the key approach to identify potential environmental impact, develop prevention and mitigation measures and communicating with the potential affected parties to get concerns and make understanding.

## Impact Prevention and Community Engagement

At Thaioil Group, we believe the community acceptance and engagement is one of the key success factors for a sustainable business. Therefore, in consideration process, we include social and environmental topics into both new and expansion project proposal checklist. If the project could have impact on community or environment, the measure is required to address the risk which could be voluntary environmental study, voluntary mitigation measures or full EIA according to the Office of Natural Resources and Environmental Policy and Planning (ONEP) requirements that includes Biodiversity, Social and Health Impact Assessment

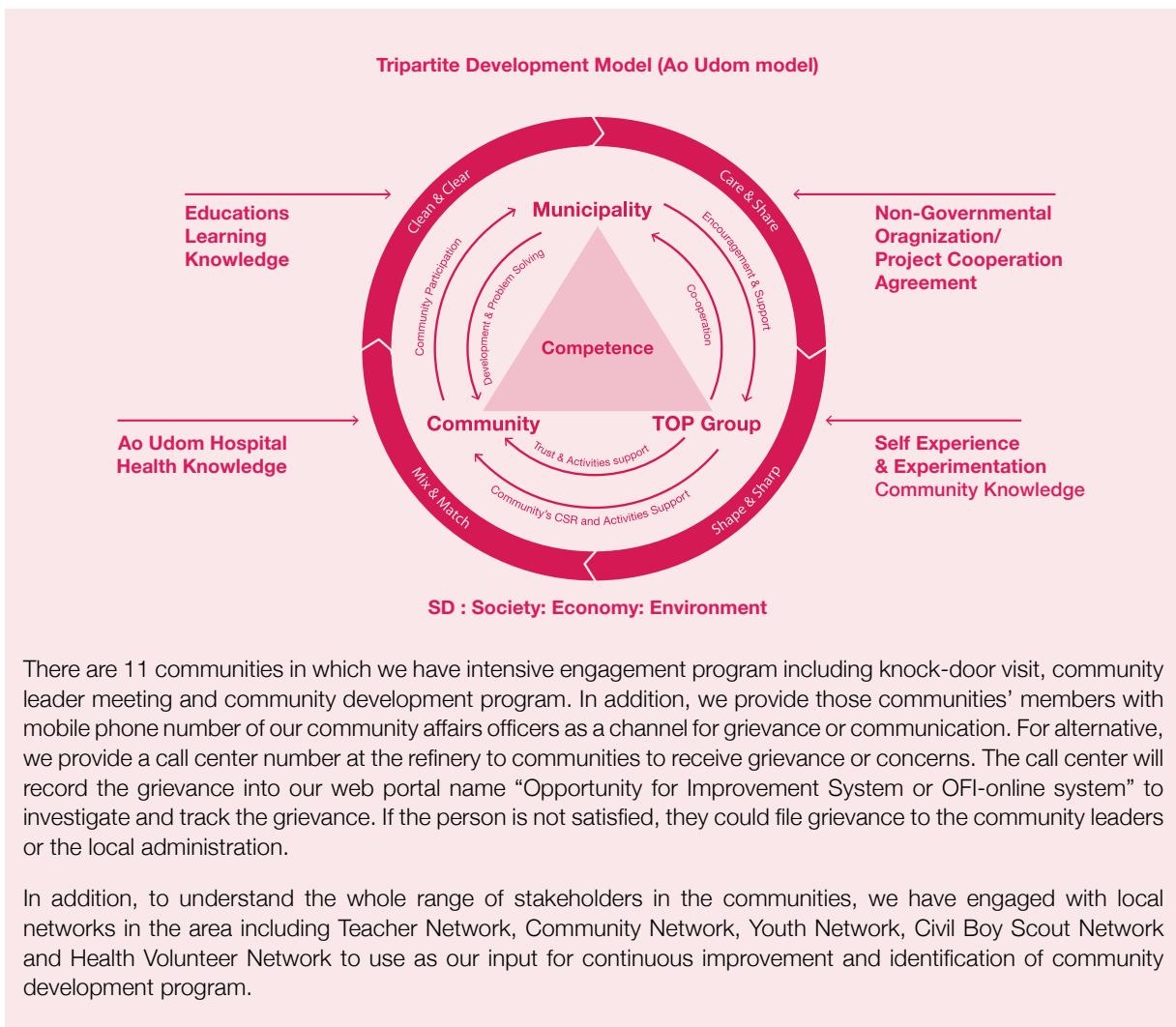
Thaioil fully complies with ONEP Guideline on Stakeholders Participation in EIA which includes stakeholder identification and engagement which at least 2 public consultations are required. The first public consultation is to receive stakeholder concerns regarding to the project development and the second is to agree on the proposed mitigation measures of the project and gain informed consent. The stakeholder identification process has to be in accordance with the ONEP's guideline which classify stakeholder into seven groups including 1. affected persons, 2. EIA license holders, 3. ONEP, 4. authorities, 5. NGOs, 6. media and 7. public to ensure effective participation. On-going grievance mechanism managed by external party (in other words, EIA license holder) in conjunction with Thaioil is set up during the EIA process to provide another channel to receive community concerns. Once the EIA is approved, its mitigation and monitoring measures would be included in the environmental management system (EMS) at site level and communicate to the nearby communities.

The mitigation and monitoring measures are regularly tracked internally and externally by EMS mechanism and the external party who has EIA license. The environmental monitoring and audit report is prepared twice a year by EIA license holder and submit to ONEP. The monitoring criteria are including marine biodiversity along with air, noise, emissions, effluence, seawater quality and occupational health and safety. Environmental function of operations and government relations function of corporate are working together to select an EIA license holder and oversee the third-party monitoring and report preparation.



## Nearby Communities are our Neighbors

At Thaioil Group, we consider the nearby community as our neighbors and friends. In Thai culture, neighbors mean more than a person who lives nearby which neighbors are looking after each other and giving hands when someone is in trouble. The aforementioned definition is imprinted into all our staffs especially in our dedicated community affairs function. Each community affair staff has a designated community to build relationships and engagement. We also have the Committee on Environment and Community Relations at Sriracha area to oversee management of potential community impacts. This committee comprises of representatives from related function, for example environment, community affairs, operations to ensure involvement of relevant functions. Thaioil also has the Principle of Tripartite as known as Ao Udom Model which is the innovation from our long experience in working with the communities and local administrations. The model is the regular meeting between Thaioil, communities and local administrations to exchange idea and finding solutions for the matters in relevant to the area.



## Community Engagement and Development

Thaioil believes that the community development is not limited to only economical prosperity. On the other hand, strong and sustained community has to be built on healthy community in term of physical and culture. Therefore, Thaioil structures community development program around the four principles of happiness, namely social, physical, mental and intellectual happiness. Feedbacks from communities and local networks are analyzed and used for development of the community development program that meets the actual development needs in the four areas of happiness of the communities nearby. In addition, we involve communities, local administrations for the planning and the execution of our programs. Ultimately, the mean to sustain community development program is to include the program into the community development program of the government. In 2011, our key community achievements

beyond donations, participation in local community event are provided as following topics.

### Health Promotion

Thaioil focuses on good physical and mental stage of citizen, which we believe they are the key for happiness in life. Therefore, we invest in Thaioil Group Health and Learning Center for communities as an approach to pursuit holistic health development for both physically and mentally of our communities. In addition, Thaioil has a plan in place to construct "the 50<sup>th</sup> Anniversary Thaioil group Emergency Building" for Ao Udom Hospital in regard to 50 years anniversary of Thaioil in 2012 to help the hospital increasing its capacity.

## Thaioil Group Health and Learning Center

The Health and Learning Center provides services in the concept of "Community and Preventive Medicine" under the coordination with Laem Chabang Sub-district Administration, Ao Udom Hospital and community committees nearby. These parties have been involved since the beginning of this initiative and agreed on the construction of the center to provide varieties of health services for people at any ages who are surrounding the refinery and also provide "Mobile health unit project" which is a travel continually health service. Therefore, Thaioil contributes more than 70 million baht for the construction of the building and utilities on the 2.4 acre land close to the communities. The service provided at the center include

- ♥ Dental and proactive health care;
- ♥ Community medicine to develop community health database incorporate with Laem Chabang Sub-district Administration and Ao Udom Hospital;
- ♥ Public library;
- ♥ Multipurpose area for communities;
- ♥ Activity area to promote good health;
- ♥ Buddhist hall; and
- ♥ Community emergency center.

The center provides free accessible services to the 11 communities for more than 20,000 persons living adjacent to the refinery. This is our true willing to return something back for our good neighbors who live side-by-side for five decades. During 2011, Thaioil organizes other health promotion activities namely aerobic dance, physical test, hula-hoop exercise, religion ceremony and community dialogue between community leaders on community development.



## Environmental Conservation

Apart from environmental management in compliance with regulations and innovation of cleaner products, Thaioil also contributes to the environmental conservation and biodiversity enhancement via supporting the project of authority and other organizations including

### Garbage Free Community:

The project is the cooperation between Laem Chabang Subdistrict Administration and communities in the area to have a pilot project at Ban Ao Udom Community with the purpose of improving garbage management and landscape in the area.

### Educational trip:

Thaioil arranged an educational trip for community leaders and school directors in the area to help these people gain some knowledge and idea to develop their communities. The program included

- ✚ Zero-waste management at Academic Resources Center, Kasetsart University in Krabi Province
- ✚ Sufficiency Economy Model at Ban Kho Klang

### Coral Breeding & Rehabilitation :

The cooperation project with the Department of Marine and Coastal Resources and the Aquatic Resources Research Institute, Chulalongkorn University to restore coral reef at Koh Si Chang, Chonburi Province to enhance ecological value of the Gulf of Thailand

### Youth Scientific Camp for Environmental Conservation:

The annual project aims to develop knowledge and awareness in environmental conservation for youth.

### Biodiversity Survey at Phubai Hill:

The project is intent to enhance ecological and biological knowledge in the area of Phubai hill. This knowledge brings the better

understanding in symbiosis between animals, plants and human to the communities.

## Education Support

Thaioil considers knowledge is the foundation of educational development. Therefore, child and youth education is included in the community development program, including

- Donation for HRH Princess Maha Chakri's Fund under the patronage of HRH Princess Maha Chakri Sirindhorn's since 1991 for any level of education within Thailand or oversea.
- Thai Oil Public Company Limited Fund in Memorial of Dr. Pramote Chavet (incorporation with the Engineering Institute of Thailand) to develop high profile chemical engineer in master degree since 1997.
- Thai Oil Public Company Limited Education Fund for students and college students in Laem Chabang Sub-district which the number of scholarship has been increasing from 126 to 162 in 2011 to cover 22 communities in Laem Chabang area.
- Thai Oil Public Company Limited Scholarship in Ananda Mahidol Foundation which has been established in 2005 for any level of education within Thailand or oversea.
- Education and Ethic for Youth Leader Building Project to provide scholarship for poor students in seven communities around the refinery to attend Kasetsart University, Sriracha Campus.
- Cooperation Project with Universities, for example, Master Degree on Chemical Engineering (ChEPS) of the King Mongkut's University of Technology Thonburi since 1997.

## Social Investment for the Sustainable Future

Thaioil social investment approach is to contribute for the sustainable development of the larger society. We identify our experience and expertise accumulated after 50 years in an energy business as our strength to develop renewable energy projects for remote areas in Thailand. The projects emphasize on applying natural energy resources instead of wasting them. This concept helps to enhance the effectiveness of resource management and increase the standard of living of the communities on a sufficiency basis.

Building partnership with recognized institutes such as the Department of Alternative Energy Development and Efficiency (DEDE), the Energy for Environment Foundation (EforE) and the United Nations Development Programme (UNDP), is one of our approaches to develop CSR projects. Together with our partnerships, we recently succeed in development of some renewable energy projects which include



#### **Project to improve the efficiency of the stove modification of tea leaves steaming:**

Miang (preserved tea leaves) requires the steaming process in preparation. However, the regular process consumes large amount of energy from firewood due to low efficiency of the stove. Therefore, Thaioil in conjunction with EforE and the Institute of Energy Research and Development, Chiang Mai University have been conducted a method to improve energy efficiency of the stove. The pilot project was conducted at Ban Pa Miang Village, Lampang Province for the 132 households which the main income was from producing and selling steamed tea leaves. The project staffs including Thaioil volunteers help the villagers to increase the surface of the stove's heating exchange for more than 400% and heightening the stack as resulted in the reduction of energy usage for 60% of fuel. At the present, over 100 households are using energy efficient stoves to reduce forest encroachment and save over 7,140 trees while decreasing carbon dioxide emission by 15,000 tons a year.



#### **Biogas from animal farm project:**

Thaioil and EforE also developed biogas from pig farms at Ban Nares, Amphoe Don Chedi, Suphan Buri Province, to produce the biogas in a 100-cubic-meter fixed-dome pit filled with pig manure. The project installed the main pipe system along village roads to distribute biogas to 23 households. This way, Ban Nares villagers can save their fuel expenses by using the biogas for replacing LPG. The project also reduces unpleasant sights, odors, unhygienic environment and disease-spreading insects, as well as global warming.



To ensure the holistic management approach by the communities for the communities and continuous development, the project committee is set up from community representative, stock farmer and local administration. Initially, the project members have to make 300 baht entry fee and 50 baht per month for the construction and maintenance of the biogas pipeline.

#### **Pico-Hydro Power projects:**



Huay Poo Ling, a remote village of Chiang Mai Province located in the mountainous area where accessibility of electricity was limited but rich in natural hydro power. Therefore, Thaioil, in partnership with EforE and the United Nations Development Programme (UNDP) have initiated the project called "Huay Poo Ling Pico-Hydro Power Plant Project" which Pico derive from the Italian piccolo, meaning small. However, size is not everything especially for the 99 households from 2 villages at Huay Poo Ling. A cross-flow turbine electric generator capable of producing 22 kW electricity makes differences in the quality of life for villagers by providing lighting and accessible to media including enlightening opportunity for children to be educated through satellite learning. Villagers and the local administration have been involving since the design of the project and set up a team to oversee the machine maintenance and other management which the Department of National Parks, Wildlife and Plant Conservation (DNP) and the Department of Alternative Energy Development and Efficiency (DEDE) were in the advisory role. In addition, Thaioil also provided school building with computer and distance learning system for the school in Huay Poo Ling to give opportunity for students to have equal education as students in a city.



The project was just an example of how Thaioil engages in the development of communities in the country. Our other hydro power plants include 7.5 kW generator at Champathong Temple, Phayao Province; 3 kW generator at Bann Pean, Chiang Mai Province; and 3 kW generator at Highland Agricultural Research Center and the 4<sup>th</sup> Ranger Regiment, Kampaengpeth Province.

## Umphang Energy Town in Honor of HM the King Project



Umphang District in Tak Province is the area that is possessed with high potential for renewable energy development including hydro, biomass, biogas and solar power. Therefore, Thaioil and our partner, EforE have selected the Sub-district named Mae Chan of Umphang District in Tak Province to be the first pilot area under the umbrella of the project called "Umphang Energy Town in Honor of HM the King" to celebrate on the auspicious occasion of the 7<sup>th</sup> Cycle (84<sup>th</sup>) of His Majesty the King's Birthday Anniversary on the 5 December 2011. We plan to develop hydropower plant, biomass power plant, biogas system and solar power for this initiative. We ambitiously hope that "Umphang Energy Town" will be a prototype project for the implementation of sufficient economy for the development of communities in the remote area where renewable energy is the key enable. Thaioil expects to be able to communicate the progress and benefit to the communities in 2012.

## 2011 Flood Crisis and Thaioil Corporate Citizenship

2011 flood crisis in Thailand woke up every party to review and revise their crisis preparation and response plan. As we consider ourselves as corporate citizenship of a country where we operate, Thaioil along with our volunteering employees actively involved in the set-up and managing the flood relief center at Adisorn Military Camp, Saraburi Province along with other companies in PTT Group.

Thaioil also donated in term of financial and pro bono including diesel fuel, boats, survival bags, sand bags, life jackets and water pumps directly to the flood victims or through government agencies, accounting for more than 35 million baht. In addition, our employees made significant contribution for flood victims by visiting and encouraging them to fight the floods in the Province of Tak, Saraburi, Phra Nakhon Si Ayutthaya, Lop Buri, Pathum Thani and Nonthaburi. Our employees also decided not to organize Thaioil Group sport day as planned but to change it into fund raising campaign for flood victims to "Thaioil Group Charity Day", which the Company top up the value of the employee donation for the total contribution about 2.4 million baht.



# Summary of Our Performance

## Economic Performance

Performance	Unit	2008	2009	2010 <sup>(1)</sup>	2011
Total revenues	million baht	401,400	287,393	324,352	448,773
EBITDA	million baht	7,949	21,393	17,381	28,760
Net profit	million baht	224	12,062	8,956	14,853
Earnings per share	baht per share	0.11	5.91	4.39	7.28
Return on equity	%	0.3	17.8	12.2	18.5
Return on assets	%	0.2	8.9	6.3	9.8
Significant financial assistance received from government <sup>(2)</sup>	million baht	1,076	1,175	1,367	1,722
Market capitalization	million baht	47,737	87,211	159,632	119,342

## Environmental Performance

Total productions	million ton	14.09	16.03	13.97	16.17
Water withdrawal	million cu.m	9.36	8.52	9.28	9.10
Water recycle	million cu.m	0.60	0.61	0.66	0.70
	%	6.50	7.20	7.10	7.70
Treated wastewater discharged	million cu.m	4.04	4.20	4.25	4.09
COD discharged	ton	230.02	204.73	189.63	180.39
Hazardous waste generation	thousand ton	5.00	5.78	3.89	5.55
Non-hazardous waste generation	thousand ton	1.37	0.46	1.20	0.96
Volatile Organic Compounds (VOC) emissions	thousand ton	12.93	12.85	12.99	12.97
NOx emissions	thousand ton	3.60	3.50	2.87	3.02
SOx emissions	thousand ton	10.52	8.79	6.27	8.22
Methane emissions	thousand ton	8.09	8.10	8.10	8.10

## Social Performance

Total Employees	persons	858	872	877	840
Employees-Female	persons	157	171	181	173
Employees-Male	persons	701	701	696	667
Employees in Bangkok	persons	87	100	103	93
Employees in Sriracha	persons	771	772	774	747
Employee over 50 years old	persons	144	171	127	126
Employee 30-50 years old	persons	561	566	565	559
Employee below 30 years old	persons	153	135	185	155
Employee satisfaction	score from 5	4.16	4.11	4.27	4.21
Lost-time injuries frequency (LTIF)-Contractors	per million working hour	0	0.39	0	0.14
Lost-time injuries frequency (LTIF)-Employees	per million working hour	0	0	0	0
Fatalities	persons	0	0	0	0

<sup>(1)</sup>Thaioil Group adopted Thai Accounting Standards (TAS) no.19, re: Employee Benefits retrospectively.  
<sup>(2)</sup>The data reported is only for Thaioil.

# Our Prizes

## Recognition in 2011

Date Received	Awards	Awarding Organization
March	Prime-minister's Thailand Quality Class Award in line with Baldridge performance excellence program	Thailand Productivity Institute
August	Thailand Energy Awards <ul style="list-style-type: none"> <li>• Outstanding off-grid renewable energy project</li> <li>• Outstanding energy conservation for industrial plant</li> </ul>	Department of Alternative Energy Development and Efficiency
September	CSR-DIW Award	Department of Industrial Works
September	CSR-DIW Continuous Award	Department of Industrial Works
December	SET Awards 2011 <ul style="list-style-type: none"> <li>• Outstanding investor relations</li> <li>• Outstanding corporate social responsibility</li> </ul>	The Stock Exchange of Thailand
December	Best Oil & Gas Refining Company in Asia	World Finance Magazine
December	Best Oil and Gas Clean Energy Company in Asia	World Finance Magazine

## Membership in Associations

Associations	Year of Membership
Petroleum Institute of Thailand	1987
Thailand Business Council for Sustainable Development	2006

# GRI Index Table

GRI Indicators		Pages	Note
<b>Profile Disclosures</b>			
<b>1</b>	<b>Strategy and Analysis</b>		
1.1	Statement from the most senior decision-maker of the organization	14, 15	
1.2	Description of key impacts, risks, and opportunities	18, 19, 20	
<b>2</b>	<b>Organizational Profile</b>		
2.1	Name of the organization	8	
2.2	Primary brands, products, and/or services	13	
2.3	Operational structure of the organization	12	
2.4	Location of organization's headquarters	8	
2.5	Number of countries where the organization operates, and names of countries	12	
2.6	Nature of ownership and legal form	8	
2.7	Markets served	12, 13	
2.8	Scale of the reporting organization	10, 11, 76	
2.9	Significant changes during the reporting period regarding size, structure, or ownership	5	
2.10	Awards received in the reporting period	77	
<b>3</b>	<b>Report Parameters</b>		
3.1	Reporting period	2	
3.2	Date of most recent previous report	-	First time
3.3	Reporting cycle	Annual	
3.4	Contact	3	
3.5	Process for defining report content	3	
3.6	Boundary of the report	2	
3.7	Limitations on the scope or boundary of the report	2	
3.8	Basis for reporting on other entities that could affect comparability	2	
3.9	Data measurement techniques and the bases of calculations.	2	
3.10	Explanation of the effect of any restatements of information	-	First time
3.11	Significant changes from previous reporting periods in the scope, boundary or measurement methods applied in the report	-	First time
3.12	GRI content index	78	
3.13	Policy and current practice with regard to seeking external assurance for the report.	2	
<b>4</b>	<b>Governance, Commitments and Engagement</b>		
4.1	Governance Structure	28	
4.2	Whether the chair of the board of directors is also an executive officer	28	
4.3	Percentage of the board of directors that are independent, non-executive directors	28	
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the board of directors	21	
4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives	29	
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided.	32, 33	
4.7	Process for determining the qualifications and expertise of the members of the highest governance body for guiding the organization's strategy	28	
4.8	Internally developed statements of mission or values, codes of conduct and principles relevant to economic, environmental and social performance and the status of their implementation	7, 8, 32	
4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance	20	
4.10	Processes for evaluating the highest governance body's own performance	29	
4.11	Precautionary approach	30, 31	

GRI Indicators		Pages	Note
4.12	Agreements, principles, or external initiatives on economic, environmental and social aspects	27, 39	
4.13	Memberships in associations and national/ international advocacy organizations	77	
4.14	List of stakeholder groups engaged by the organization.	21	
4.15	The basis for identifying and selecting stakeholders with whom to engage	20	
4.16	Approaches to stakeholder engagement	21	
4.17	Key topics and concerns that have been raised through stakeholder engagement	21	
<b>Economic Performance</b>			
	Disclosure on Management Approach to Economic Performance	30, 56, 70, 71	
EC1	Direct economic value generated and distributed	10, 11, 76	
EC2	Implications of climate change	47, 48	
EC4	Significant financial assistance received from government	76	
EC5	Standard entry level wage compared to local minimum wage	56	
EC8	Infrastructure investments and services for public benefit	67	
<b>Environmental Performance</b>			
		39, 41, 42, 43,	
	Disclosure on Management Approach to Environmental Performance	46, 48, 64, 70	
EN5	Initiatives to reduce energy consumption	46, 47	
EN8, EN10	Water withdrawal and recycled and reused	41	
EN12, EN14	Biodiversity	71	
EN16,			
EN18, EN20	Significant air emissions and initiatives to reduce them	43, 45, 46, 47	
EN21	Total water discharge by quality and destination	41	
EN22, EN23	Waste and Hazardous Waste, including significant spills	42, 43	
EN26	Initiatives to mitigate environmental impacts of products and services	64	
EN28	Environmental fines and sanctions	43	
<b>Labor Practices and Decent work</b>			
		49, 53,	
	Disclosure on Management Approach to Labor Practices and Decent Work	54, 55, 57	
LA1-LA3	Employment	54, 56, 76	
LA4	Labor/management relations	57	
LA6, LA7	Occupational health and safety	49	
LA10-LA12	Training and education	55	
LA14	Diversity and equal opportunity	57	
<b>Human Rights</b>			
	Disclosure on Management Approach to Human Rights	32, 33, 34, 70	
HR2	Procurement practices	65	
HR4-HR7	Managing human rights risk in operations	34, 57	None of our operation process a risk of violation of freedom of association and collective bargaining and using of child and forced labors
<b>Society</b>			
	Disclosure on Management Approach to Society	32, 33, 34, 70	
SO1	Impacts of operations on communities	70, 71	
SO2-SO4	Managing risks related to corruption	32, 33	
SO6	Political contributions	32	Thaioil not allowed to make political contribution
SO7	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	34	
SO8	Significant fines and non-compliance with laws and regulations	34	
<b>Product Responsibility</b>			
	Disclosure on Management Approach to Product Responsibility	32, 33, 64	
PR2	Customer health and safety	34	
PR4, PR5	Product and service labeling	34, 57	
PR6-PR7	Marketing and communications	32, 34	
PR8	Customer privacy and losses of customer data	63	
PR9	Non-compliance with laws and regulations concerning products and services	34	

# Survey of Readers' Opinions

We would like to incorporate your valuable feedback to improve our Sustainability Report in the future. Your views and suggestions after reading this Sustainability Report will be reflected in our business activities and future Sustainability Reports. Please forward your response via post or email to the following address.

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 E-mail [sustainability@thaioilgroup.com](mailto:sustainability@thaioilgroup.com)

1. Which of the following group applied to you?

<input type="checkbox"/> Customer	<input type="checkbox"/> Employee	<input type="checkbox"/> Shareholder/Investor	<input type="checkbox"/> Fence-line Communities
<input type="checkbox"/> Investor	<input type="checkbox"/> NGO	<input type="checkbox"/> Media	<input type="checkbox"/> Government
<input type="checkbox"/> Academic	<input type="checkbox"/> Others	(Please descript.....)	

2. How did you find out about Thaioil Sustainability Report?

<input type="checkbox"/> Thaioil website	<input type="checkbox"/> Seminar/Lecture/Exhibition	<input type="checkbox"/> Thaioil employee
<input type="checkbox"/> Other website	<input type="checkbox"/> Newspaper/Magazine	<input type="checkbox"/> Others (Please descript.....)

3. What is the reason for your interest in Thaioil Sustainability Report?

<input type="checkbox"/> To obtain investment information	<input type="checkbox"/> To evaluate Thaioil	<input type="checkbox"/> To prepare Sustainability (CSR) Report
<input type="checkbox"/> For the purpose of research and education	<input type="checkbox"/> To obtain specific information	<input type="checkbox"/> Others (Please descript.....) (Please descript.....)

4. Which Chapter of the report did you find most interesting?

5. Which Chapter of the report should the information be added to?

6. Does this report include all material issues for the sustainability of Thaioil?

<input type="checkbox"/> Yes, it does	<input type="checkbox"/> No, it does not
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7. If not, please specify which issues should be added to?



