

Refining Sustainable Operating Growth

SUSTAINABLE DEVELOPMENT REPORT 2012



THAI OIL PUBLIC COMPANY LIMITED

Bangkok Office

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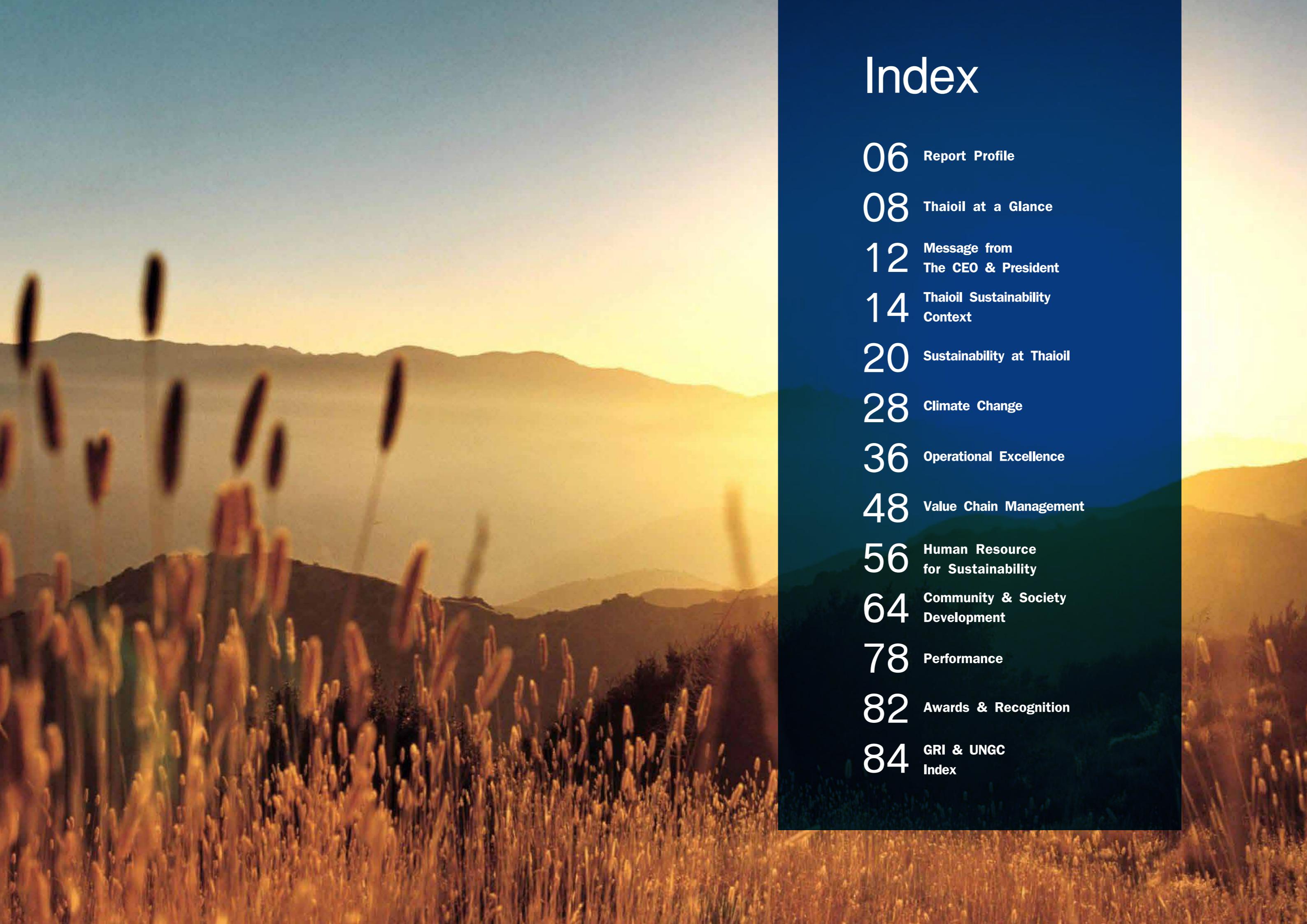
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THAI OIL PUBLIC COMPANY LIMITED



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Vision

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

Missions

- To be in top quartile on performance and return on investment
- To create a High-Performance Organization that promotes teamwork, innovation and trust for sustainability
- To emphasize good Corporate Governance and commit to Corporate Social Responsibility



Thai Oil Public Company Limited

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

Registered Capital 20,400,278,730 Baht, comprising 2,040,027,873 fully paid-up common shares of 10 Baht per share

Number of Employee 821 (as at December 31, 2012)

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, power generation, marine and pipeline transportation of crude oil, petroleum and petrochemical products including service provider for crude oil, ethanol, solvent and 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 2012).

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.



Teamwork and Collaboration

Ownership and Commitment

Excellence Striving

Professionalism

Vision Focus

Initiative

Integrity

Social Responsibility

Report Profile

Reporting Principle and Standard

This Sustainability Report of Thai Oil Public Company Limited was prepared in accordance with the G3.1 Guidelines of the Global Reporting Initiative (GRI) and its Oil and Gas Sector Supplement. Thai oil believes that this report merits GRI G3.1 Level A.

Reporting Period and Boundary

This report was prepared based on data for the period from 1 January to 31 December 2012. Quantitative measures of safety, occupational health and environmental performance covers operations in Thailand under Thai Oil Public Company Limited (TOP), Thai Paraxylene Company Limited (TPX), Thai Lube Base Public Company Limited (TLB), Thai Oil Power Company Limited (TP) and Independent Power (Thailand) Company Limited (IPT). Human resource data in this report includes Thaioil Energy Services Company Limited (TES) in addition to the aforementioned Quantities boundary measures. TES is a company that is managing workforces for other companies in the Thaioil Group. Data that changes throughout the year, such as information on human resources, have been given upto and including the last day of this fiscal year (31 December 2012). Performance data of contractors and suppliers is clearly indicated where applicable.

Thaioil is currently in the process of extending information disclosure throughout our supply chain for entities under our ability to control and significant influence. A disclosure boundary that is different from aforementioned criteria will be marked in the report.

Process for defining report content

The Principle of Materiality from AA1000APS and GRI Technical Protocol: Applying the Report Content Principles to Thaioil and our subsidiaries in defining the content of this sustainability report. Materiality assessment details are provided in Chapter 2 Thaioil Sustainability Context.

Report Quality Control

This report's intent is to disclose balanced, comparable, accurate, reliable and timeliness which the data owners in Thaioil were involved the review before compiling into the report.

We are developing a comprehensive process to gain independent assurance of the report, ensuring that material issues are reported and ensuring the quality of reported information. We expect our 2014 Report to be the first independently assured sustainability report.

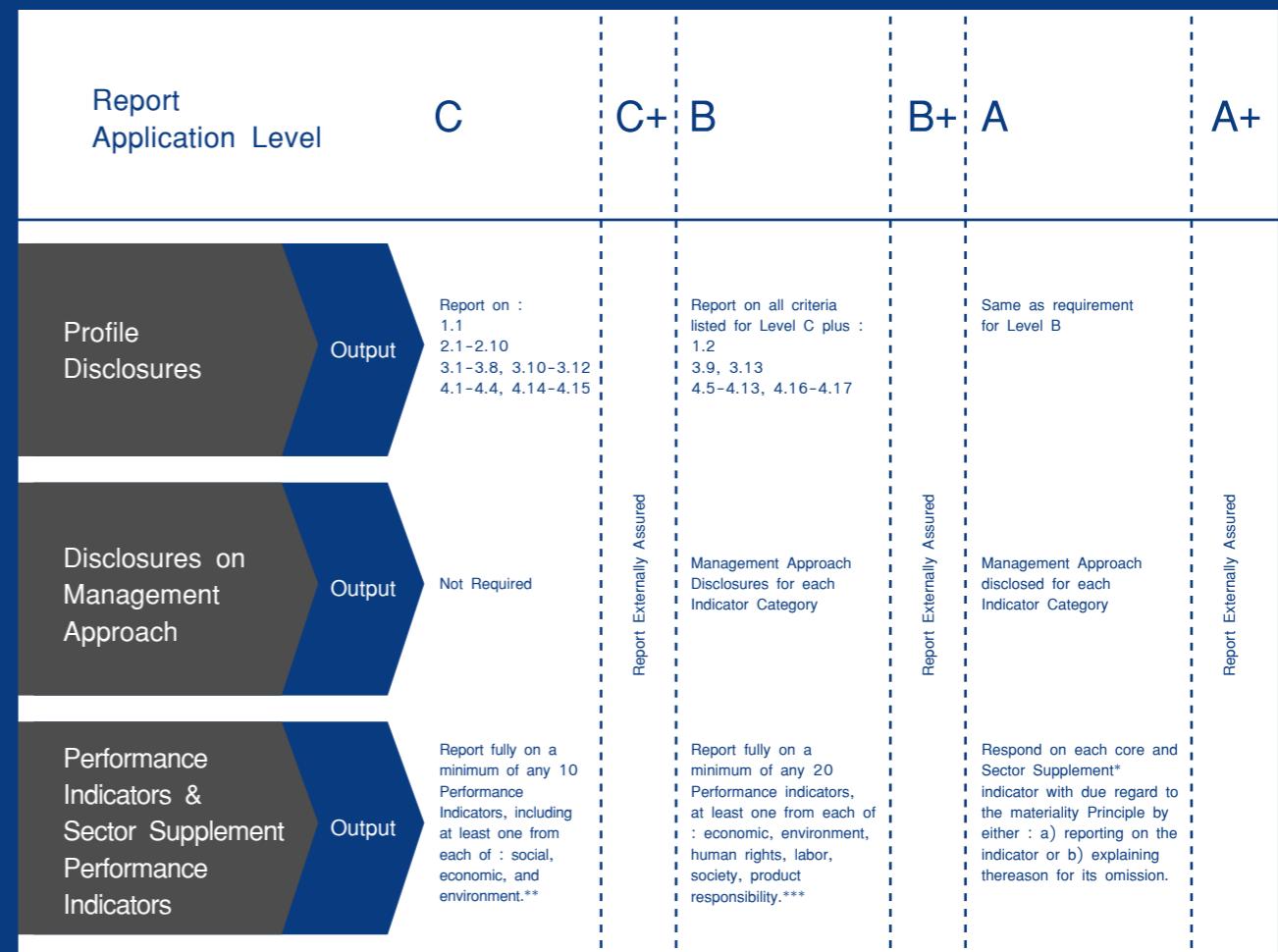
For further information, please contact :

Innovation and Sustainability Department

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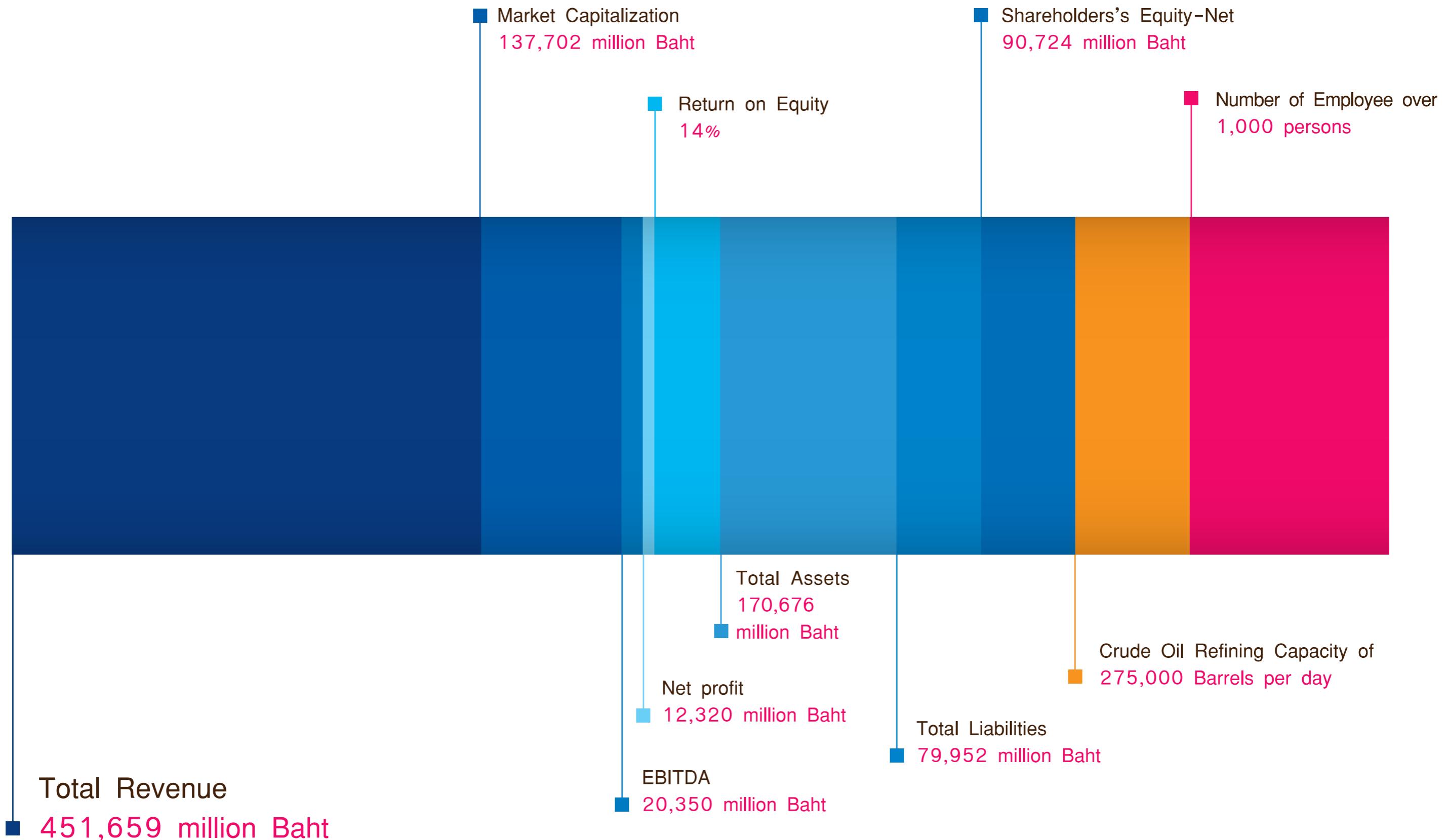


* Sector supplement in final version

** Performance Indicators may be selected from any finalized Sector Supplement, but 7 of the 10 must be from the original GRI Guidelines

*** Performance Indicators may be selected from any finalized Sector Supplement, but 14 of the 20 must be from the original GRI Guidelines

Thaioil at a Glance



Thaioil Business

Thaioil operates the largest petroleum refinery business in Thailand since 1961. Petroleum refinery is our core business which our refinery is one of the highest efficiency refinery in Asia Pacific with the refining capacity of 275,000 barrels per day.

Thaioil also operates other business through our subsidiaries and engages in other business as joint venture including paraxylene production, lube base oil production, electricity generation, crude oil and petrochemical marine transportation and pipeline, marine vessels management, renewable energy, solvent and professional services.



Remark : Independent Power (Thailand) Co., Ltd. (IPT) is merging with PTT Utility Co., Ltd. (PTTUT), to be Global Power Synergy Co., Ltd. Besides operating the power plant having a total production capacity 1,038 MWh of electricity and 1,340 tons per hour of steam, Global Power Synergy Co., Ltd. has the purpose of being a holding company to invest in power generation business in the future. Thaioil will directly and indirectly hold 32.39% of shares in this new forming company.

Thaioil Group Synergy for Sustainable Growth

Thaioil Group business is mainly the extension of petroleum refinery value chain in both upstream (crude oil marine transportation) and downstream (petrochemical and lube base oil, power generation, ethanol and professional services) to provide value added and security for the sustainable value chain of Thaioil.

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 26% of the nation's overall refining capacity and is capable of meeting the domestic demand for petroleum which stands at an average of 36%. Oil refining business is our core business to provide value added throughout the value chain.

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. Production capacity of upstream Aromatics 838,000 tons, Lube base oil 267,051 tons, which include bitumen and TDAE about 417,520 tons per annum and solvent 76,000 tons from joint venture company that also engages in solvent trading business.

Power Generation (Earning and Stability)

Power generation business includes

1. **Thaioil Power Co., Ltd. (TP)**, the natural gas co-generation power plant with capacity to produce 118 MWh of electricity. TP also provide 41 MWh of electricity to the national grid as a part of Small Power Producer (SPP) whereas the other portion is used within Thaioil Group to ensure stability of the refining process. In addition, TP could produce 168 tons per hour of steam to be used in other operating areas.

2. **Independent Power (Thailand) Co., Ltd. (IPT)**, a combined-cycle power plant with production capacity of 700 MWh providing all electricity generated to the national grid under Independent Power Plant (IPP).

All power plants use Natural gas as the main fuel.

Ethanol (Opportunity in the Future)

Thaioil has strategy on renewable energy in response to Thai government policy regarding promotion of producing and using of renewable energy. Engaging in renewable business is also preparing for the future changing in energy mix. Thaioil engages in ethanol production business through joint venture with 3 ethanol plants which have combined production of 800,000 liters per day.

Transportation (Marketing Support)

Thaioil invests in the business of transportation of crude oil, petroleum products and petrochemical product including marine logistic management, crew vessel service and transportation of other goods. We have 2 very large crude carriers with a total capacity of 581,550 dead weight tons, 5 petroleum and petrochemical tankers with combined loading of 147,450 dead weight tons and 3 crew, and good transportation vessels. Thaioil also invests in petroleum product pipeline business with the transmitting capacity of 26,000 million liter per year.

Others (Efficiency Improvement)

This is consisting of human resource management business to supply workforce for companies in Thaioil Group and energy consultation and information technology specialist.

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1. Message from the CEO and President

One of my aspirations, since I have accepted the position of Chief Executive Officer and President of Thaioil, is to manage the business for sustainable growth. This means, in 50 years or a century ahead, Thaioil will be continuously growing, providing energy security to Thai society.

Sustainability within Thaioil

Besides having strong business, being accepted as well as capability to coexist as part of a community and society are crucial parts of Thaioil's fundamental business growth in a sustainable path. Thus, Thaioil have hold accountability for social and environmental responsibility, resulting in earning the trust and satisfaction of stakeholders. We have accomplished various activities from the production process improvement, the environmental preservation, to the community and social development for more than 50 years.

Thaioil has applied well-accepted approaches for sustainability to our business, in order to maintain balance among economic goals, the society and the environment. This includes the verification and improvement of business practices to comply with ISO 26000, the development of the annual sustainability report in accordance with the Global Reporting Initiative (GRI) standard, and evaluating the corporate sustainability success by using the Dow Jones Sustainability Index (DJSI) approach.

Business in 2012

Giving back to the society is what Thaioil has been conducting continuously, though incorporating to nearby surrounding communities of the refinery. The Thaioil Health and Learning Center, is a center of well-being promotion for local residents. A.k.a. Saam-Pra-Sarn, the Tripartite Development Model, was developed with aim to promote close and continuous communication among Thaioil, the communities as well as the local authorities. The monthly meetings

are held to build consensus on the promotion, development and problem solving of community issues, to strengthen the co-existence of the communities and Thaioil towards a sustainable future. For a larger scale in developing parts of the Thai society, Thaioil in association with affiliates have conducted pilot projects to transfer 50-year experience, and expertise on energy for the benefits of the remote areas in Thailand. This includes the production of natural energy as well as public utilities, and the promotion of energy self-reliant communities. This would result in sustainable communities in remote areas, which optimize the use of their local natural resources and experience for better living conditions.

From our sustainability approaches and social responsibility practices, Thaioil has been selected and recognized as 1 of the 20 leading companies in oil and gas industry by ROBECO SAM. This organization evaluates sustainable development via the standards of Dow Jones Sustainability Index (DJSI) and is the advisor in company investments for sustainable development which has been operating for more than 18 years. Furthermore, Thaioil has also received the SET Awards 2012, in the 3 categories including "Best Corporate Social Responsibility Award." In addition, Thaioil has participated in UN Global Compact (UNGC) agreement to show our good intentions and firm commitment towards conducting honest business with responsibility.

In terms of employee development, Thaioil has run professional growth plan for individual employee and the succession plan for all key positions. Furthermore, we also promote general healthcare and well-being for our employees by analyzing health data, developing suitable health promotion plan and conducting campaigns for employees.

Steps Forward of Thaioil

From the beginning of our oil refinery business aiming to respond to the energy demand in the country, Thaioil to date has unabatingly expanded our business to other related sectors, including petrochemical, electricity, solvents, etc. We are committed to being a leading fully integrated refining and petrochemical company in the South-east Asian region. In conjunction with our goals and various working plans, Thaioil will remain persistent in giving priority toward sustainability development which we have been conducting for more than 50 years. For example, we have set long term goals to continuously improve energy efficiency to accomplish the Top Quartile in energy consumption in 2018, to optimize energy usage in the production process, and to reduce green house gas emission, etc.

As for Thaioil, sustainable development is not only scoped to the targets and the attempts to accomplish the target, albeit a way of conducting business as well as staff attitudes that regulate our company business and practice. We continue to grow, through both short-term and long-term business ventures simultaneously, being accepted by society, and preserving the environment. Lastly, I would like to thank you, all Thaioil stakeholders which have given support in our business. I would like to say, on behalf of myself and every employee of Thaioil that, we will continue to contribute our expertise as well as our capabilities for Thaioil and grow together with the Thai society sustainably. We will continue to involve and support nation energy security and economic growth, including development, leveraging environmental and social standards within Thailand for a long time to come.



Mr. Veerasak Kositpaisal
CEO and President





BUSINESS GROWTH

CG

EMPLOYEE
SATISFACTION
FAIR
OPERATION

CORPORATE GOVERNANCE PRODUCT QUALITY

ENVIRONMENTAL CONCERN

Thaioil Sustainability Context

To survive and grow sustainably, businesses need to adept continuously to the changing needs of public and stakeholders.

2. Thaioil Sustainability Context

The continual increase of world population and the persistent development of new technology have constantly changed the social condition and the environment around us. At present, world population has increased to 7 Billion and is expected to increase to 9 Billion within the next 40 years. The more the number of world population, the more world resources will be deployed and consumed, which results in a number of problems. For example, the increase of waste and pollution will damage the environment and human health. Climate change will cause more frequent and more severe natural disasters. The persistent development of hi-technology will instigate people to adapt their behavior and daily activities. All these issues cause social condition and the environment continually change over time, and it is expected to change with more rapid rate due to the huge number of population in the future.

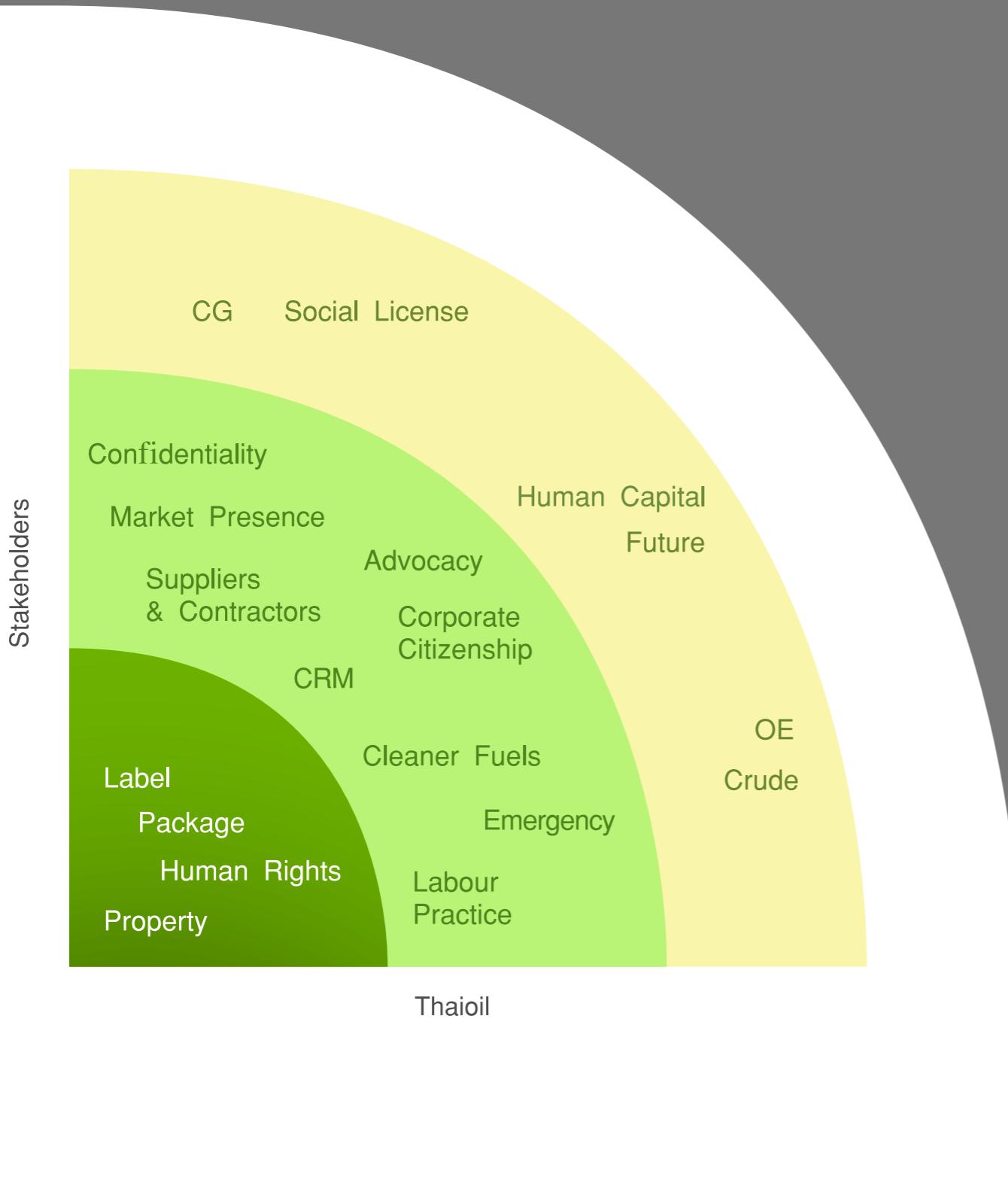
Awareness of the social and environment change has been raised in the recent decades as witnessed by a number of international conferences, such as, Conference of the Parties (COP) and international conference on sustainable development (Rio+20) in order to establish cooperation in dealing with issues affecting the sustainability of the world. Nevertheless, the attempts have yet succeeded satisfactorily due to the complexity of the environment and social issues, the association with various issues, as well as the own benefit protection by each stakeholder.

For petroleum refining business, the reserve amount of petroleum including crude oil and natural gas is expecting to dominate the world energy mix over the next 10 years. However, the price of these fuels will be increased which will bring good opportunities for alternative fuels such as bio-fuel or photovoltaic energy and energy from wind. In addition, petroleum refining which is the core business of Thaioil is subject to risk associated with crude oil price fluctuations, amount of reserved oil at the refinery that must comply with the law and the gross refining margin that is regulated by the government. Thaioil has realized the importance of managing these factors to be able to achieve sustainable operations and business growth.

In addition to sustainability trend, Thaioil also focuses on understanding and responding to the expectations of our relevant stakeholders. Each department will identify, prioritize and manage the expectations of their stakeholders, which is summarized as follows.

Stakeholders	Involvement Channels	Expectation
Shareholders, money-lenders, financial institutions	<ul style="list-style-type: none"> Annual meeting Quarterly corporate performance review Financial analysts meeting Investment exhibition (Road show) Preparation of the annual report 	<ul style="list-style-type: none"> Good return on investment consistently Good corporate governance Sufficient amount of disclosed information for the investment decision
Customers	<ul style="list-style-type: none"> Communication as planned Monthly customer meeting Annual satisfaction survey 	<ul style="list-style-type: none"> High-quality products are delivered as agreed Good after-sales service Trading can be done quickly
Partners, contractors	<ul style="list-style-type: none"> Communication via electronic media and telephone 	<ul style="list-style-type: none"> Fair and transparent selection process Acceptable payment period
Employees	<ul style="list-style-type: none"> Employee committee Monthly journal Annual survey of satisfaction and commitment of employees to the organization 	<ul style="list-style-type: none"> Good compensation Career path progression
Society, community	<ul style="list-style-type: none"> Involvement of the community as regular planned Monthly meetings of community leaders 	<ul style="list-style-type: none"> No negative impacts on the quality of life of the community No negative impact on the environment and society
Government agencies and related organizations	<ul style="list-style-type: none"> Participation in the activities and programs of the government agencies Delivering reports to the government agencies 	<ul style="list-style-type: none"> Comply with relevant laws and regulations

Thaioil has determined the expectations of these stakeholders through comparison with the challenges and opportunities of conducting business in order to analyze the factors critical to the sustainable business operation of Thaioil, which are as follows.



Good corporate governance

Good corporate governance is highly critical to the credibility of the company, particularly among shareholders and investors. The sustainability management is required to include into corporate governance.

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Preparedness for future risks

In the future, it is expected that the economic tools will be increasingly used to manage important environmental issues such as the imposition of carbon tax and carbon credit trading to mitigate the effects of climate change. Therefore, understanding, analyzing and reviewing the emerging issues are considered highly important.

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Focusing on production efficiency

In petroleum refining business, the quality of the primary products sold is similar due to the quality regulations. Creating a competitive advantage in petroleum refining business can be done by managing the production cost to the lowest level through efficient operation.

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Value chain Management

Almost all of the purchase volume of Thaioil are crude oils to be refined into fuel. Therefore delivery of crude oil to the refinery must be adequate and meet the schedule in order to prevent interruption of production. In addition, measures to reduce the risk due to the volatility of oil prices are another factor that is critical to the survival of the company.

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Employee readiness to support the business plan

Human resource is the most important element for every organization. It needs the skills and capabilities of employees and leadership of the management that are considered vital to support the execution of business strategy.

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Acceptance for proceeding from the community

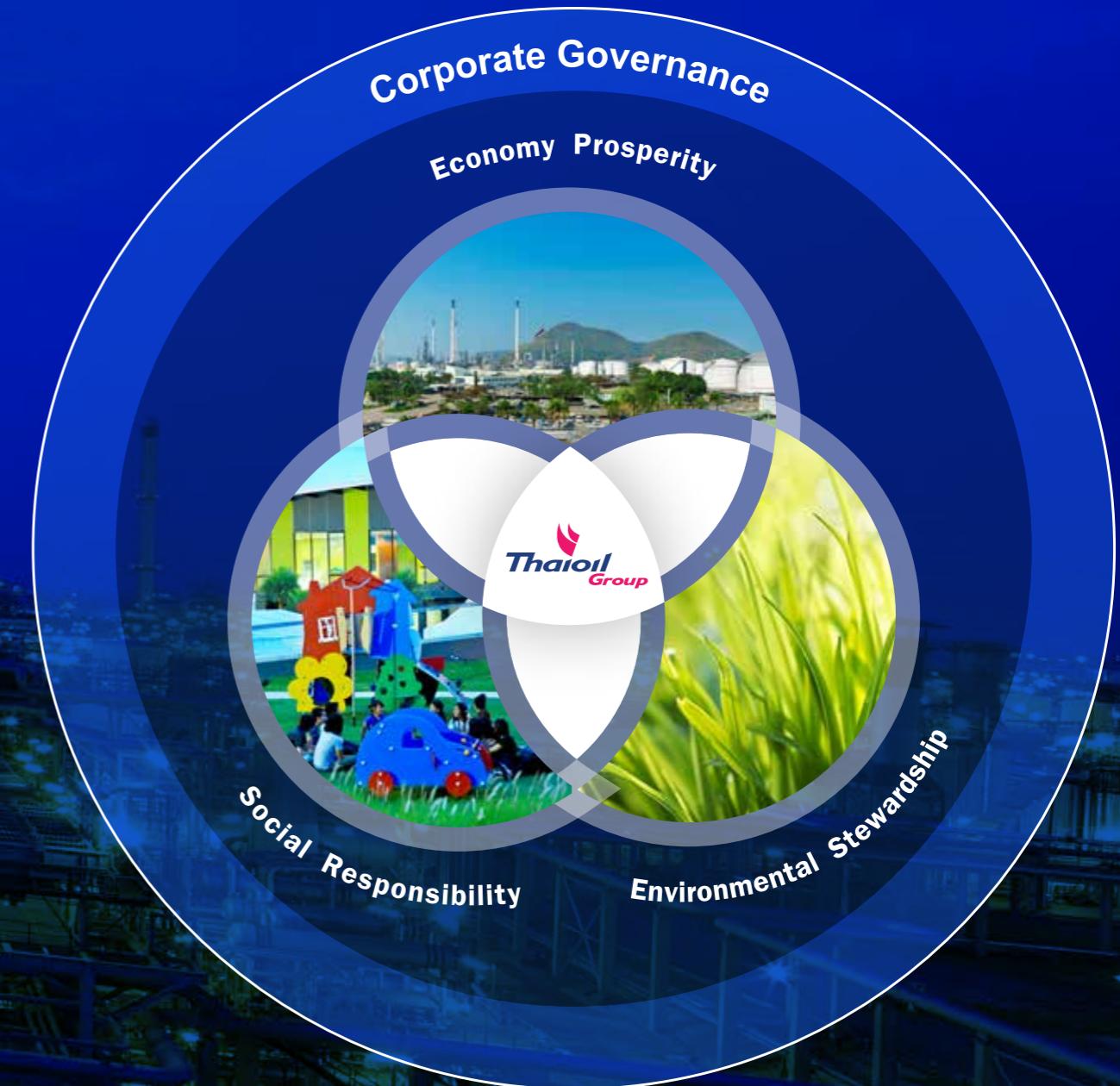
Building relationships and promoting quality of life for communities, including assisting in the development of local economies and societies allow the company to be accepted by the community and society as a positive influence and reduce the risk of interruptions to business operations and growth.

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The Sustainability at Thaioil

Thaioil's strategy for sustainability is to embed the sustainability elements into our business operation, which includes good governance, risk management, internal system development and performance assurance, to manage risks of the current business operation and future growth.



3. The Sustainability at Thaioil

Thaioil Group has integrated the environmental and social considerations into our business processes, from the responsibilities of the Board of Directors, risk management, business ethics, structure role & responsibilities as well as monitoring, reviewing, and reporting information to the public.

Sustainable business

is different in each organization, which generally has a common aim to take the environmental and social aspects into considerations together with the pursuit of economic returns. For Thaioil, the sustainable business operation is the business operation that enables sustainable growth at Thaioil in the future through inclusive of environmental and social factors into our risk management and possibly turning it into business opportunities, while conducting our business with social responsibility in order to achieve the state of sustainability.

Referring to Thaioil's business operation, the environmental and social issues are taken into account with economic issues for the entire business process, including corporate governance, risk assessment, code of business conduct, management system within the organization and monitoring operations.

Corporate governance

Sustainable development has been defined as part of the mission and values of Thaioil that are used as guidance and practices in corporate governance from the level of the Board of Directors to the general staff by having the corporate governance manual based on the principles and practices of good corporate governance prescribed by the Stock Exchange of Thailand and the Organization for Economic Cooperation and Development (OECD).

In 2012, Thaioil arranged 10 meetings of the Board of Directors, 1 independent Board meeting, and 1 meeting of Board of Directors with no management for independent discussions among the Board of Directors in any matters that were beneficial to the development and improvement of the corporate governance of the company.

The company's corporate governance has been evaluated as in the level of "Excellence" by Thai Institute of Directors (IOD) and the company has been awarded the Top Corporate Governance Report Awards in the SET Awards 2012 by the Stock Exchange of Thailand (SET).

More detail in good corporate governance is contained in the annual report and website
<http://www.thaioilgroup.com/th/cg/index.php>

The Board of Directors has appointed a good Corporate Governance Committee which consists of non-executive directors of not less than 3 members; majority is the independent directors in accordance with the Corporate Governance Committee Charter of the company. The duties and responsibilities of Corporate Governance Committee are set out in the Corporate Governance Committee Charter and disclosed in the company's website at www.thaioilgroup.com.

In 2012, there were totally 3 meetings of the Corporate Governance Committee and has completely performed the duties as set out in the Corporate Governance Committee Charter with the considerations of an approval of the major activities and programs of the corporate governance which are summarized as follows.

1) Considered approval of the 2012 Corporate Governance Plan of the company in order to the company's business operation to be in accordance with the principles of corporate governance, and to improve the corporate governance of the company to the international equivalent, to build trust among shareholders and all stakeholders as well as to instill values in ethical business practices strictly.

2) Considered approval of the revised policies, principles and practices on corporate governance of the company with reference to the recommendations of the Thai Institute of Directors according to the assessment survey of the principles of good corporate governance of the listed companies for the year 2011 such as an opportunity for shareholders to propose the meeting agenda and nominate the qualified person to be elected as directors by reducing the proportion of shares held by the shareholders of not less than 5 percent to not less than 0.5 percent, and the determination of the term of holding a position of director and so on.

3) Considered approval of being a member of the United Nations Global Compact which will enable the company to be able to apply 10 principles of the United Nations Global Compact which has been internationally recognized in promoting good governance on human rights, labor, environment and anti-corruption, into the business operations.

Sustainable Development Taskforce (SD Taskforce) has been appointed to promote sustainability movement in Thaioil by having the Manager of Strategic Planning Division as the Chairman of Task Force, and having managers and representatives of relevant departments as the taskforce. In recent years, the taskforce has been working together on driving various projects to increase its operational efficiency such as a study to establish strategies in climate changes, application of ISO 26000 as guidance for the implementation of corporate social responsibility and communications to build awareness and understanding of sustainable development within the organization, etc.

Risk Management

The risk management structure of Thaioil consists of the Board of Directors, Risk Management Committee, Risk Management Steering Committee and Risk Management Committee-Discipline. Each Board of Directors will have the coherent roles to ensure that the company has the risk management in all key activities and considers all the risks involved and fully connected to all affiliates. The Risk Management Steering Committee is responsible for establishing guidelines, providing support and feedback to the management in order to ensure the implementation of effective risk management throughout the organization, and reporting to the Risk Management Committee. The Risk Management Committee-Discipline consists of 5 sub-committee as followed :

- 1) Strategy/Business development Risk Management Committee
- 2) Marketing Support Risk Management Committee
- 3) Operation Risk Management Committee
- 4) Financial Risk Management Committee
- 5) Corporate Management Risk Management Committee

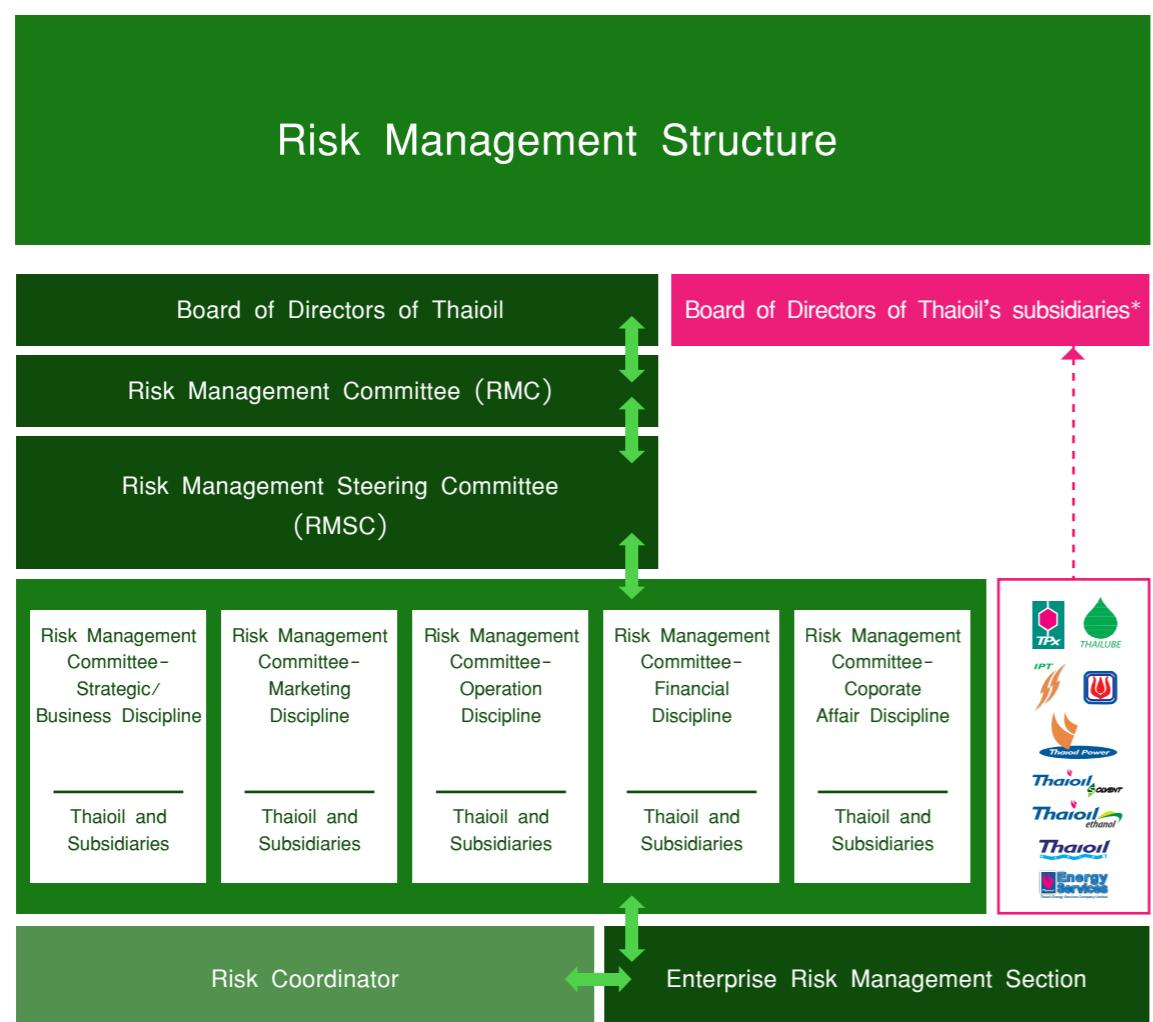
and the Board of Directors from 9 subsidiary companies that are responsible for considering the risks and control measures or plan for the risk reduction in each aspect in order to plan the risk management in each area of Thaioil into the same direction and in line with the business goals of Thaioil.

The Risk Management Committee-Discipline shall report to the Risk Management Steering Committee and the Board of Directors from 9 subsidiary companies to report in the management review meeting including the Board of Directors of its subsidiaries.

In addition, Thaioil has the risk management framework that is in accordance with the ERM COSO, which is an international standard. The company has prepared and distributed the risk management manual to all departments under Thaioil Group in order to be able to assess the risks on the same basis both in terms of methods and scoring the risk. The Risk Management Information System was developed to store risk information of all departments and to send a timely notification for monitoring and reviewing the risk management plan. Thaioil's risks are divided into

- Business and Strategy Risk
- Commercial and Marketing Risk
- Operation Risk
- Financial Risk
- Corporate Affair Risk

Moreover, Thaioil also conducted an assessment of environmental and social risk that may affect the business operation such as the oil spill and the refinery blockade by the community.



*subsidiaries : subsidiaries (TPX, TLB, TM, TS, TET, TES, SAKC) and joint ventures (IPT, TP)

Thaioil Group's Code of Conduct

Thaioil Group's Code of Conduct was developed to specify the expectations on business operation, and the practice of the Board of Directors and all employees which includes economic, environment, social and corporate governance. In addition, the Business Code of Conduct Manual is also delivered to Thaioil's subsidiaries, partners and contractors in order to understand the business operation standards of Thaioil. The contents include legal and human rights, culture and tradition, political neutrality, conflict of interests, related items, confidentiality, the use of internal information, giving/receiving gifts, marketing communications, intellectual property, information technology and communications including the other key policies. In this regard, if there is a breach of the code of conduct, rules or policies on the prevention of corruption and bribery, Thaioil shall investigate and/or punish under the legal provisions as stated in the company's Corporate Governance Manual.

Thaioil Group's Code of Conduct and complaint channel are disclosed in the annual report and website <http://www.thaioilgroup.com/th/cg/index.php>

Total Quality Management

Thaioil has implemented the KFA (Key Focus Area) which is a plan that allows employees in all level to participate in the development and improvement of the company. This includes the optimization of the production process and energy conservation. The details are as follows.

Operational Excellence	Build confidence in the delivery of products
Customer Focus	Instill the culture of customer service both internally and externally
Innovation & Growth	Support business growth through innovation
Sustainable Development	Promote and support sustainable business operation
High Performance Organization (HPO)	Promote the creation of good and great person and commit to the organization

Every KFA has its own responsible person and has a set of specific targets.

In addition, Thaioil has also developed and administrated the management system according to the criteria of business excellence since 2008 by Thailand Quality Award (TQA) in accordance with the Malcolm Baldrige National Quality Award to ensure that Thaioil has operated the business in a systematic manner and work together effectively towards the same goal. Moreover, there are continuous learning and improvement in the elements of organizational leadership, strategic planning, customer oriented, analysis measurement, knowledge management, personnel focus, operations and results oriented. In addition, Thaioil is currently under strategic review of the sustainable business operation in order to determine the work procedures in detail to bring Thaioil up ahead and preparation of the sustainable management manual to organize the Thaioil Operation in the present and in the future.

Compliance Assurance

Thaioil has operated the business to ensure compliance with management framework and relevant requirements which consists of;

- Allowing new employees to sign to acknowledge and comply with the Corporate Governance Manual and when there is an amendment of the manual.
- Allowing the Board of Directors and all employees to sign in a Conflict of Interest Form regularly.
- Conducting the Business Code of Conduct Training for employees that include the issues of anti-corruption and human rights through CG E-Learning system, covering 92 percent of employees or 1,510 hours.
- In terms of the high risk activity, in recent years, 15 units in 8 businesses were investigated and did not find the significant inconsistent issue by using COSO in monitoring compliance with regulations and internal control.
- The investigation by certified public accountant that is independent and has been appointed by the General Meeting of Shareholders for the year to audit and express an opinion on the financial statements of the company.
- The certification of compliance with the ISO 26000 in the organizational level by the external agency.
- The investigation on quality management system standards, safety, occupational health and environment by the external auditor who is independent to ensure the quality system, occupational health, safety and environment including testing laboratory.

In 2012, there was no significant inconsistent operation with a legal provision or complaint in the environmental law, labor law and human rights, anti-competitive law, anti-competition law, advertisement law, marketing communications as well as having no loss of customer data.



Climate Change

Climate strategy for the sustainability of our business consists of two approaches:
climate change mitigation and climate change adaptation

>82
million Baht

Investment in energy conservation

~315,000
GJ

Of energy saving from energy
efficiency improvement and
hydrocarbon loss prevention
projects



~24,400
tons

Of carbon dioxide emission reduction from energy efficiency
improvement and hydrocarbon loss prevention projects

What we did in 2012	Status	What we plan to do in 2013
Scenario analysis on potential impact from carbon taxation	Achieved	Roll-out 5-Year Energy Master Plan
Feasibility study in carbon reduction opportunities	Achieved	Develop green house gas emission reduction plan by aligning with energy efficiency target and plan of the Company.
Energy reduction target setting	Achieved	Conduct feasibility study on improving water efficiency in the refinery

Management Approach

Climate change mitigation and climate change adaptation of Thaioil begins with development of greenhouse gas accounting, energy intensity improvement plan and financial analysis of climate change risk.

Development of greenhouse gas accounting in line with international standards

Thaioil has monitored greenhouse gas emission continuously since 2004 by using Shell Group HSE Performance Monitoring and External Reporting Guide. Currently, we are working on improving our greenhouse gas accounting system to be in line with the Greenhouse Gas Protocol.

Energy efficiency management

Thaioil manages energy efficiency through Energy and Loss Committee which consists of representatives from all relevant departments including operation and supporting functions. The committee is responsible for development of Energy Master Plan, identifying energy conservation measures and prevention of hydrocarbon loss and monitor energy consumption and hydrocarbon loss against identified target. In 2012, Thaioil implemented numbers of energy conservation projects and activities namely

- Improving heat transfer efficiency of Convection Bank in furnace HDT-1 and CDU-1 units;
- Cleaning up operating furnace in refining unit 2 to reduce fuel consumption;
- Steam Air Decoking at furnace of HVU-1 to reduce temperature of furnace shell resulting in heat loss reduction and fuel saving;
- Replacing insulation in furnace CDU-2 unit with the result from in-house innovation of double insulation; and
- Optimizing Furnace Cross-over Steam at furnace in refining unit 3 to maximize the usage of steam.

Results from energy conservation and hydrocarbon loss prevention projects account for 315,000 GJ energy savings, or equivalent to 200 million Baht of saving. Such projects reduce greenhouse gas emission by 24,400 ton of carbon dioxide equivalent.

Climate change risk assessment

In addition to risk management in terms of climate change risks, energy price fluctuation and physical risks associated with natural disasters, Thaioil has also analyzed various scenarios assuming different pricing levels of carbon taxation are to be implemented by Thai government.

4.1 Energy Efficiency and Climate Change Mitigation

Thaioil commits to refine energy for society while minimizes potential impact on climate change from our operation through efficient processes. Thaioil has developed a plan to reduce direct and indirect greenhouse gas emission generated by electricity and steam purchased from other entities. This will allow Thaioil to be 100 years organization and leading companies in the region in sustainable manner.

Climate change or global warming is a result of greenhouse gas emissions into the atmosphere. There are several type of greenhouse gases; the most well-known is carbon dioxide, typically generated from combustion activities. It is also believed that higher sea level from ice melting at the Antarctica and more frequent natural disasters are the results of climate change. Therefore, climate change awareness has become a global agenda as demonstrated by the 2012 United Nations Climate Change Conference (COP 18), an international collaboration to control the global temperature increase. Recently, there are many nations applying economic measures to control or manage greenhouse gas emission into the atmosphere, for example carbon taxation in Australia, initiative on carbon crediting in China and several states in the United States of America and the European Union. Therefore, it can be expected that economic or legal measures will be applied to control greenhouse gas emission in the industrial sector in the near future.

Our Commitment

To optimize natural resource usage and to minimize greenhouse gas emission from our combustion, Thaioil has set Energy Intensity Index (EII) target to reduce EII for 1 – 1.5 per year in order Thaioil to achieve top quartile in energy efficiency in 2018.

Performance Highlight

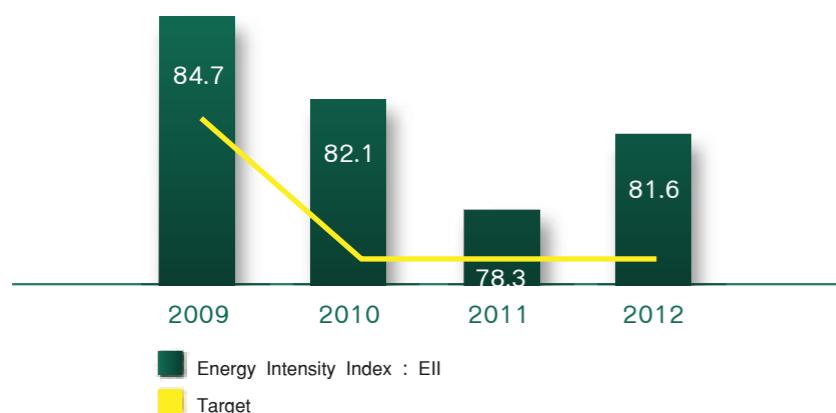
Overall performance regarding climate change can be monitored through many indicators, for example Energy Intensity Index as methodology of Solomon Associates to reflect actual energy efficiency on a refinery, and Corrected Energy and Loss Index.

In 2012, Energy Intensity Index (EII) of Thaioil was 81.6 which is 3.3 points higher than the EII in 2011. This is a result from major turnarounds in many core units including the Crude Distillation Unit (CDU), High Vacuum Unit (HVU) and Fluid Catalytic Cracking Unit (FCCU).

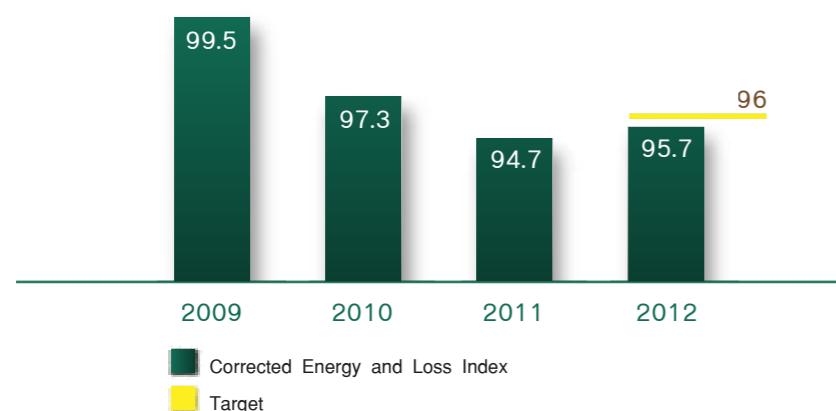
Therefore, refinery intake volume was reduced which resulted in running the process at a lower efficiency.

In addition, Thaioil shutdown the main power generator for maintenance whereby smaller power generators were used to supply electricity and steam over the shutdown period. This also resulted in higher energy consumption. Considering Corrected Energy and Loss Index (CEL Index) which is another key performance indicator. CEL Index in 2012 was slightly higher than 2011 but was still within the defined target range. The reason was Thaioil could control hydrocarbon loss at very low levels.

Energy Intensity Index (EII)

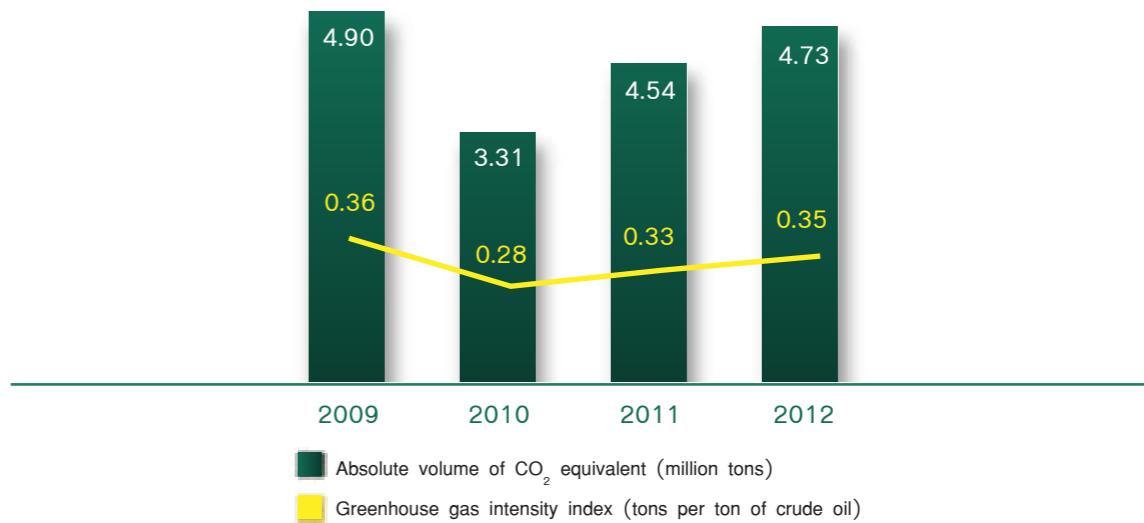


Corrected Energy and Loss Index (CEL Index)



Absolute volume of greenhouse gas emission and greenhouse gas index per ton production in 2012 increased slightly from 2011 due to several core production units entering steady state after major turnaround. However, Thaioil is in the process to study and set a long term greenhouse gas target.

CO₂ Emission



Ethanol Business of Thaioil

The use of biofuel from renewable raw materials contributes to a reduction in non-renewable high carbon footprint fossil fuel extraction. Thaioil has monitored the world energy situation and considers that crude oil prices to be fluctuated and continuously increasing. This opens opportunities for renewable energy especially biofuel in which ethanol is a biofuel that Thailand has good potential from the abundance of raw materials. Therefore, Thaioil has established Thaioil Ethanol Ltd to capture opportunities from such factors that contribute to national energy security and respond to government policy promoting the use of alternative fuels. The Ethanol business of Thaioil is pure ethanol production to blend with base gasoline for the production of gasohol. Thaioil engages in ethanol business by joint venturing with business partners in three ethanol production plants with the combined production capacity from sugarcane and cassava of 800,000 liters per day. Demand in alternative energy of Thailand nowadays depends on government policy. However, the trend in alternative energy use has been rapidly growing in the past couple of years and this trend is expected to continue into the future.

The Sustainability factor of ethanol business mainly rely on raw material procurement which Thaioil has procurement criteria that requires raw materials to be harvested from agriculture land areas as opposed to bio-diversified areas. In addition, Thaioil has been working with farmers on knowledge sharing for energy crop growing technique and harvesting plan to ensure the quality of raw materials feeding into our facilities.

Blending of ethanol in base gasoline is roughly estimated to reduce gasoline consumption in Thailand by about 10 percent or 25 million liters per month. This saving is equivalent to reducing the volume of imported fossil fuel by approximately 4,000 million Baht. Furthermore both direct and indirect economic distribution in agriculture communities is also another direct result of transferring knowledge and experience in producing and the commercialization of ethanol. The knowledge and experience is expected to play a significant role when the proportion of alternative energy use is larger in the world energy mix.

4.2 Climate Change Adaptation

Thaioil's climate change adaptation is focusing on water resource management in normal condition and drought to ensure continuity of our business.

Our Commitment

Thaioil focuses on mitigating risk and reducing potential impact from water supply to our operation.

Management Approach

Currently, Thaioil receives raw water from 2 sources located in Chonburi including 1) Bang-pra Reservoir under the management of the Royal Irrigation Department and 2) Nong-kor Reservoir under the management of East Water Plc. Water sourced from the two reservoirs accounts for about 50 percent of overall water consumption, which is then utilized as Boiler Feed Water for producing steam and use in utility systems. Another portion of water consumption comes from 6 desalination units, which also supply water to the boilers. Thaioil runs 4 desalination units under normal circumstances.

In order to prevent and minimize the impacts of insufficient water for production process, Thaioil has implemented water management strategy by involving with PTT Plc, government agencies such as Royal Irrigation Department Area 9, and water supplier (East Water) to:

- Coordinate in water supply planning and monitoring of water availability to ensure sufficiency of water supply;
- Implement a 3Rs (Reduce, Reuse and Recycle) strategy to reduce water usage and wastewater discharge;
- Conduct feasibility study on improving water efficiency and other activities for the benefits of company and local communities such as watering green areas with treated wastewater.

To ensure Thaioil has sufficient water supply for production processes, Thaioil has engaged the working committee of PTT Group water management since 2005 with representatives from companies in PTT Group and a representative from PTT as acting chairman.

Thaioil is also involved with Provincial Waterworks Authority, Royal Irrigation Department Area 9 and East Water Plc to set up a quarterly war-room to monitor and estimate water availability in reservoirs and develop a water management plan as Bang-pra reservoir is an important source of water supply in Chonburi Province.

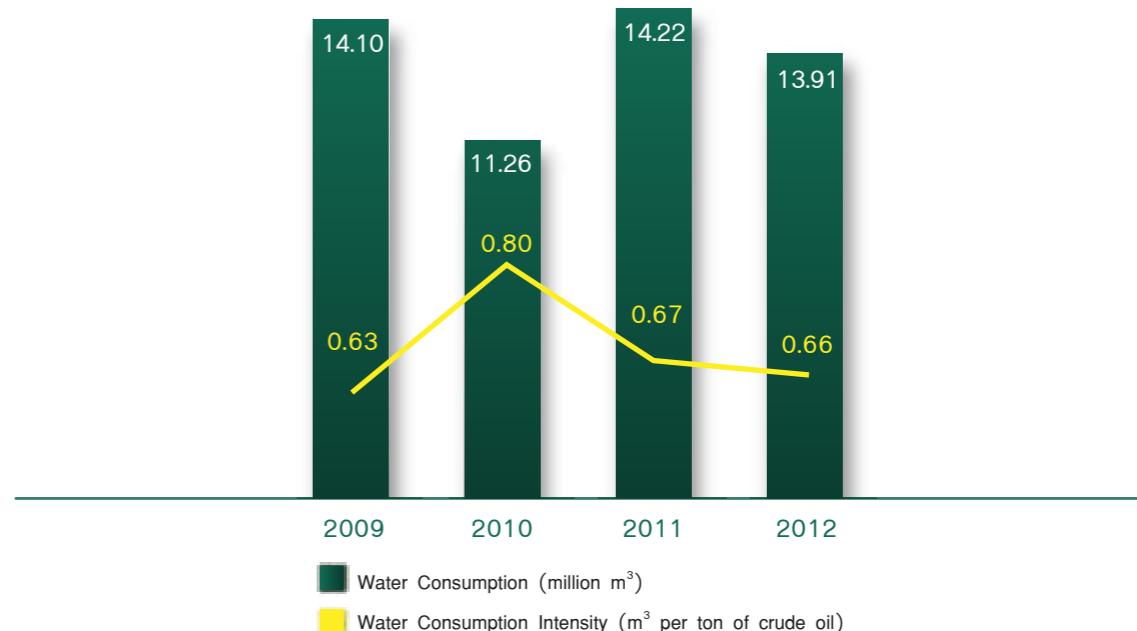
Apart from coordinating efforts with government agencies, communities and companies in water management outside of our operation, Thaioil also has an emergency response plan in case of a drought affecting the volume of water in the reservoirs. Thaioil conducted multiple scenario analysis in case of insufficient water supply which generated the result that Thaioil could continue normal operation even at 30 percent of industrial water supply due to our 6 desalination units that can supplement the lost volume. The desalination units alone could not sufficiently supply water for the production process if 50 percent of industrial water supply is unavailable. In this

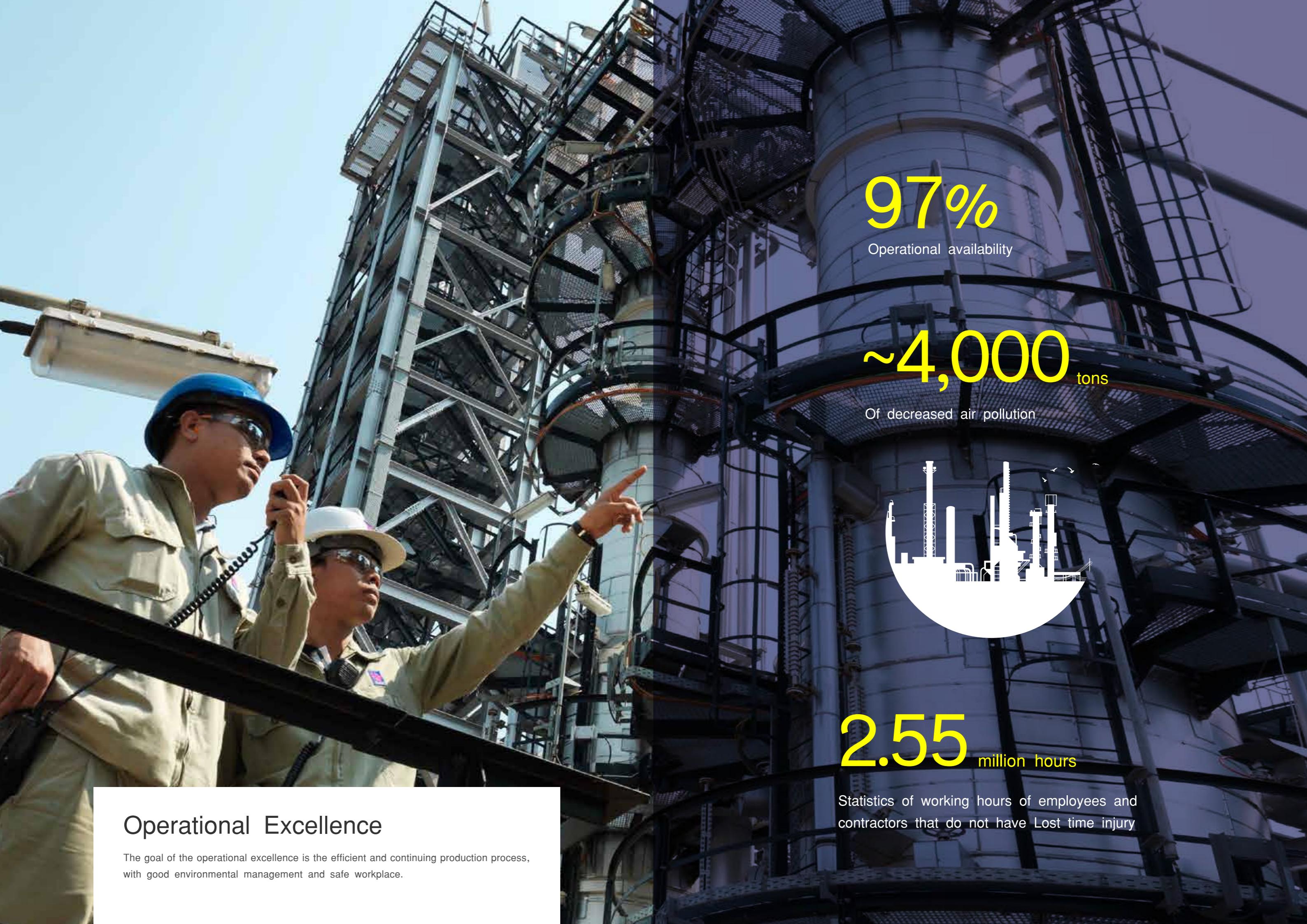
case, Thaioil is still able to use emergency waste supply from our internal holding basin, rain water holding pond and treated wastewater from Effluent Treatment Plant (ETP). This amount of water including contribution from all desalination units could sustain production processes for approximately 3 months.

Performance Highlight

3R Strategy was initially projected as being successful in reducing absolute water consumption and water intensity index. In 2012, Thaioil Group consumed 13.91 million cubic meters. 58 percent of water comes from surface water whilst the remainder comes from seawater. Water consumption in 2012 was 300,000 cubic meters less than the consumption in 2011, while water intensity per production unit improves from 0.67 in 2011 to 0.66 in 2012.

Water Consumption



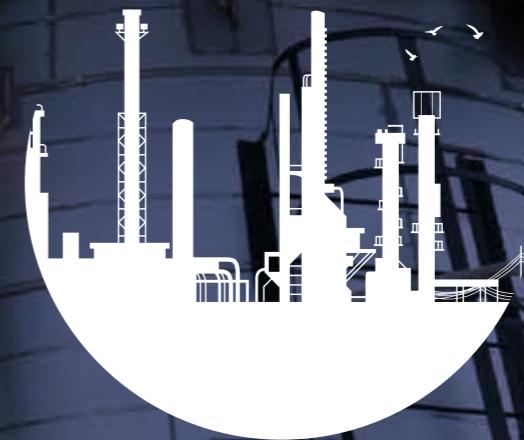


97%

Operational availability

~4,000 tons

Of decreased air pollution



2.55

million hours

Statistics of working hours of employees and contractors that do not have Lost time injury

Operational Excellence

The goal of the operational excellence is the efficient and continuing production process, with good environmental management and safe workplace.

What we did in 2012	Status	What we plan to do in 2013
Operated according to the 5-year environmental master plan	Achieved	Enhance ESP (Ensure Safety Production) operations to organizational level in order to achieve Zero Unplanned Shutdown
Implemented the Phase II soil and groundwater quality analysis project	Achieved	Determine the effectiveness of environmental performance
Studied ways to improve wastewater treatment to increase the amount of recycled water	Achieved	Build an information management system related to the environment
Operated according to the 5 year operational plan of occupational health, safety and fire protection	Achieved	Implement the soil and groundwater quality analysis projects continuously for phase 2 (for 3 years)
Developed the continuity business plan that can enhance the operational management to cover the emergencies in Sriracha	Achieved	Study and make the Ambient Air Model in areas surrounding the project
Conducted the internal assessment to determine the leadership level of safety to cover more groups	Achieved	Study the guidelines for zero waste to landfill management
		Develop the organizational culture in terms of occupational health, safety, environment and stability continuously
		Enhance the level of security in production process in phase 2
		Development of emergency and crisis response in phase 2

5.1 Building the reliability and flexibility in production

Reliability and flexibility in production are two distinct areas of Thaioil that set us apart from our competitors in operating effectively. The reliability of production allows Thaioil to response to the needs of the market continuously, and the flexibility in production allows Thaioil to halt the production unit by section and handle various crude oils. Thaioil will strengthen this advantage even further.

In the refining business particularly an oil refinery with a capacity of 275,000 barrels per day accounting

for 26 percent of oil in Thailand, the reliability of the production unit is the most important operational factor. The interruption of the refining process may trigger national energy security issues in terms of the adequacy of the amount of oil that can be used within the country, and oil supply to replace the lost production.

Our Commitment

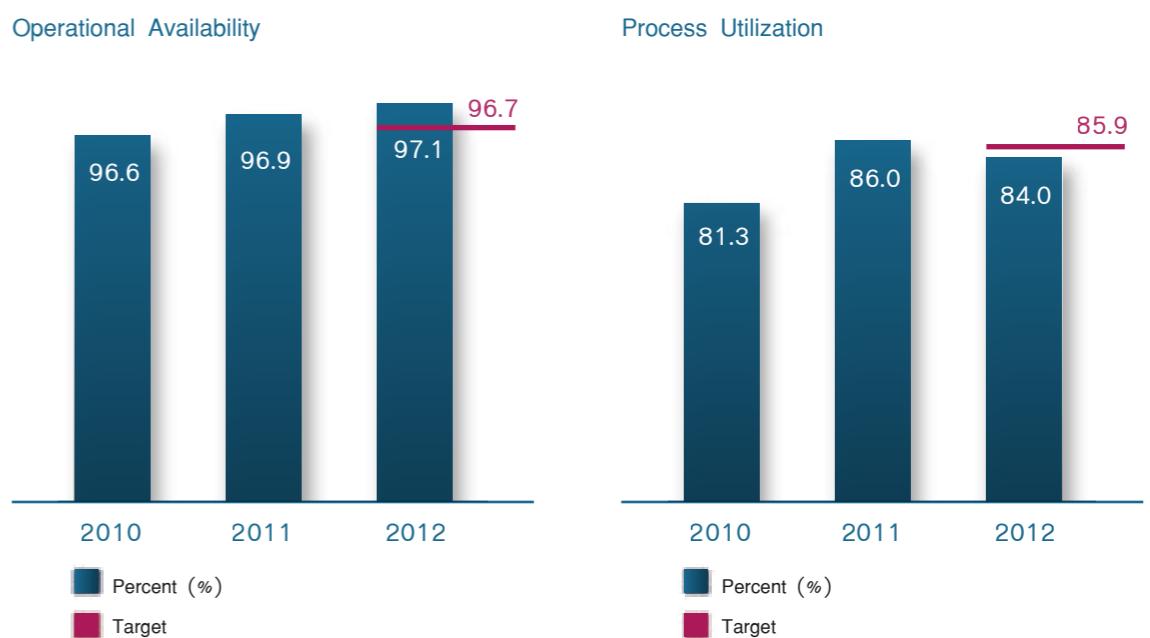
Thaioil aims to be in the Top Quartile of Solomon in the Operational Availability and Process Utilization by 2020.

Management Approach

To achieve this objective, Thaioil has prepared the Reliability Roadmap and Productivity and Efficiency Roadmap, including the Production Plan in advance so that the crude oil supply department is able to supply sufficient crude oil with good quality to meet the needs of the corporate production. The preparation of this plan will be the collaborative effort between the Department of Commerce, Corporate Commercial Plan, Production Plan, Products Delivery and Supply of Crude Oil.

Performance Highlight

Thaioil has defined a target of striving for the Top Quartile in the operational aspects of reliability and flexibility. The performance in 2012 was satisfactory with Operational Availability of approximately 97.1 percent which was higher than the target of 96.7 percent. However, the Process Utilization was 84.0 percent which was slightly below the target of 85.9 percent due to major turn around in the main production units which resulted in a decrease in the intake.



Note : The Operational Availability and the Process Utilization were obtained from the calculation of Solomon Associates and verification of Solomon Associates every two years.

Hydrocarbon Loss Index



In view of the prevention of the loss of hydrocarbons, Thaioil achieved good results. The Loss Index was 37.7 which was in line with the control target of 54.8; this loss was equivalent to the loss rate at only 0.29 percent by weight of the crude oil which was in line with the control target of 0.36.

5.2 Environmental Management

The environment management of Thaioil Group is important for the prevention of impact to the community and environment. Currently, Thaioil has applied the environmental management standard ISO 14001, for managing the environment in the area of operations. We also developed the Environmental Master Plan for the year 2012-2016 as an operational guidance tool to strengthen the operational efficiency. In recent years, Thaioil achieved a decrease in the overall emissions rate.

Thaioil's oil refinery and its affiliates are located in an area surrounded by natural resources and communities including Khao Phu Bai, coastal zones and seven communities in close proximity. Hence, Thaioil has committed to preserve natural resource and environment in these areas in order to minimize the impacts on natural resources, environment and communities.

Our Commitment

Thaioil Group is committed to manage impacts in order to protect the environment and communities by monitoring the operations to comply with the law and improving our environmental operations continuously.

Management Approach

The preparation of the environment master plan from 2012-2016 is obtained from a study on the trends of the industry, law, discussions with stakeholders and the consideration of universal best practices. Moreover, Thaioil has also applied these key issues in the Dow Jones Sustainability Index (DJSI) and the environmental indicators from Global Report Initiative (GRI) to be used to determine the direction of the environmental management of Thaioil Group. Thaioil Group's environmental management consists of;

Environmental Governance Structure

is a review of the environmental governance of Thaioil Group. Currently, ISO 14001, the environmental management standard that has been certified by external authorities is part of the Integrated Management System which covers all key operational areas of Thaioil.

Environmental Performance Standards

is an international guideline for environmental operations implemented throughout Thaioil Group. Knowledge Management is applied as a tool to gather ideas about the concepts of environmental features (IDEAx Go Green) shared by Thaioil Group's employees. The Go Green idea will be selected by using systematic process and implemented throughout Thaioil Group.

Climate Change Strategy

is the understanding of the potential impact of climate change on operations in order to reduce these risks. In recent years, Thaioil has begun to study the risks of climate change in terms of financial aspects, and prepare a green house gas emission reduction plan by aligning with energy efficiency target and plan of the Company.

Management of Water Resources

is to manage water resources adequately in light of the production process without affecting the use of water of the surrounding community both in normal conditions and in a wide range of potential water shortage scenarios. Apart from the issue of volume, management of water resources also includes the cost management in order to reduce the impact on operating costs due to the high cost of supplying water.

Effectiveness of the Environmental Performance

In addition to complete compliance with the mitigation and monitoring measures as defined in the EIA report and environmental laws, Thaioil also takes into account the enhancement of various production processes that improve environment quality. In 2012, Thaioil has undertaken actions to reduce the air pollution by implementing major projects designed to control sulfur content in the fuel from the original source and the improvement of benzene tanks to reduce emissions of volatile organic compounds. For the improvements to reduce water pollution in this year, Thaioil has explored the reuse of water from the wastewater treatment process using Reverse Osmosis (RO). In terms of reduction of the industrial waste, Thaioil has implemented the reuse project by setting a target for the year 2012 related to the proportion of waste to landfill that must not exceed 5% of the total industrial waste of the company. This will lead to Zero Waste to Landfill, which is our long-term goal in the next 5 years.

Biodiversity

Thaioil recognizes the impact of wildlife habitats and natural resources around the refinery. Therefore, the company has implemented a few projects and use study results to develop an ecosystem management plan such as a study project on macaque monkey behavior, the exploration of the ecology of Khao Phu Bai, the improvement of the landscape and building the atmosphere around the office to be in harmony with nature and motivate the consciousness of the nature among employees.

Plan for managing partners and contractors

is the operation expressing social responsibility in managing social and environmental impacts from the operations of partners and contractors by promoting and encouraging partners and contractors to participate in the CSR-DIW continuously in order to express a clear intention towards social responsibility.

Environmental audit

is the assessment under the environmental management framework (ISO 14001) that Thaioil has implemented with high priority. As a result, it found no major non-compliance in the most recent assessment in 2012.

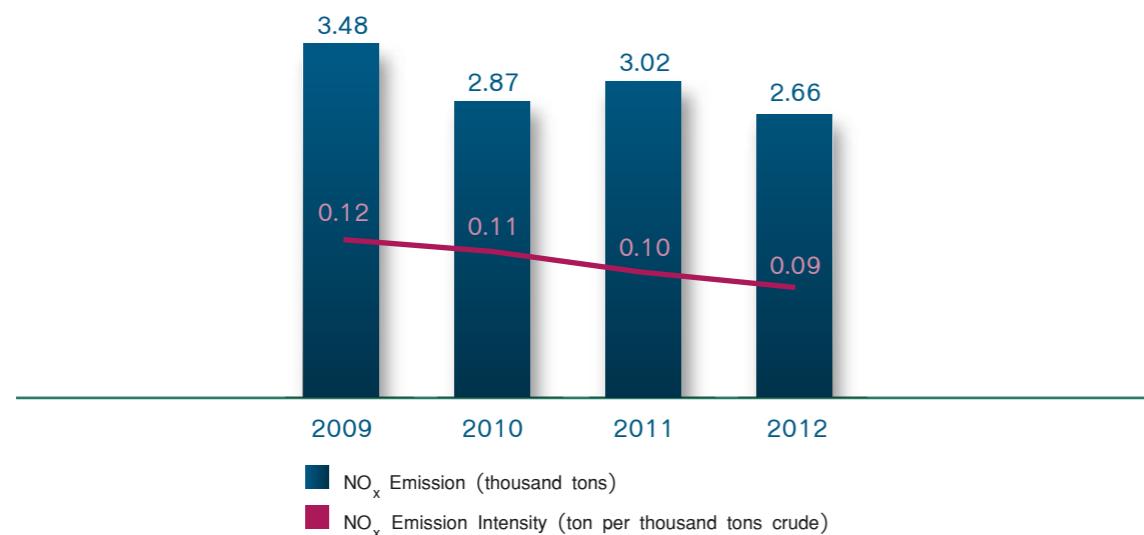
Driving the environmental plans through information systems

is the operation to place environmental information to continue to support environmental management standards, which is currently under development including a preparation of Greenhouse Gas Inventory and Environmental Dashboard.

Performance Highlight

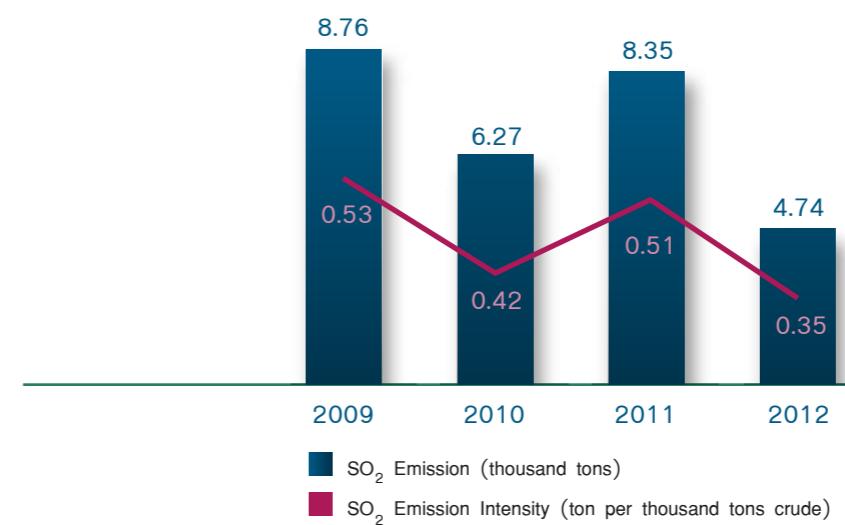
In 2012, no non-compliance against environmental legislations and monitoring measures from Environmental Impact Assessment (EIA) report was identified during the compliance audit conducted by the licensed consultant. The results also showed that all pollution emissions and discharges were in compliance with environmental standards of Thailand, which can be summarized as follows.

NO_x Emission



The amount of nitrogen oxide was continuously reduce both in the terms of absolute volume and intensity per unit of production. In 2012, nitrogen dioxide emission was 2.66 thousand tons and the intensity was 0.09 tons per thousand tons of crude oil, due to the investment in the modification of Heat Exchangers and Burners to Ultra Low NO_x Burners.

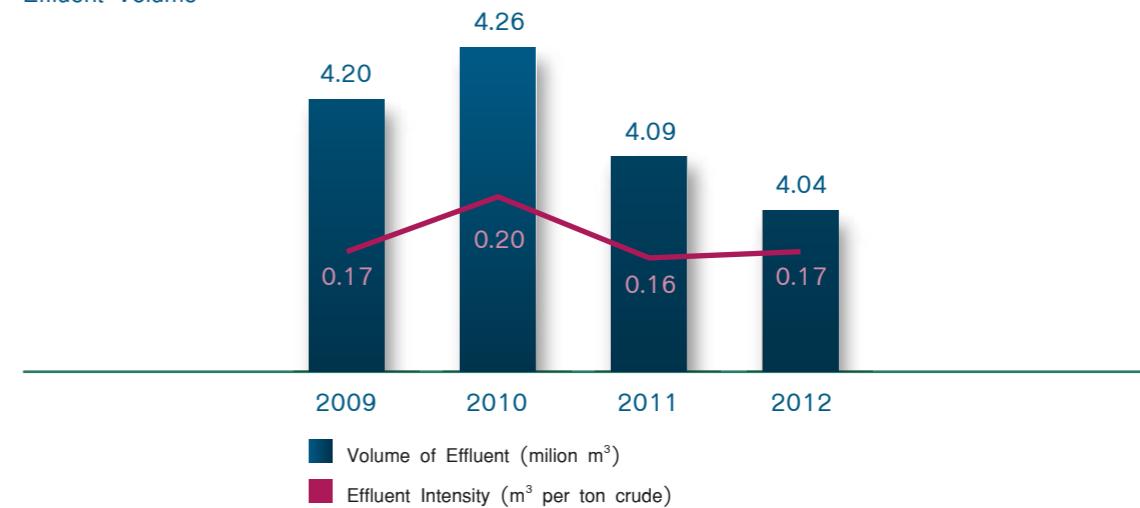
SO₂ Emission



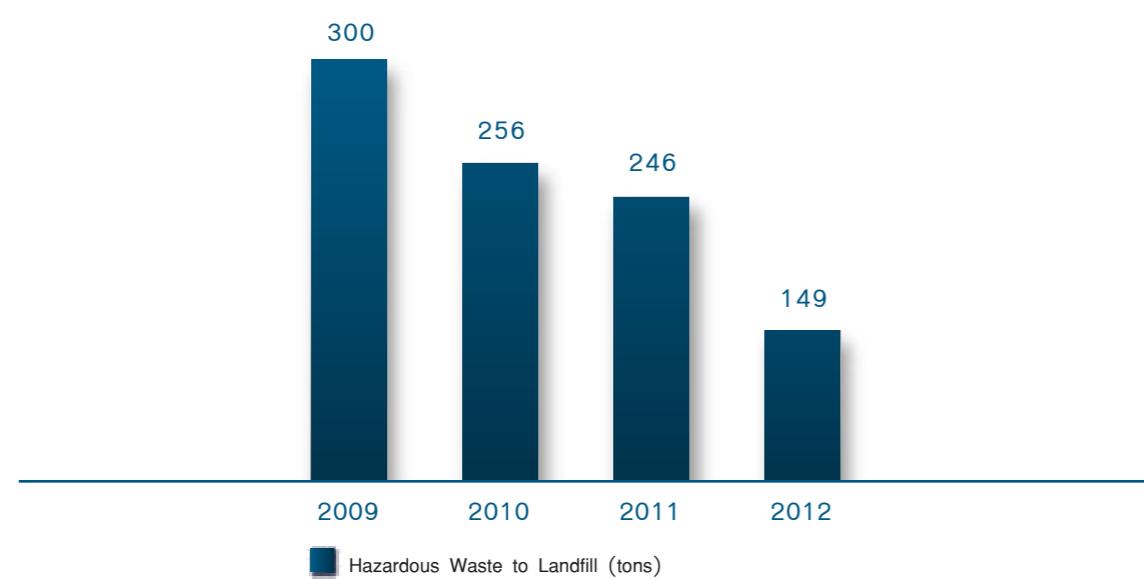
Sulfur dioxide from the flue gases emitted in 2012 were significantly lower than 2011 both in the terms of net quantity and quantity per unit of production, due to in 2012, Thaioil increased the proportion of natural gas usage as a fuel.

In 2012, Thaioil changed measurement methods for VOCs (Volatile Organic Compound) from the calculation of Emission Factor to the actual measurements. Therefore, it has not been presented a comparison with the past results, but will continue to present the amount of volatile organic compounds by the actual measurement method. For the amount of volatile organic compounds that are detected, the company will request for certification by an outside agency in the future in order to ensure that the information is accurate and reliable.

Effluent Volume



The wastewater volume through the treatment system of Thaioil in 2012 was about 4.04 million cubic meters, a decrease from the previous year (4.09 million cubic meters). This was consistent with a decrease in amount of water use as well. (Details on water risk management are shown in chapter 4.) However, the amount of wastewater treated per unit of production increased due to the major turnaround in 2012, resulting in a decrease in the intake availability.



Thaioil Group has applied 3R Principles (Reduce, Reuse and Recycle) together with the cost of the disposal under the Waste Management Committee's responsibility. The operation according to the reduction target of zero waste to landfill by 2016, this has progressed very well. The amount of hazardous waste sent for disposal to landfill has declined by 39 percent in 2012 when compared to 2011.

5.3 Operations in Occupational Safety and Health

Thaioil Group aims to be the organization where no one is injured or killed at work and have good personal hygiene by creating a culture of safety for employees and contractors, developing and improving the safety level of the production process, reviewing the implementation of safety to achieve better responses to emergencies and crisis, and promoting good health for Thaioil employees. For the past year, the effectiveness of the implementation of safety and occupational health of Thaioil Group was satisfactory. However, Thaioil is still committed to better performance for employees and contractors.

Petroleum and petrochemical operations may affect safety and occupational health through many factors if operations are not good and do not meet the standard set. Therefore, the occupational health and safety of personnel are key factors to sustainable business operations. Those who work in a good safe work environment for their physical and mental health shall be able to work at full capacity, with good morale that leads to commitment to our organization.

Our Commitment

The most important thing for the Thaioil business is to be free from injury or death caused by operational procedures. Therefore, the company has committed to take a step forward to be the organization where no one is injured or killed from their work and to be a petroleum and petrochemical industry leader in safety and occupational health operational effectiveness.

Management Approach

Thaioil Group has a special unit to control and drive the implementation of occupational health and safety programs as well as designate a committee for occupational health, safety and environment in the workplace. This committee consists of representatives of employee at an operational level of not less than 50 percent of the total committee (Excluding the Chairman). The meeting is to be held at least once a month in order to share information, recommend guidelines for improvement and follow up on progress of the operations and future plans.

In addition, Thaioil has also prepared the safety and occupational health master plan in 2011 which was determined by industrial best practices and issues found in the industry and a review of internal implementation procedure. The 2012 safety and occupational health master plan consists of four guidelines as follows.



Building a culture of safety for employees and contractors.

In 2012, Thaioil Group has developed the Safety Leadership Program according to the 5 year plan that covers employees and contractors across the enterprise. This program covers factors such as the determination of policy focus on the development of personal, CEO expressing the intentions and commitment to operational safety, preparation of Thaioil's leadership manual, full potential development of supervisors in safety leadership skills, management visits with workers in the area by focusing on discussions about safety including receiving feedback on safety issues, sub-group meetings on safety before starting work in operational areas performed by supervisors to record and evaluate, activities to promote safety leadership such as friend to friend alert on safety, and voice of the safety and safety information through various media.

Enhance the level of Process Safety.

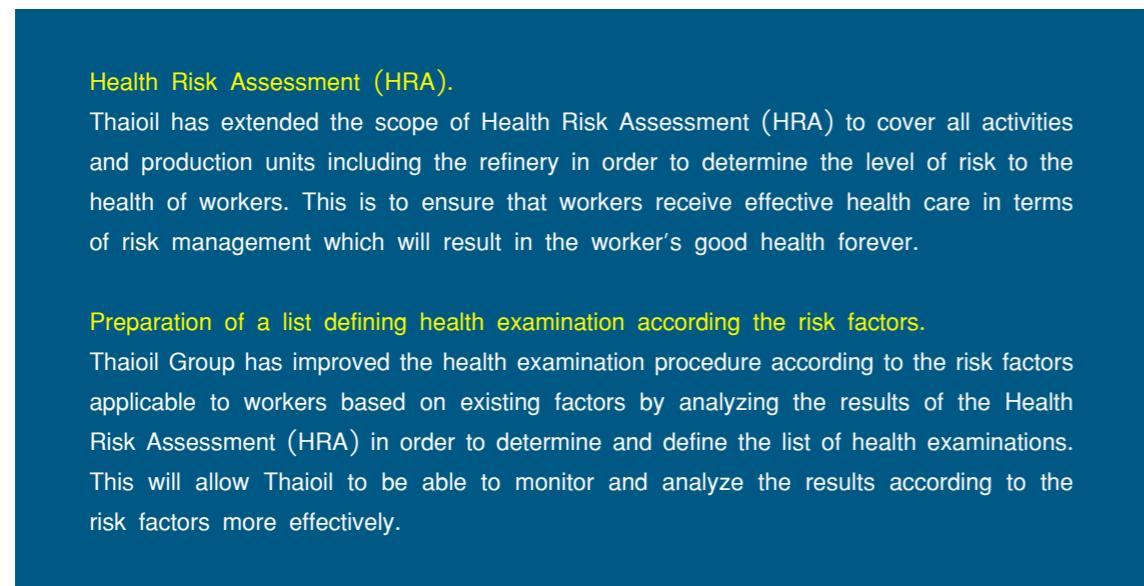
Although there has never been an incident in production processes for 13 years, this remains a priority and plans to develop and improve Process Safety by starting from the study and the determination of the Process Safety Indicator, Pre Startup Safety Review and check the safety regarding of the safety in production process to maintain a great level of management system for occupational health and safety and practices to meet international standards.

Improve the development of response to emergencies and crisis.

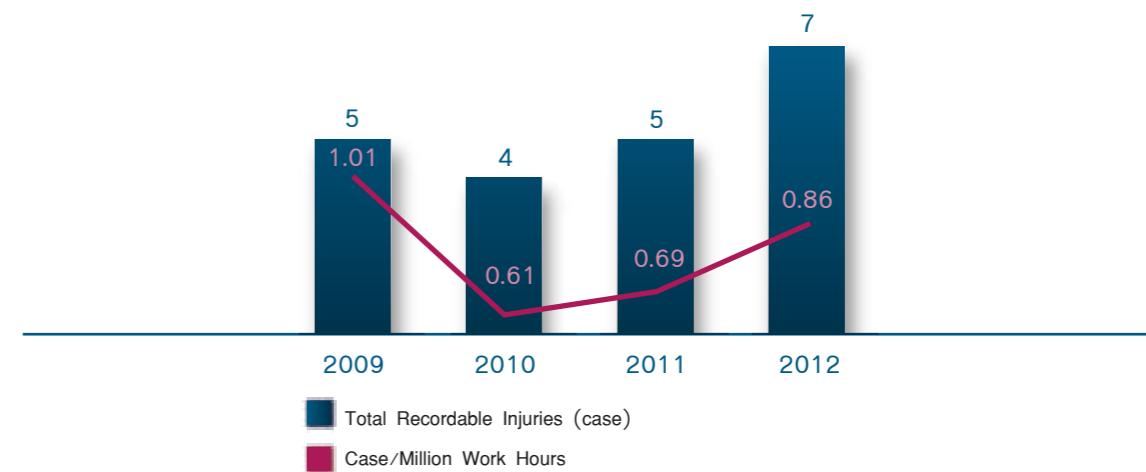
Thaioil Group has reviewed and improved the response to emergencies and crisis, covering the case of fire or explosion, flammable or chemical spills, oil leaking into the sea, security threat, threat of information technology and other disasters by setting a training plan for relevant personnel at various levels such as Table Top Exercises for those who are on emergency duty on a weekly basis, the annual training plan and exercise in conjunction with government agencies, contract group for external assistance.

Strengthen good hygiene of employees.

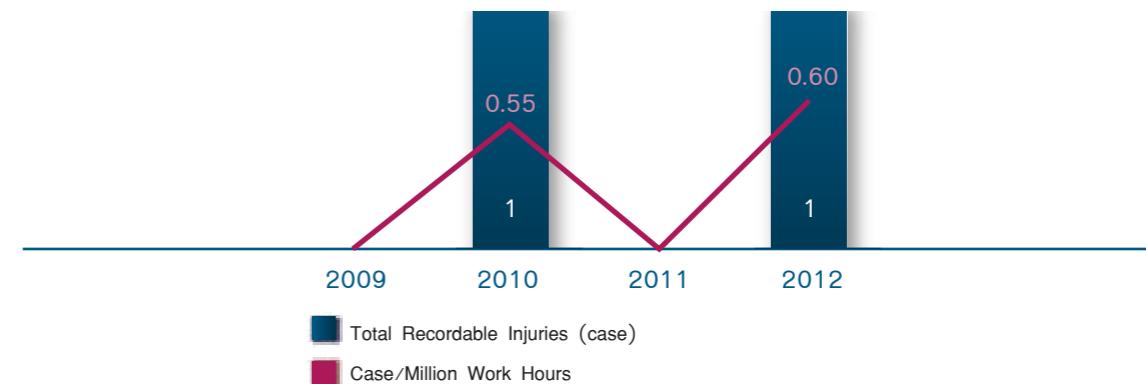
In 2012, Thaioil implemented the occupational activities in addition to 2011 as follows.



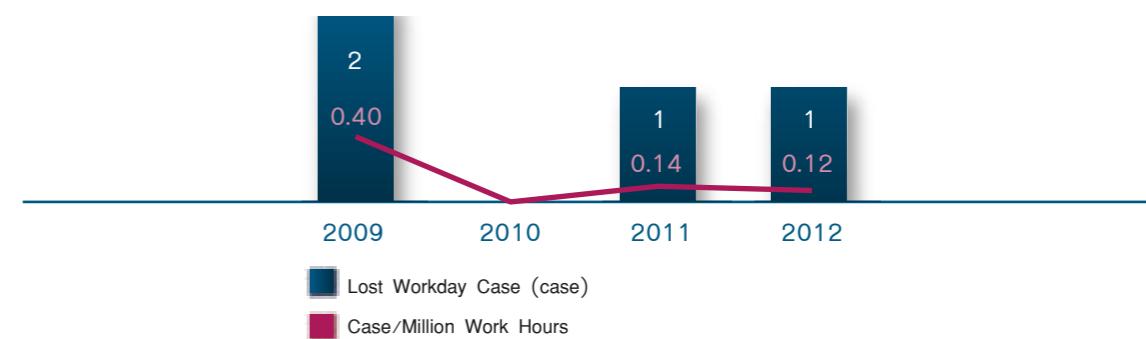
Total Recordable Injuries (Contractor)



Total Recordable Injuries (Employee)



Lost Workdays (Contractor)



Remark : The data reported does not include minor injuries cases.
OHSAS18001 Standard

Value Chain Management

Thaioil's value chain begins at suppliers and tankers of crude oil and other materials to provide and transport crude oil to our refinery until our products reach customers. Thaioil effectively manages our value chain in all economic, environmental and social aspects to prevent the risk of business interruption from suppliers and contractors having environmental or social issues.

93%

Customer satisfaction results (first half year)

>8,300 million liters

Of base gasoline, base diesel, gasohol and biodiesel sale

20 companies

Fully participating in CSR in Supply Chain Program



What we did in 2012	Status	What we plan to do in 2013
Expand CSR in Supply Chain Program into Phase II to Include More Suppliers and Contractors	Achieved	Expand application of E-Ordering system to Thai Paraxylene Ltd and Thai Lubebase Plc Ltd
Modify Partial Parts of the E-Ordering System to Serve Customer Requirements	Achieved	Participate with suppliers in CSR-DIW in Supply Chain with the Department of Industrial Work for the second consecutive year
Formulate Customer Database	Achieved	Identify Environmental, Social and Governance indicators (EFG) for suppliers participating in CSR Supply Chain program

Preparing crude oil procurement plan

Thaioil prepares a crude oil procurement plan annually for regularly-used crude oil for the security of our feedstock. We also have a monthly plan to acquire crude oil quality that meets the current market demand. The risk of oil price fluctuation could impact our business which is why we have crude oil hedging to manage such risk.

Management of crude oil transportation to reduce Hydrocarbon loss

Thaioil monitors Hydrocarbon loss during marine transportation (Ocean Loss Index) which is one of the key performance indicators of Thaioil Energy and Loss Committee to drive improved performance of crude oil transfer. Hydrocarbon loss during transportation could occur from 3 main processes namely loading loss, transit loss and discharge loss. Loading loss while transferring crude oil from the supplier and Hydrocarbon loss during marine transportation includes many factors beyond our control. Therefore, Thaioil focuses on the loss prevention from loading crude oil from tanker to our storage tank (Discharge Loss) to which we have comprehensive procedures to minimize product loss. In addition, Thaioil uses the service of tankers which comply with the International Convention for the Prevention of Pollution from Ships in the aspects of prevention of water pollution from spills, prevention of water pollution from hazardous chemical transportation and control of waste and wastewater from vessel to sea. A ship vetting process is also applied for all tankers in coordination with other companies in the PTT Group.

Thaioil Marine Tankers

Thaioil owns Thaioil Marine Limited Company to engage in petroleum and petrochemical transportation business at a national and international level to enhance security of our feedstock and reduce transportation cost. Thaioil Marine vessels contribute to about half of Thaioil's demand in crude oil transportation in each year. Thaioil Marine has 2 Very Large Crude Carriers (VLCC) with a combined capacity of 581,550 dead weight tons, and 5 smaller petroleum and petrochemical tankers with a total capacity of 147,450 dead weight tons.

Key Performance

Apart from management of crude oil procurement to the expected quality and delivery timeline, Thaioil also focuses on preventing ocean loss to maximize the use of national resources and preventing environmental impact from volatile organic compounds. Therefore, Thaioil sets the control value at 0.5 percent by weight.

6.1 Crude Oil Procurement Management

Thaioil's suppliers and contractors are expected to provide and deliver raw materials and chemicals for our production process in agreed volume, quality and schedule. Crude oil is our main raw material and therefore is one of the most critical components for our operation. Therefore, management of crude oil suppliers and transportation has to be done to ensure the sustainability of our business operation and the security of national energy.

Thaioil is aware that refining sufficient energy to match national consumption is the mission of our company. Therefore, Thaioil provides the highest priority for the production line and production support to ensure the continuity of the production process. Procurement of crude oil in sufficient volume, timely manner and appropriate price is one of our priorities to achieve the highest efficiency. In addition, Thaioil has strict marine transportation measures to prevent environmental impact during crude oil or product transportation as we are aware that it could cause delay in product/service delivery and impact our reputation apart from polluting the environment.

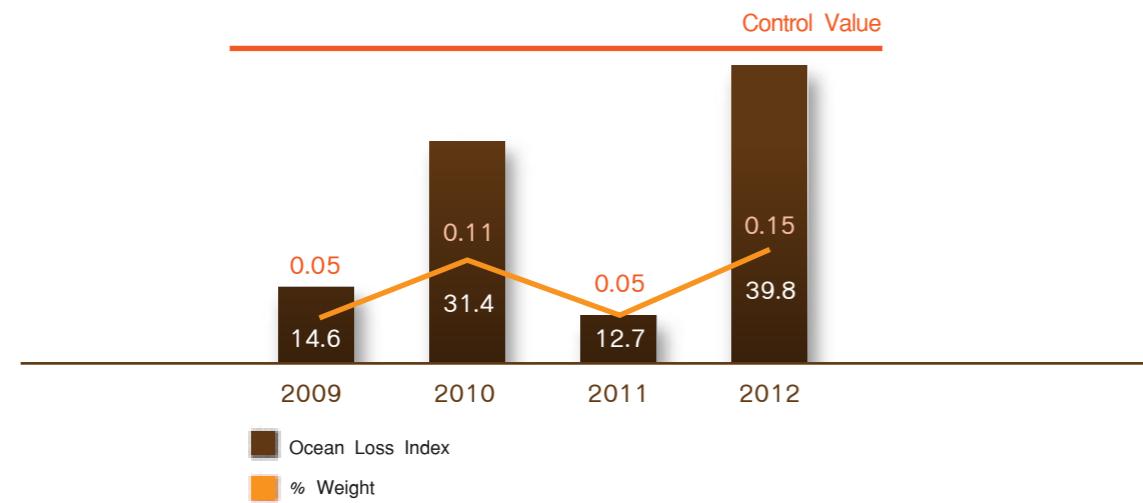
Our Commitment

Thaioil acquires crude oil to meet refining demand at appropriate price and reduce oil loss during transportation as much as possible.

Management Approach

Thaioil acquires crude oil from international trading houses whereby source identification of crude oil is undertaken to ensure Thaioil will not acquire crude oil from boycotted countries. The key sustainability risk during crude procurement is the marine transportation of crude oil. Thaioil has 3 approaches to operate in line with our commitment including

Ocean Loss Index



In 2012, Ocean Loss Index of Thaioil was 0.15 percent by weight which is lower than the control value.

such supplier or contractor can be included in our Approved Vendor List.

Our key approach in managing sustainability risk through the procurement process is CSR in Supply Chain which has been carried out since 2010 along with external experts. The standard and guidelines were developed in accordance with ISO 26000 Guidance on Social Responsibility and published in booklet form for high risk suppliers and contractors. This group of suppliers and contractors were included in training on the standards and guidelines and an onsite visit to verify compliance that leads to the development of the improvement plan.

Thaioil uses three main criteria to select suppliers and contractors to be involved in this program. Importance of such supplier or contractor to Thaioil/non-substitutable suppliers, frequency in conducting business with Thaioil compared with the potential environmental and social impact, and readiness of suppliers and contractors to be involved in this program. In 2011, there were 11 suppliers and contractors participating in this program with 20 more suppliers and contractors participating in 2012.

6.2 Suppliers and Contractors Management

Thaioil initiates the CSR in the Supply Chain Program to manage sustainability risks from our suppliers and contractors. The corporate social responsibility standards and implementation guidelines for suppliers and contractors were developed to incorporate the identification of high risk suppliers and contractors. The program consists of trainings and onsite visits to check compliance with the standards and implementation guidelines. Thus, this program also aims to be a forum for knowledge sharing and improvement of sustainability practices of Thaioil, suppliers and contractors.

Business nowadays depends more on contractor's services and supplier's products. Quality of labor and product from suppliers including their associated environmental and social impacts from business operations are evolving into a key factor for a sustainable business which aims to prevent potential impact to the continuity of business operation, legal liability and corporate reputation.

Suppliers and contractors of Thaioil are classified into (a) providers of raw material and chemical used in production line including related services (b) construction contractors (c) designers and project management (d) maintenance contractors (e) service providers (for example security and general labor) and (f) waste contractors, accounting for about 31 entities.

Our Commitment

Thaioil will improve and increase the competency of our suppliers and contractors to compensate the level of sustainability risk of such supplier or contractors.

Management Approach

Thaioil has a supplier and contractor database in which every supplier and contractor must be evaluated, and provide supporting documents regarding fundamental environmental and safety management systems along with compliance with the appropriate regulation and human rights according to Thai law. Then,



Key Performance

Every suppliers and contractors who participate in this program received compliance verification from an external specialist. There was no finding suggesting that any supplier or contractor was not complying with Thaioil's standards or regulations.

6.3 Customer Relationship Management

Thaioil has provided quality fuel for our customers for a long time. We value the opinions our customers and respond them in a timely and reasonable manner. Information from our customers is then used in developing our practice, service and new products. This allows knowledge sharing between Thaioil and our customers to enable our businesses to grow together. Thaioil also includes customer satisfaction of overall products as one of our corporate key performance indicators.

Thaioil has a vital role in national security accounting for 26 percent of national energy demand. The customers of Thaioil include large scale customers and smaller scale customers such as service station and petrochemical businesses in domestic and overseas markets in Asia, Australia, Europe and America.

Our Commitment

Thaioil continuously improves customer satisfaction to maintain good relationship between Thaioil and our customers while expanding our customer list. Customer feedbacks are analyzed to continuously improve our practice to achieve our goal of being the leading regional petroleum and petrochemical company and offering safe and environmental friendly products.

Management Approach

To ensure product quality, product delivery and before sale and after sale service satisfying customer requirements and expectations, the commercial department and production department of Thaioil Group work closely to deliver those requirements and expectations. In addition, we have customer relationship functionality which is independent from commercial and production departments to manage customer relationships and receive customer feedback to build customer trust. Customer relationship management and customer feedback of Thaioil also provides a framework to exchange information and receive opinion and recommendations, and provide sufficient support for our customers through various approaches. These include customer visits, telephone conversations with responsible staff, email, facsimile and newsletters focusing on market situation. Thaioil Group conducts customer satisfaction and engagement surveys twice a year to ensure the objectives are met. Feedback from this process is analyzed to improve our product, service and internal processes to provide prompt responses on type and characteristic of products, time of service and transportation for improvement in 2012.

To demonstrate our commitment to customer relationship management, Thaioil Group includes customer satisfaction in overall production as one of the corporate key performance indicators. Customer relationship function is responsible for conducting the survey to ensure independency from our commercial department. The boundary of the survey includes every Thaioil operating business.

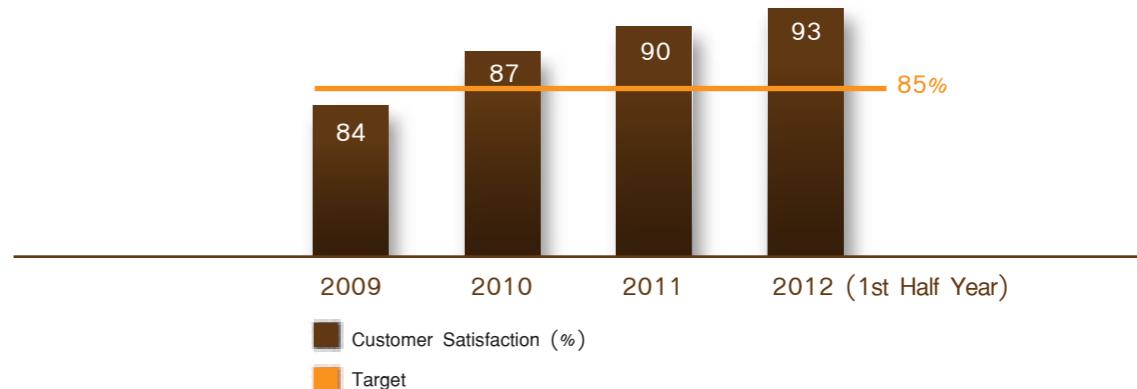
Thaioil continuously develops our products in response to government policy and world energy trends. In addition to regular gasoline and diesel, Thaioil also produces base oil for customers to blend with ethanol or biodiesel in accordance with their own formula. In 2012, Thaioil sold at least 8,312 million liters of gasoline and diesel and at least 86 million liters gasohol and biodiesel (B100).

Product safety is another priority area for Thaioil and companies in the Thaioil Group. This includes development of new products such as Treated Distillate Aromatics Extract (TDAE). Solvent business in Thaioil Group also has strict procedure in the implementation of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) which classify hazardous chemicals and communicate to end users through product labeling and Material Safety Data Sheet (MSDS) before it is regulated by the Thai government. In addition, the solvent business also has warehouse safety inspections, strict adherence to transportation laws, monthly meetings with logistic contractors to assure safety requirements are met, and regular emergency drills with contractor. TOP Solvent also endorses "Responsible Care" along with the wider petrochemical industry and the Federation of Thai Industries as a commitment from chemical companies to be responsible for improving health, safety and environmental aspects of business operation.

Key Performance

Thaioil Group conducts customer satisfaction in four areas namely overall product quality, product delivery, service and safety since 2009. Customer satisfaction trend has been continuously increasing 93 percent was achieved against the target of 85 percent in 2012.

Customer Satisfaction



Note : The survey results in 2009 and 2010 is from the customer satisfaction survey of Thaioil Plc.

In the past year, there was no incident of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services, product information and labeling, nor the product usage. Thaioil has utilized information technology system to facilitate product purchase and sale. In 2011, Thaioil had experimented with E-ordering system to improve efficiency for oil ordering process; it involves 3 steps: creating sale order, issuing product ticket and collecting products. Customers could access the system to track the status and credit. In 2012, the system was later upgraded to be applicable to more groups of customers, including those who export via road transport as well as customer of other products, such as, liquid sulphur. This system has proven to save times, minimize errors, and provide flexibility and convenience to customers. In addition, CM dashboard is another technology developed to present current data to the commercial department for managing timely sale and purchase according to the plan. In addition, the management can track sale information to adjust the sale strategies responding to changing situations, and accommodating needs of customer in a timely manner.



Human Resource for Sustainability

Human resource is one of the important elements to drive business. Therefore, Thaioil has policies, systems and processes to manage and develop the human resources of the Thaioil Group to serve the business goals and organization growth.

100%

Of our key positions has
succession planning

78.8%

Of our employees have individual
development plan

72%

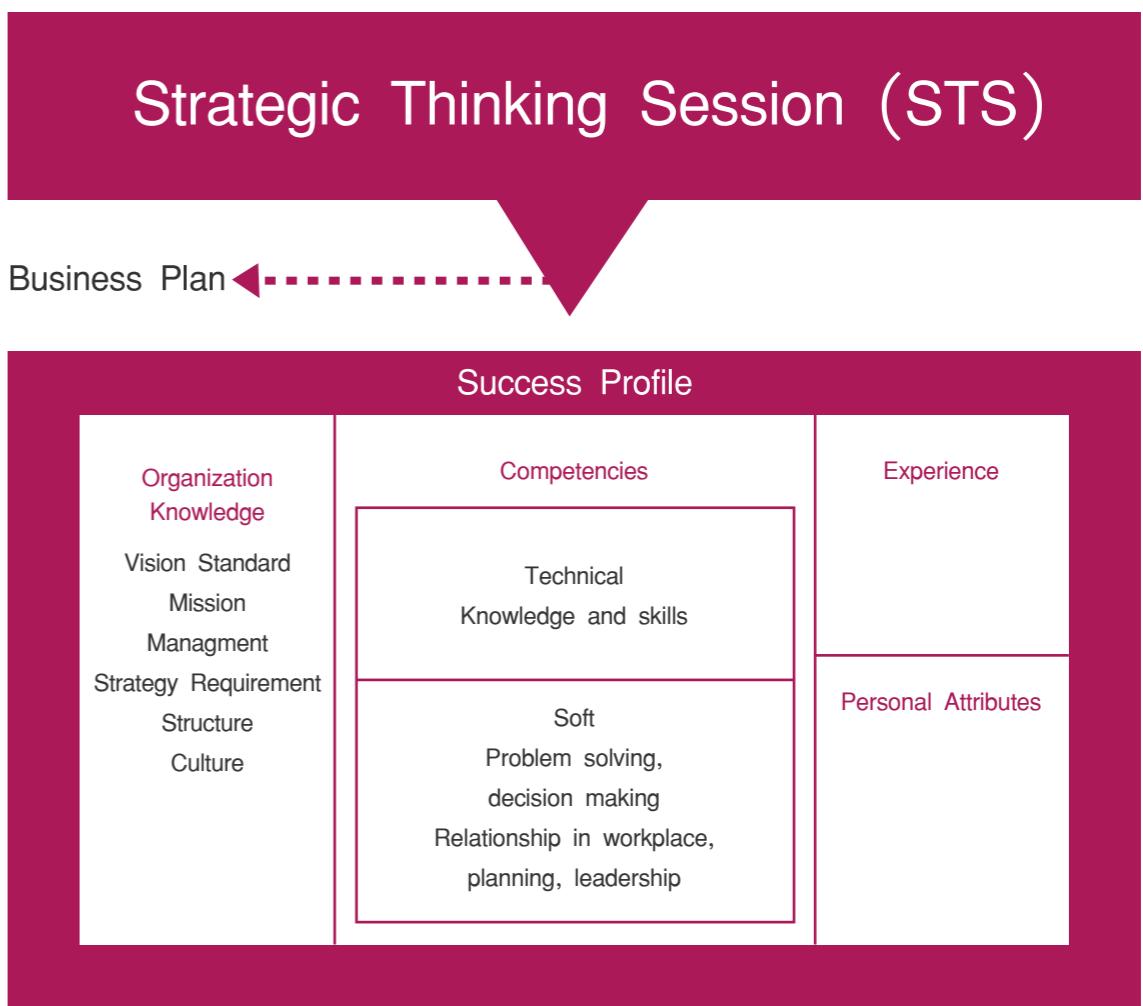
and

28%

The score of our employee
engagement in 2012

Is under a process of selecting
appropriate option

What we did in 2012	Status	What we plan to do in 2013
Launch I-Link Application to Manage Human Resources Data, Appraisal, Training Management	Achieved	Continuously improve individual competency by improving competency management and the leadership development program in line with succession planning for key positions in the organization
Expand the Career Management System and Succession Plan to Cover all Career Paths and Companies in Thaioil Group	Achieved	Prepare infrastructure for human resource functions for a fully integrated human resource management system in Thaioil Group including overseas expansion
Launch Health Promotion Campaign	Achieved	Continuously improve human resource systems including PMS and Career Management
		Improve employee quality of life, engagement and health



7.1 Employee Performance Management

Thaioil business plan has a direct linkage to the human resource plan in a systematic manner through specific information technology implementation to improve our human capital management. Besides the development of human capital in both management and employee levels to serve the business growth, Thaioil Group have planned to increase manpower in the positions that required for the future business expansion such as specialists in research and development.

Our Commitment

Thaioil's priority is to develop our human resource to be competent and ready to serve the business plan and promote innovation in the work place to move the organizational vision forward in a sustainable way.

Management Approach

Human capital development of Thaioil group is connected with the short-term, medium-term and long-term business strategy through Strategy Thinking Session (STS). The future challenges to achieve our business goal are analyzed to develop our Success Profile for every career path and every level of employees as shown in the figure.

Therefore, every employee of Thaioil Group will and is receiving competency assessment along with annual performance appraisal to develop Individual Development Plans. Individual plans will indicate training needs including In-house Training, Local Training and Oversea Training. In addition, Thaioil also uses On-the-Job-Training (OJT) and Coaching to develop technical competency of new employees. Our employees can also receive scholarship for further education at world leading universities.

Thaioil has implemented a management information system (iLink) to analyze, plan and assess the effectiveness of employee development including identifying key performance indicators (KPI), setting targets and evaluating the results. This system is intended to serve as an Employee Self Service which includes employee personal information, development plan, performance appraisal results, training history, KPI and targets. Managers could also access subordinates information necessary for human resource management through this system, to assist in career planning, individual development planning and performance appraisals.

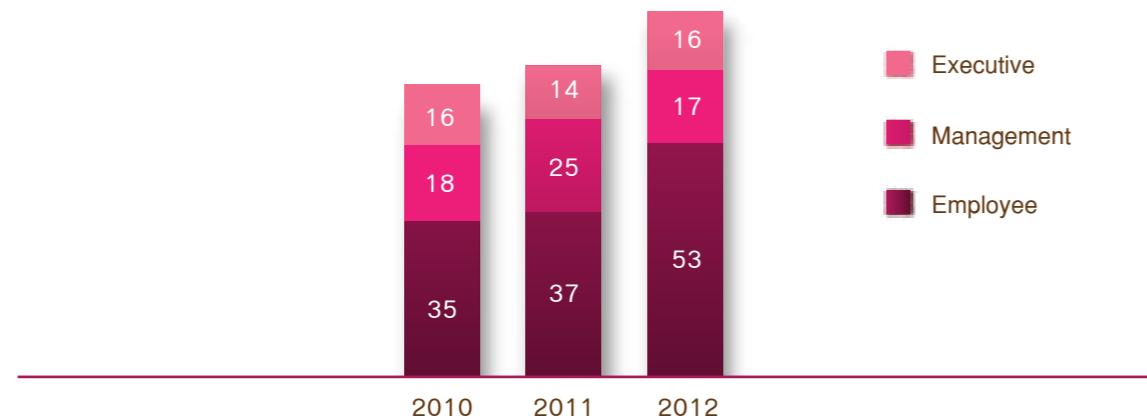
To serve the business direction and research & development strategy to improve our products, services, process and new business, Thaioil recruits Ph.D. specialists in research and development in accordance to the recruitment plan alongside future specialist recruitment. Thaioil will also provide scholarships for doctoral degrees for candidates who conduct research alongside our business focus.

Key Performance

The highest achievement in human capital development of Thaioil group is to develop our people to be competent and adequate in driving Thaioil business now and in the future in a sustainable manner. Thaioil sets a number of indicators to evaluate the effectiveness of our human capital development plan. In 2012, we completed succession planning for all of our key positions.

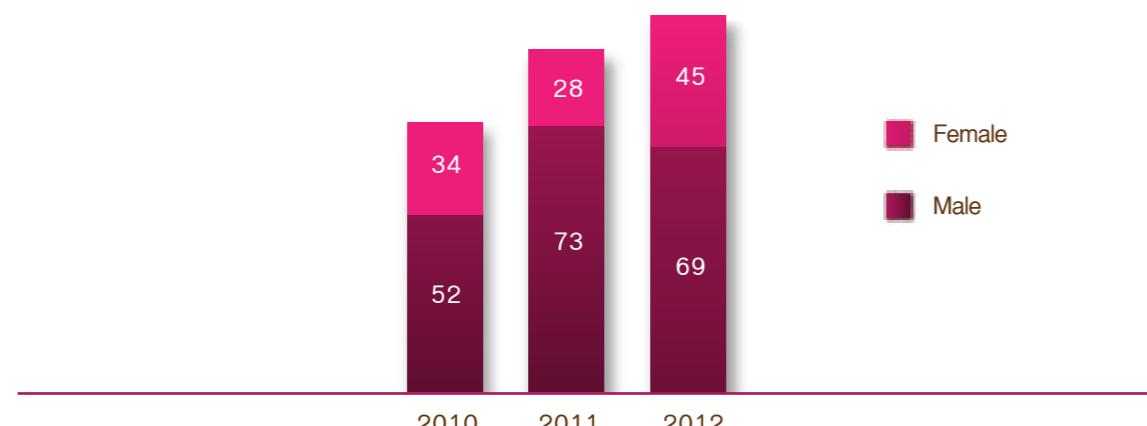
In addition, training hours as an indicator whereby the overall average hours of training is increasing for employees and executive levels. Employee level average training hours is high due to the preparation of new employees to be ready for work in addition to career development training.

Average hours of training per year per employee by employee category



Average training hour by gender indicates equal opportunity for both male and female employees in Thaioil Group. Average training hour of male is 69 hours per person per year comparing to 45 hours per employees per year of female. The average training hour per person per year of female is 17 hours higher than 2011. The overall average training hour per person per year of 2012 is also higher than the previous year.

Average hours of training per year per employee by gender



7.2 Employee Engagement

Thaioil develops our employee engagement under the principle of fair treatment, persuasive compensation, benefits and career advancement through an understanding of employee expectations. This will allow us to continuously improve our practice by focusing on building personnel relationships as brother and sister. Thus, the employee engagement index is also one of our corporate key performance indicators.

Thaioil has 821 employees which is a part in 1,000 employees of Thaioil Group. Male to female ratio is 80 to 20 which is in line with the petroleum refining business. The majority of our employee are located in operational facilities in Chonburi and the headquarters in Bangkok, Thailand.

Our Commitment

Employee engagement and motivation to work are the priority areas of Thaioil. Therefore, Thaioil applies performance based management to ensure no discrimination occurs and that fair treatment of all employee in term of career advance, compensation and benefits is achieved.

Management Approach

Thaioil Group has a policy to provide fair remuneration and compensation by considering three factors. Firstly, the responsibility and competency of the individual. Secondly, benchmarking compensation packages with peers annually by taking into account the economic impact and consumer index. Finally, the performance of the individual from a performance appraisal and soft competency performance standpoint. Thus, supervisors and human resource functions are all involved in planning promotions, selection of talented groups, employee transfers and individual career planning including succession planning for key positions.

In addition to compensation and promotion, Thaioil Group also keeps the practice of treating others as brother and sister through people and cultural activities including paying respect to senior persons in Songkran Festival whereby executives and senior employees are invited to bless the employees, farewell dinner for retired employees, New Year merit and the company birthday. Thaioil also has employee family activities including TOP Group Summer Camp, TOP Group Day Camp, TOP Family Visit Refinery and Family Rally.

In year 2012, there were 20 employees including 14 males and 6 females, who took parental leaves. All of them have returned to work at Thaioil.

Thaioil has a trade union, called Thai Refinery Union to which around 600 Thaioil employees are members. Collective bargaining requests in both formal and informal manner are conducted from time to time which all parties have conducted without labor disputes since the establishment of Thaioil. Thaioil uses the Employee Committee (EC) as a forum for management to engage and negotiate with union representatives. The meeting is conducted bi-monthly to resolve problems, review benefits and share information.

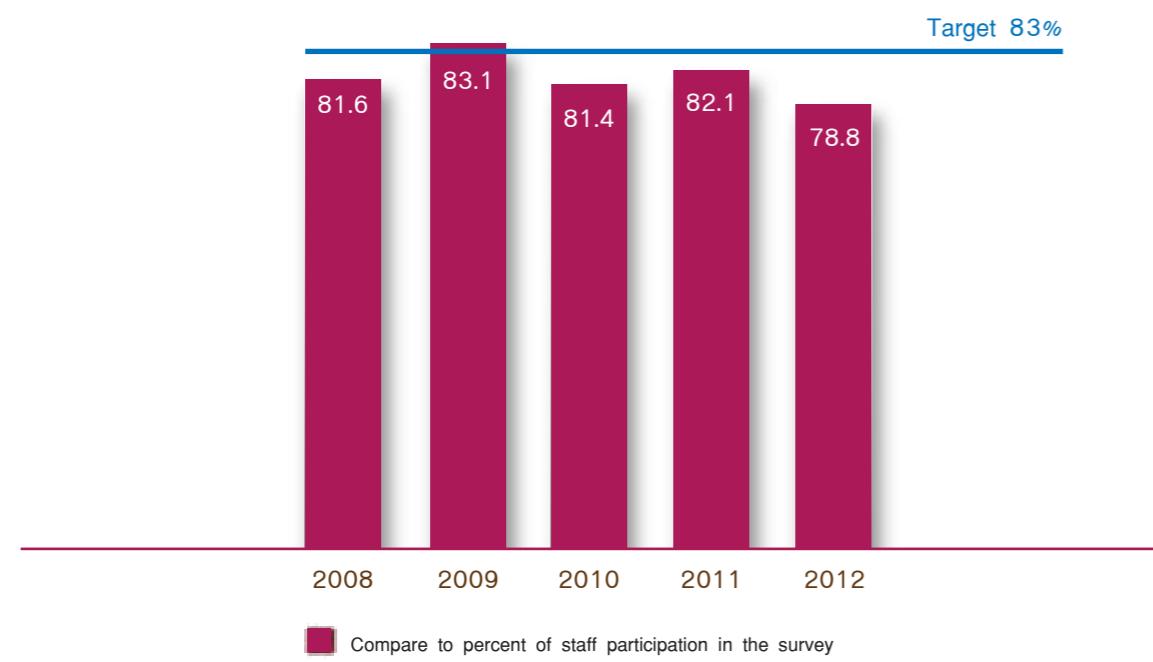
To further improve human resource management in Thaioil Group, an engagement and satisfaction survey has been conducted since 2007. The employee engagement index is included as one of the corporate key performance indicators.

Thaioil also promotes the organization culture to enable open communication and listen to employee opinion to improve employee engagement. This is reflected in Thaioil employee involvement in target setting, function development, career paths with department manager promoting Thaioil Group value “POSITIVE” through a focus on ownership and commitment. Thaioil executives also participate side-by-side with employees in all organizational development activities.

Performance Highlight

Thaioil conducts annual employee engagement and satisfaction survey in the fourth quarter of every year. Our engagement and satisfaction score in 2012 was 78.8 percent lower than the target of 83 percent. Thaioil has taken this matter seriously which we conducted root-cause analysis and informed line manager to develop key process to sustainably improve employee engagement. We have considered all factors and scenarios that could affect employee engagement and satisfaction to improve this performance to meet the defined target.

Employee engagement and satisfaction score





Community & Society Development

People Engagement and Sustainable Development Promotion are the Thaioil's approaches to demonstrate our responsibility for community and society.

>35 million Baht

That we spent to operate Thaioil Group Health and Learning Center for Communities

>53,000

annual services transaction

In the Thaioil Group Health and Learning Center for Communities

>732

households

21

public services buildings

Benefit from renewable energy and energy efficiency projects of Thaioil

What we did in 2012	Status	What we plan to do in 2013
Social development to improve physical, mental, and intellectual happiness for the communities surrounding the refinery	Achieved	<p>Continuing health promotion projects from the previous year, including</p> <ul style="list-style-type: none"> - Survey of community health in Wat Manorom and Chak Yai Jean - Metabolic Syndrome check (blood pressure, diabetes) in Ban Laem Chabang, Ban Thung, Talad Ao Udom. - Thalassaemia health check for Ban Laem Chabang, Ban Thung - Elderly health check for Ban Laem Chabang - On-going dental service for students - Preventive dental service for schools around the refinery - Continuing Ropeskipping Promotion
Continuing projects from the previous year, such as - Umphang – Energy Sufficiency City in Honor of HM the King - Coral Farming and Rehabilitation of Coral Reefs at Si Chang Island - Ban Mae Jo hydropower plant	Achieved	<p>Continuing projects from the previous year, including</p> <ul style="list-style-type: none"> - Umphang – Energy Sufficiency City in Honor of HM the King, Tak Province - Coral Farming and Rehabilitation of Coral Reefs at Si Chang Island, Chonburi Province - Ban Mae Jo hydropower plant, Chiang Mai Province - Huay Poo Ling Community Hydropower Plant Power Grid Extension Project, Chiang Mai Province
New project which is - Biogas Production and Toxic free home-grown Vegetation, Mak Noi Island	Achieved	<p>New projects under feasibility study, including</p> <ul style="list-style-type: none"> - Biogas Production and Toxic free home-grown Vegetation (Phase II), Mak Noi Island, Phang-nga Province - Biogas Production Project, Noppitam, Nakorn Si Thammarat Province - Human and Organization Resources Development Canal Water Project for Sufficiency Economy Project (Phase II), Nang Rong, Buriram Province. <p>Collaboration with PTT group, including</p> <ul style="list-style-type: none"> - Reforestation Project in Honor of HM the King - Establishment of Rayong Institute of Science and Technology (RIST) and Rayong Science Academy (RASA)

8.1 Participation in Sustainable Community Development

Thaioil emphasizes the learning and the understanding the needs and the expectation of the surrounding communities in order to facilitate the sustainable coexistence of the business and the community. We respond the expectation appropriately and gain acceptance from local communities by making frequent visits to be familiar with residents, and supporting the local projects that promote environmental improvement, education, and local arts and culture. In addition, Thaioil is aware that public health is the key success factor for the community development, thus, we initiate a few public health promotion projects for local residents to be in good health throughout the lifespan. Thaioil also invests in the construction of Thaioil's 50th Anniversary Building in Ao Udom Hospital, recently renamed as Laem Chabang Hospital to increase emergency response capacity of the hospital.

The oil refinery, the petrochemical plant, the lube base refinery and the power plant are the key operations of Thaioil, which all are located in Sri Racha area, Chonburi province. There are 7 communities surrounding our refinery complex, and Thaioil has had good relationship with all 7 communities more than 50 years, since the refinery operated.

Our Commitment

Thaioil considers our nearby communities as neighbors, and engages in the community development in sustainable manner.

Management Approach

Thaioil emphasizes a good relationship with communities throughout the years in order to truly understand the needs and the expectation of the community. The understanding assists Thaioil in responding to the needs and the expectation appropriately. In order to achieve our goal, we utilize 2 approaches: engagement of local residents on project development and operation, and promotion of sustainable development in the community.

Engagement of local residents on project development and operation.

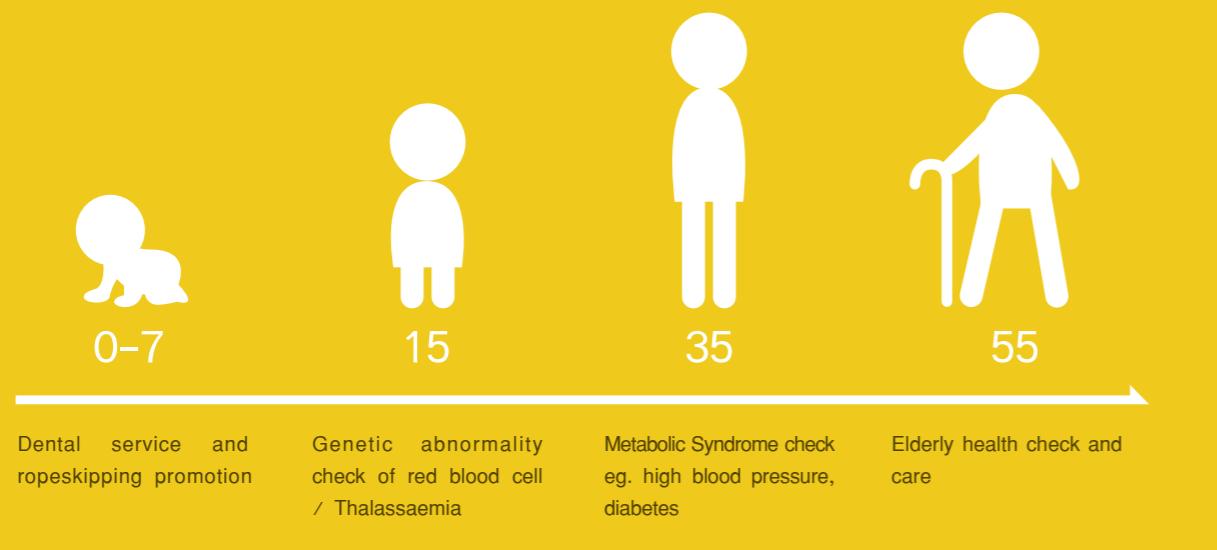
At Thaioil, we believe that the community acceptance and engagement are the key success factors for a sustainable business operation. Therefore, in consideration process, we include social and environmental topics into both new and expansion project proposal checklists. If the project could have impact on community or environmental, Thaioil will conduct Environmental Impact Assessment studies that analyze environmental impacts, social impacts, health, biodiversity, and local economics, in accordance to the Office of Natural Resources and Environmental Policy and Planning (ONEP) requirements. The EIA study is required to conduct at least 2 formal public participation meetings for 7 stakeholder groups: 1) affected persons, 2) EIA license holders, 3) ONEP, 4) Authorities, 5) NGOs, 6) Media and 7) public. The first public consultation is to receive stakeholder concerns regarding to the project development and the second one is to present the project impacts as well as the proposed mitigation measures and monitoring measures.

Project Operation Phase

The proposed mitigation and monitoring measures will be incorporated into the corporate environmental management system. They are regularly tracked internally and externally by the external party who has EIA license. The environmental monitoring and audit report is prepared every 6 months by EIA license holder and submit to ONEP. Thaioil also provides communication channels for questions, suggestions, concerns, and complaints through community leader, community affair staff, complaint letters, and 24-hour hotline. All issues will be recorded and transferred to responsible person to investigate the situation, and the responses will be given to the contacting person.

Promotion of sustainable development in the community

We encourage the community to develop in a sustainable manner by building capacity of local residents to ensure community self dependence. The community affair staff has initiated **Tripartite Development Model (Ao Udom model)** to set framework and strengthen the cooperation among Thaioil, community and local government agency. The model has a regular monthly meeting to exchange idea and finding solutions for the matters in relevant to the development of the community. In addition, to understand the whole range of stakeholders in the communities, we have engaged with local networks in the area including Teacher Network, Community Network, Youth Network, Civil Boy Scout Network, and Health Volunteer Network to use as our input for continuous improvement and identification of community development program, to promote participatory community development.



Performance Highlight

Other than the environmental, educational, cultural promotion projects implemented, good community health is one key priority of Thaioil. We believe that steady economic and social development of the area requires healthy community. Thus, Thaioil has implemented the health promotion projects that involve various activities for specific age groups. These projects were developed from the discussions among Thaioil, Laem Chabang Municipality, Laem Chabang Hospital, Health Volunteer Network and surrounding universities, and are currently operated base at the Thaioil Health and Learning Center for Communities. In addition, Thaioil contributes an investment to construct a 5-floored emergency building for Laem Chabang Hospital to serve emergency response in the area. The building is expected to be open in 2015.

"I'm satisfied and happy that Thaioil focuses on health promotion, and does not only 'give away' things to the community. It is a long-term project that is organized and steered by community leader and Health volunteer network, intending for behavioral change and expecting to be a model for other communities to follow."

Mr. Suraphon Krumprasert
Disease control and prevention department head,
Office of Public Health,
Laem Chabang municipality.



"Thaioil takes care of local resident health from children to adult to elderly. In addition, Thaioil emphasizes in close communication with community throughout the years."

Ajarn Sathien Eakjarasipwat
Talad Au Udom Community Committee Leader



"Thaioil is a company that acts as a true resident of Sri Racha by assisting government agencies to promote good health among local residents. This is a key factor for community development."



Dr. Sukij Puengkedsunthorn,
Director of Laem Chabang Hospital

"Thaioil's action is a demonstration that business and community can coexist. Thaioil has continuously provided assistance for community development, coexists as brothers, be considerate and engages in community throughout the years, especially on the community health issues."



Mr. Wisit Phuttharatus,
Ban Thong Community Committee Leader

I had a chance to bring students from Curtin University, Australia to visit the child dental service of Thaioil, and received positive response that the project is very beneficial to the community and it would not happen without the assistance from the business to local government."

Assistant Professor
Dr. Chantana Jantarawongse
Faculty of Nursing, Community Nursing Unit, Burapha University



Thaioil Health and Learning Center for Communities

On an area of 6 rais on Au Udom Road, the Thaioil group Health and Learning Center for Communities is one key output from lessons and experiences learnt from the coexistence of Thaioil and surrounding communities to build strong community. The concept of this health and learning center was developed based on the success of "Mobile health unit project" that serves the communities throughout the years, and draw good participation from local residents. Thaioil thus initiates the concept of taking care of resident health in a more sustainable manner, emphasizing on prevention more than curing, and utilizing community medicine science. This center contain variety of facilities, including:

- **Public Library**

besides traditional books available anywhere else, this library offers "living library" by inviting leaders/experts in the area to give a talk in different sessions. It also collaborates with TK Park, offering book lending and access to learning medias via internet.

- **Dental Clinic**
the center has 5 fully-equipped dental care rooms that can provide basic mouth and teeth health treatment.
- **Multipurpose area for communities**
open for general public to use exercise machines, take a rest in the garden area, or use for organizing community events.
- **Buddhist Shrine**
locates the statue of Buddha Rattana Mongkol Sakol Prachanartmunee that was developed in the 48th anniversary of Thaioil. The shrine is also used for many religion purposes.

8.2 Development of Energy Self-Reliant Communities in Remote Areas

Thaioil operates business by maintaining the balance among the economics, social, and environmental aspects for efficient and strong business operation, while pertaining good relationship with communities. Corporate Social Responsibility (CSR) activity is one of the key missions that Thaioil practices continuously in order to become a sustainable organization. In the corporate value of “POSITIVE,” “S” represents Social Responsibility that demonstrates **volunteerism** of our employee to utilize our 50 years expertise/experience for the benefits of the remote areas. We have implemented several CSR projects with our alliances that are well recognized at national level as well as international level. We conduct the CSR activities under the framework **Develop alternative energy from natural resources or agricultural surplus in the areas emphasize the utilization of clean energy that residents can use in a daily life, such as, hydropower, solar cell, biomass and biogas that is produced from the organic wastes. Our CSR activities follow the sufficiency economy philosophy.**

Besides our refining business, Thaioil is responsible for the sustainable development of the society. Not only, Thaioil has to produce gasoline to serve the national demand, we dedicate to utilize our 50-year knowledge and experience to develop alternative energy from natural resource for residents in remote areas with no access to power. We encourage the participation of the residents in every project in order to promote learning, and self-dependence community in the future.

Our Commitment

For sustainable growth, Thaioil operates business with emphasis on good corporate governance and commitment to Corporate Social Responsibility. We encourage staff engagement on community and society development to demonstrate energy self-reliant communities. We promote the optimization of the resources utilization as well as the improvement of quality of life of the people in remote areas of Thailand.

Management Approach

Clean energy is the key success factor for sustainable development. Thaioil emphasizes the production of alternative energy, and promotes the efficient use of energy. We also encourage the energy production from natural resources or wastes from agriculture, industry or household in the area to serve the community demand, in order to reduce greenhouse gas emission. Thaioil encourages employee to participate CSR activities, and shares CSR understanding among our key stakeholders. We transfer our practices on communities and society to our partners via CSR in supply chain. We also promote our CSR activities by inviting stakeholders, such as analysts, investors, partners to participate our events. Furthermore, we are a part of CSR network of PTT group, and several other organizations, such as, Stock Exchange of Thailand, Registered Company Association, CSR club as well as local and international alliances to continuously implement CSR projects in all regions of the country.

5 Corporate Social Responsibility Strategies of Thaioil

1. Leverage our 50 year expertise for enhancing the Company's CSR strategic to be benchmarked with international standard of sustainability,
2. Build CSR alliance and/or creating co-creation with the important institutes or bodies that influence societies,
3. Reduce global warming through Clean Development Mechanism (CDM),
4. Emphasize a more in-depth CSR activities with the communities,
5. Create and consistently promote employee volunteering spirit.

Performance Highlight

In 2012, Thaioil has continuously implemented CSR activities while expanding the coverage area. Our activities results in winning several national and international awards, including the Alpha Southeast Asia 2012 Awards in the category of the Strongest Commitment to Sustainable Energy in Southeast Asia and the category of the Best Strategic CSR, the Best Corporate Social Responsibility Awards from Stock Exchange of Thailand (SET) and the Banking Financial journals, the CSR-DIW Continuous Award and CSR-DIW in Supply Chain Award.

One of Thaioil's CSR commitments is to develop communities in the remote areas to be model of energy self-reliant ones. We develop a project under Green Development Mechanism with our alliances which are the Energy for Environment Foundation (EforE), Department of Alternative Energy Development and Efficiency (DEDE) and the United Nations Development Programme (UNDP). We encourage and promote the production of renewable energy projects such as, the hydropower plants, the biogas production system, the stove modification of tea leave steaming, training and maintenance of Solar Home system, in the remote area as well as the areas with no-access to power line. We have focused the northern region of Thailand, such as Chiang Mai and Lampang, in order to support the educational development of the students and to improve the public health service in remote areas. This year, we has gained respect and received well cooperation from community leaders as well as local residents. The implemented CSR projects include:

Umphang Energy-Sufficiency City in Honor of HM the King Project in Tak province, in collaboration with the Energy for Environment Foundation

is intended to produce renewable energy from local resources in a sustainable way. The project involves 4 elements: the hydropower plant, the biomass power plant, the biogas production system, and the maintenance and improvement of the solar-cell electricity generation system. In 2012, Thaioil built 968-Watts solar cell electricity generation system for 3rd development army office and 370-watts system for Health center of Ma Oh Koh village. Thaioil also built gasification electricity generation system for Mae Chan sub-district hospital with a capacity of 10 KWs.

The opinions from the community leader and government officer on the project are as followed:

"Mae Chan Area is a large area with more than 10,000 residents. Local residents do not have access to electricity and did not know about hydropower nor renewable energy. They only knew electricity from Provincial Electricity Authority for those in the city and solar cell. From the communication with Thaioil, we have learnt that we can produce electricity from biomass which are abundant in our area. Wood fragments and leafs can be also used to generate electricity. These projects are very useful. Local residents gain benefits from this project. There are several waterfalls in Mae Chan area, and it is nice to have clean electricity power in Mae Chan. Local residents would know how to utilize natural resources with the maximum benefit."



Mattaneya Boonsom
Chief Administrator of Sub-district Municipality, Mae Chan, Umphang, Tak

"Our responsibility is to cooperate with all government agencies that will come to improve living quality of residents in the frontier, to monitor and report the project progress to the project owner, while train military to local residents. In the area, we have a total of 29 staff to protect our land as well as to report information to other agencies. Since we rely mainly on radio communication, the lack of electricity power is the crucial obstruction of our work. While our area is quite distant from the central division, we from time to time need timely assistance. The communication equipment with no electricity is problematic. Currently, we have 2 systems. The 30-KW hydro power plant serves local residents and our unit for a total of 125 household. However, this system cannot operate during dry season because of insufficiency of water flow. We are so thankful for Thaioil for the support of Solar Cells. Now, our communication works well; we can communicate with other authorities in a timely manner. Timing is the key for military activities, thus, we are able to manage threats from outside."



Second Lieutenant Amnart Duang-Kamnerd
Leader, Cooperation and Projection Operation Unit for Ma Oh Koh Village

Ban Mae Jo Hydropower Plant Project, Chaing Mai province, in collaboration with the Energy for Environment Foundation.

It has been developed from the Huay Mae Rerm Reservoir project of His Majesty the King's initiative, which was constructed since 1988. Mae Jo Village, Mae Taeng, Chiang Mai is located at the end of grid lines, and often faces power blackout. The Ban Mae Jo hydropower plant project is intended to promote electricity security for the community as well as to generate income from selling electricity back to Provincial Electricity Authority. This project will preserve the environment, especially river and forestry, increase the green area, promote eco-tourism, encourage toxic-free farming, and improve local residents' quality of life. A Small Community Enterprise has been set up in order to operate electricity system.

The opinions of the community leader on this project as followed:

"We dreamt to have a hydropower plant at the reservoir. If we have our own energy, we can be self-reliant. We have taken good care of our forests since 2004. And, we finally have that small waterfall over there. It is not so nice-looking, but we are proud of what we have done. Later, the Energy for Environment Foundation known about us and made discussion with Thaioil. Thaioil saw the community strength, thus offered financial help as well as manpower to conduct CSR activities. People in the village are very happy. At present, there are a few organizations providing us with useful information, especially organic farming. It was an impossible dream since we have no saving to invest in the power plant, but this is the 4th year and the dream almost comes true. Thaioil fulfill our dream. Thank you Thaioil for making our dream come true. My next dream is to promote Mae Jo Village to become organic farming throughout our area. Our village is upstream of the Ping river. If we have done good, Ping river will be good. Then, other villages will follow us; they will become more communities with good living conditions."



Thongbai Lekramnarong
Homestay Group Leader, Mae Jo Ban Din,
Treasurer of Mae Jo Hydropower Small Community Enterprise

The pico-hydropower plant project at Champa Thong Temple, at Champa Thong Waterfall Park, Ban Tam, Muang, Phyao province, in collaboration with the Energy for Environment Foundation.

Department of Alternative Energy Development and Efficiency, Doi Luang National Park, Department of National Parks, Wildlife and Plant Conservation, and Champa Thong Temple.

The power plant generates the electricity from Champa Thong waterfall, for Champa Thong Temple and the 6th Doi Luang National Park Protection Unit (Champa Thong). The 2nd pico-hydropower plant with a production capacity of 7.5 KW was completed in 2012. Volunteers from Thaioil have also participated the CSR activity and off-season offering of robes and other needs to monks at the temple, natural trail development, and landscaping around the power plant.

"Previously, the temple used candles at night. The nuns had only candle light while they cooked. Then, the solar cell energy came, followed by the electric generators. We had spent lots of money for fuel, till Thaioil built the 1st and 2nd power plants. Nowadays, the electric system is stable and available at all time. Thaioil is a refinery company, that returns its profit back to society, not only to the neighborhoods around the refinery but also remote areas all over the country which rarely access to the government assistance. I have heard that Thaioil has supported a number of small hydropower plants for villagers, and now, Champa Thong Temple also received the benefit from Thaioil CSR project."



Prakru Suthiyan Sophon
Leader of Champa Thong Temple

Biogas Production and Toxic Free Home-grown Vegetation Project at Mak Noi Island, Phang-nga province, in collaboration with Thaksin University (Patthalung Campus)

Thaioil has increasingly worked with our alliances to extend the CSR activities to cover all regions of Thailand using the strategy of CSR network and alliance. "Southern" region is the new area that Thaioil implemented CSR projects this year. The objective of the project is to produce alternative energy and improve sanitation on the island. At present, Mak Noi Island was facing many environmental problems, including the wastewater from the local rubber sheet production, the waste from the fishery activities as well as the kitchen waste from households. The project utilizes these wastes to produce biogas energy. The Toxic Free Home-grown Vegetation Project is intended to promote vegetable consumption among islanders, since the islanders tend to over-consume seafood. They are considered consume inadequate vegetable because of costly vegetable transportation from mainland. Moreover, the fermentation and sludge from biogas production system can be also used as organic fertilizer, to reduce the use of chemical fertilizer in local farming. The project also encourages to collect additional wastes, coconut shell and wood bits to produce charcoals together with wood vinegar for insecticide.

The project Phase I has been implemented by the agreement between Thaioil and local residents to build and maintain the biogas production system. To participate, it requires residents to invest 700 baht and to maintain the system for 3 months during the trial period. In 2012, 104 families in Mak Noi Island gained benefits from this project. The biogas production system can reduce organic waste on the island by 72,000 liters/year, and save 118,560 baht/year from purchasing less cooking gas energy (1,140 baht/household/year). Volunteers from Thaioil participated in the installation of the biogas production system, transfer knowledge, and build capacity of Mak Noi islanders to strengthen community networking in order to sustain energy security.

The project supervisors and participants share their views on this project are followed:

"The community would like to solve the problem of wasted water from rubber sheet production process, thus, we went on a field trip in Nakhon Sri Thammarat. We found that the waste water, when treated in the process, then become clean, no smell, and can produce gas. We saw the biogas production from household wastes, so we would like to follow. At first, we began by building a biogas system from kitchen waste using the budget of the local residents. We saw the dedication of the villagers, thus we seek for funding from other organization/foundation. Many families would like to do, but don't have sufficient saving. This coincides with Thaioil's policy to develop alternative energy for communities. We found that Koh Mak Noi is appropriate project site because of the power shortage in the area, the enthusiasm of local residents and the previous attempt of similar projects."



Lecturer Wikanda Thongnueykang,
Faculty of Science, Thaksin University
(Patthalung Campus)

Assistant Professor
Dr. Usa Onthong,
Faculty of Science,
Thaksin University
(Patthalung Campus)



"Thaksin University and Thaioil expect that we will bring energy security to Mak Noi Island as well as food security from toxic-free farming. We do not provide 100% of materials, we instead transfer the best knowledge that we can, and request local residents to corporate in every step of the project. Villagers have to understand the system development in order to build, to extend, to maintain and to have the sense of ownership."

Mak Noi Island is regarded as a strong community that well collaborate and is capable of improving the system.

At first, when I had seen the project, I thought it never works. But when we came back and developed, it turned out a success. I still use the system, and will continue to use in the future. My house is the first one that succeed the project, and never encountered any problems. This may be because I possess technical knowledge. Some families have problems, and come to see the system at my home. I help suggesting, transferring, and fixing. When I knew that Thaioil would come support our village, I invited the villagers to learn about the system at my house. They gained more understanding when seeing what I did. It is quite easy. I am very happy that Thaioil supports this project and thank Thaioil on behalf of all villagers.



Mr. Abdullah Sinto,
Community committee member
and Community Technician,
Mak Noi Island

"I am so proud to be part of this project. We can save energy, save money, and do not need to dispose waste somewhere else. It is one of the waste disposal methods. Our family has 3 members, we cook every day. In the past, we disposed waste from the kitchen somewhere nearby our home and burnt it once in a while. Presently, I am happy that many people joined the event. I cannot wait to join the next event."



Mr. Moosa Hempitak,
Mak Noi Islander

The Human and Organization Resources Development
Canal Water Project for Sufficiency Economy Project, at
Nong Takien, Nang Rong, Burirum Province in collaboration
with the Education and Public Welfare Foundation.

Thaioil's strategy is to utilize our energy knowledge gained throughout 50 years of operation to optimize the resource management. We transferred knowledge in engineering, technology of the survey equipment to measure the canal depth, we deployed GPS technology to identify the canal location to the community. It is the first Thaioil CSR project in the "northeastern" region with the concept "key focus of the development is to build capacity of local residents, especially community leaders." In the project, we transfer knowledge of management which leads to the irrigation system for community. This year, we built a 2.2-km-long canal (3-m width x 3.5-m depth) and build 9 ponds, which bring benefits to more than 395 villagers of 102 households. This has been completed with the collaboration from Nong Takien villagers, Thaioil engineers, the Foundation staff, and local government agencies.

The project supervisor, the community leader and villager share their view as followed:

"Farmers face difficult living conditions. They have endurance and capability, but with limited opportunities. Our foundation tries to bring opportunities, and we found that people in these communities are great human. They all contribute to develop their own village and other nearby villages. We are thankful for Thaioil to come and help community to be self-dependent and helpful to other communities."



Bangkok Chow-kwanyun,
Manager of Education and
Public Welfare Foundation

"I am very happy that Thaioil and the alliances bring the project to Nong Takien Village. It brings good success to us, especially all farmers in the north side of the village that own arid lands. They did not have sufficient access to water. This project builds small pond to contain water for summer usage. I am thankful for all parties that collaborate and support budget for the project. Local farmers can cultivate better now."



Mr. Seksan Sirimongkhon,
Leader of Nong Takien Village

"In the past, before the canal was built, we could cultivate only once a year. Once the canal was built, we can cultivate up to 2 times a year. We can grow vegetable and others. Thank you very much for bringing good economic prosperity to Non Takien Village. We are very happy. I am willing to dedicate my own land to develop the canal, and never regret for this. They asked for my land, to build pathway for local residents. For the benefits of the public, I donated the land. Now when canal was built, irrigation in the area has improved, we can grow just about anything including vegetable, rice, tomatoes, etc."



Mrs. Ord Nedmanee,
Farmer from Nong Takien Village

Thaioil and our alliances continue to develop alternative energy prototype projects that provide economic benefits to remote areas. We dedicate to improve the project, extend the project area, and initiate new projects. The projects that have been under feasibility study stage are the Biogas system project on Mak Noi Island Phase II in order to develop a community learning center, Phang-nga province, the Biogas system installation project in Noppitam, Nakorn Srithammarat Province, and the Human and Organization Resources Development Canal Water Project for Sufficiency Economy Project Phase II in Burirum Province.

"Thaioil Group Health & Learning Center for Communities"



9. Performance

Economic Performance		Unit	2009	2010	2011	2012
Total Revenue	Million THB	287,393.27	324,351.85	448,772.58	451,658.96	
Operating Cost	Million THB	268,346.44	307,709.56	422,360.04	432,147.84	
Employee Wages and Benefits	Million THB	2,084.74	2,573.00	3,407.00	2,796.00	
Payment to Providers of Capital	Million THB	6,403.92	6,145.85	7,808.93	7,602.54	
● Dividends	Million THB	4,334.07	4,418.77	5,720.23	5,358.78	
● Interest Payments	Million THB	2,069.85	1,727.08	2,088.70	2,243.76	
Total Payments to Government	Million THB	1,098.91	1,674.53	6,578.70	2,398.09	
● Corporate income tax paid (Thailand)	Million THB	861.14	1,436.65	6,340.41	2,151.77	
● Household tax paid (Thailand)	Million THB	20.15	20.26	20.63	20.65	
● Annual land lease and upfront	Million THB	217.62	217.62	217.66	225.67	
Significant estimated aggregate financial assistance receive from government	Million THB	1,174.64	1,366.85	1,721.98	35.32	
Community Investment	Million THB	30.77	46.85	93.12	71.84	
EBITDA	Million THB	21,393	17,381	28,760	20,350	
Net Profit	Million THB	12,062	8,956	14,853	12,320	
Total Assets	Million THB	137,745	147,148	155,087	170,676	
Total Liabilities	Million THB	66,058	71,578	70,053	79,952	
Shareholders' Equity- Net	Million THB	71,687	75,570	85,034	90,724	
Earnings per Share	THB/Share	5.91	4.39	7.28	6.04	
Return on Equity	%	17.80	12.20	18.50	14.00	
Return on Assets	%	8.90	6.30	9.80	7.60	
Market Capitalization	Million THB	87,211	159,632	119,342	137,702	

Environmental Performance		Unit	2009	2010	2011	2012
Refinery Throughput	Million Ton	13.58	11.62	13.60	13.38	
Total Direct and Indirect Greenhouse Gas (Scope I and II)	Million Ton	4.90	3.31	4.54	4.73	
Refinery Greenhouse Gas Intensity	Ton/ Ton	0.36	0.28	0.33	0.35	
Total Direct Energy Use	Million GJ	98.43	58.66	85.90	89.89	
● Natural gas	Million GJ	67.23	29.11	60.62	65.42	
● Fuel oil	Million GJ	7.91	4.97	6.98	3.91	
● Fuel gas	Million GJ	22.63	23.76	17.50	19.86	
● Coke	Million GJ	0.66	0.79	0.79	0.69	
● LPG	Million GJ	0.01	0.01	0.01	0.00	
● Diesel	Million GJ	0.00	0.01	0.01	0.02	
Refinery Energy Intensity	Ton/ Ton	2.23	2.46	2.15	2.14	
Total Water Consumption	Million m³	14.10	11.26	14.22	13.91	
Industrial water supply	Million m³	8.37	4.99	8.09	8.04	
Seawater	Million m³	5.73	6.27	6.13	5.87	
Recycle Water	Million m³	0.61	0.66	0.70	0.65	
Percentage	Percentage	8.62	9.38	9.25	8.91	
Treated Wastewater Discharged	Million m³	4.20	4.26	4.09	4.04	
Biochemical Oxygen Demand (BOD)	Ton	27.80	33.30	33.00	35.00	
Chemical Oxygen Demand (COD)	Ton	152.11	150.75	136.32	136.91	
Total Oil and Grease	Ton	5.30	4.46	3.07	3.93	
Total Suspended Solids	Ton	41.91	48.90	41.04	37.93	
Nitrogen Oxide Emission	Thousand Ton	3.48	2.87	3.02	2.66	
Sulfur Oxide Emission	Thousand Ton	8.76	6.27	8.35	4.74	
Significant Oil and Chemical Spill	Ton	0	0	0	0	
Number of Significant Oil and Chemical Spill	Case	0	0	0	0	
Flaring	Thousand Ton	6.00	4.66	4.39	6.59	
Waste disposal	Ton	5,941	4,829	6,341	6,335	
● Landfills	Ton	495	454	665	428	
● Recycle	Ton	1,199	1,496	859	1,235	
● Recovery	Ton	4,404	2,715	4,582	4,157	
● Others (such as landfills)	Ton	143	420	480	664	

Social Performance (Occupational Health and Safety)		Unit	2009	2010	2011	2012
Near Miss	Case		2,189	2,118	1,420	2,438
Absentee Rate	Day		1,956	2,059	1,622	2,705
Total Recordable Injuries Case (Employee)	Person		0	1	0	1
Total Recordable Injuries Case (Contractor)	Person		5	4	5	7
Total Recordable Injuries Case (Employee)	Case/		0.00	0.55	0.00	0.60
	Million Work Hours					
Total Recordable Injuries Case (Contractor)	Case/		1.01	0.61	0.69	0.86
	Million Work Hours					
Lost Workday Case (Employee)	Case		0	0	0	0
Lost Workday Case (Contractor)	Case		2	0	1	1
Lost Time Injury Frequency Rate (Employee)	Case/		0	0	0	0
	Million Work Hours					
Lost Time Injury Frequency Rate (Contractor)	Case/		0.40	0.00	0.14	0.12
	Million Work Hours					
Occupational Illness Frequency Rate	Case/		0	0	0	0
	Million Work Hours					
Fatality (Employee and Contractor)	Person		0	0	0	0

Human Resource		Unit	2010	2011	2012
Total Employee	Person		1,127	1,277	1,211
Average Hours of Training per year per Male Employee	Hour		52	73	69
Average Hours of Training per year per Female Employee	Hour		34	28	45
Average Hours of Training per year for Executives	Hour		16	14	16
Average Hours of Training per year for Management	Hour		18	25	17
Average Hours of Training per year for Non-management employee	Hour		35	37	53

February

- Board with Consistent Best Practices
- Board of the Year for Distinctive Practices
- Audit Committee of the year 2010/2011

by :
Thai Institute of Directors

March

Thailand Quality Class (TQC) for Thai leading organization which applying integrated total quality management in world class standards

by :
Thailand Quality Award Center

April

Thai Oil Public Company Limited listed as the 1,288th largest company in the world by FORBES GLOBAL 2000 in 2012

by :
FORBES GLOBAL 2000

June

- Best Investor Relations award
- The third place for most committed to a strong dividend policy
- The sixth place for the best corporate social responsibility
- The eighth place for the best managed company

by :
Finance Asia

August

- 2012 Zero Accident Awards for Thai Lube Base Plc. Thai Paraxylene Co.,Ltd. and Independent Power (Thailand) Co.,Ltd.

by :
The Ministry of Labour

- Alpha Southeast Asia 2012 Awards, in many categories
 - The Strongest Commitment to Sustainable Energy in Southeast Asia
 - The Strongest Adherence to Corporate Governance
 - The Best Strategic CSR

by :
Alpha Southeast Asia Magazine

October

- Thailand Energy Awards 2012 for outstanding management in controlled factory and outstanding energy management team in controlled factory.

by :
Department of Alternative Energy Development and Efficiency, Ministry of Energy

- Platts: Top 250 Global Energy Company Rankings No. 11, Oil & Gas Refining & Marketing in Asia, and No. 17, Oil & Gas Refining & Marketing Worldwide
- No. 36 in Asia and No. 135 of the World (Overall Assets, Revenues, Profits, and Return on Investment).

by :
Platts: Top 250 Global Energy Company Rankings

November

- SET Awards 2012
 - Top Corporate Governance Report
 - Best Corporate Social Responsibility
 - Best Investor Relations

by :
The Stock Exchange of Thailand

Awards and Recognition in 2012

Membership in Sustainability Associations

Association

- Petroleum Institute of Thailand 2006
- Thailand Business Council for Sustainable Development (TBCSD) 2006
- Thai Environmental Corporation Foundation 2009
- CSR Club 2012

Year of Membership

11. GRI and UNGC Index

GRI Index	Description	Page	Note
1. Strategy & Analysis			
1.1	Statement from the CEO	12,13	
1.2	Key impacts, risks, and opportunities	16,19	
2. Organizational Profile			
2.1 - 2.9	Organizational profile	4,7-11	Thaoil website, no significant change
2.10	Awards received in the reporting period.	82-83	
3. Report Parameters			
3.1-3.3, 3.6-3.11	Reporting parameter	6	Annual sustainability report, April 2011
3.4	Contact point for questions	6	
3.5	Process for defining report content	6	
3.11	Significant changes from previous report	6	
3.12	GRI content index	84-86	
3.13	External assurance policy & practice	6	
4. Governance, Commitments, and Engagement			
4.1-4.7, 4.9-4.10	Governance	17,22-23,26	Thaoil Website, CG Manual P.16
4.8	Internally developed statements of mission or values, codes of conduct, and principles	3	
4.11	Precautionary approach	23	
4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives	23,26	
4.13	Memberships in associations	83	
4.14-4.17	Stakeholder engagement	16,17	
Economic Performance Indicators			
DMA EC	Disclosure on Management Approach EC	25	
EC1	Direct economic value generated and distributed	78	
EC2	Financial implications and other risks and opportunities regarding climate change	30-31	
EC3	The organization's defined benefit plan obligations	-	Annual Report P.231, 232
EC4	Significant financial assistance from government	78	
EC5	Range of ratios of standard entry level wage	61	
EC6	Locally-based suppliers	52-53	Local is defined as Thailand
EC7	Local hiring	52-53	Local is defined as Thailand
EC8	Infrastructure investments and services for public benefit	65	
EC9	Indirect economic impacts	8-9,33,71	
OG1	Estimated proved reserves and production	-	Not applicable

GRI Index	Description	Page	Note
Environmental Performance Indicators			
DMA EN	Disclosure on Management Approach EN	40-42	
EN1, EN2	Materials used and recycled input materials	79	Recycle input material not applicable
EN3, EN4	Energy consumption	79	EN4 not material due to Thaoil own power plants
OG2, OG3	Renewable energy	33,54	
EN5-EN7	Energy consumption reduction	31,33	
EN8-EN10	Water withdrawal, recycled and reused	34-35,	No significant affected
EN11-EN15, OG4	Biodiversity	79	water source by Thaoil
EN16-EN20	Significant air emissions and reduction initiatives	66-67	EN11, EN12 not material to our main business
OG6	Volume of flared and vented hydrocarbon	31,33,	EN17 to be reported in 2014, EN19 not
OG5, OG7	Produced water and drilling waste	42-43,	material due to ODS phasing out
EN21, EN25	Water discharge and Water bodies and habitat affected from water discharge and run off	79	
EN22-EN24	Waste and spills	44,79	Not applicable
EN26, EN27, OG8	Products and services	33	EN25 not material
EN28	Significant fines and sanctions for non-compliance with environmental laws and regulations	42	
EN29	Significant environmental impacts of transporting for the organization's operations workforce	51	
EN30	Environmental expenditures and investments	29	Data to be verified
Social: Labor Practices and Decent Work			
DMA LA	Disclosure on Management Approach LA	44-46,	
LA1-LA3	Employment	58-59,	
LA4, LA5		61-62	
LA6-LA9		61,81	Thaoil reorganizing HR data as a part of I-Link, the data will be reported in 2013
LA10-LA12		46,80	
LA13-LA14	Labor-management relations	59,81	LA5 not material
	Occupational health and safety	61,62	
	Training and education	46,80	
	Diversity and equal opportunity	59,81	
		61	Thaoil reorganizing HR data as a part of I-Link, the data will be reported in 2013, LA14 not material

GRI Index	Description	Page	Note
LA15	Return to work and retention rates after parental leave	61	Thaioil reorganizing HR data as a part of I-Link, the data will be reported in 2013
Social: Human Rights			
DMA HR	Disclosure on Management Approach HR	25,67	
HR1-HR3	Investment and procurement practices	26, 52-53	HR1 to be reported in 2014
HR4-HR7	Fundamental Principles and Rights at Work	25,53	None
HR8	Security practices	-	Not material in our operating area
HR9	Indigenous rights	-	Not applicable, no indigenous people in the area
HR10, OG9	Human rights review and impact assessment	67	OG9 not applicable, no indigenous people in the area
HR11	Grievance related to human rights	-	None
Social: Society			
DMA SO	Disclosure on Management Approach SO	26,66-67	
SO1, SO9, SO10, OG10, OG11	Local community engagement and impact management	40, 67-68	OG10 not applicable, no indigenous people in the area, OG11 not applicable, no decommission activates in the past and the near future
SO2-SO4	Anti-bribery and corruption	25-26	
SO5	Participation in public policy development	34	
SO6	Political contribution	25	
SO7	Anti-competitive behavior, anti-trust, and monopoly	26	
SO8	Significant fines and sanctions for non-compliance with laws and regulations	26	
OG12	Involuntary resettlement	-	No involuntary resettlement
OG13	Number of process safety	46	
Social: Product Responsibility			
DMA PR	Disclosure on Management Approach PR	54-55	
PR1-PR2	Customer health and safety	54-55	
PR3-PR5	Product labeling	54-55	
PR6-PR7	Marketing and communication	25-26	
PR8	Customer privacy and loss of customer data	26	
PR9	Significant fines and sanctions for non-compliance with product and service laws and regulations	55	
OG14	Biofuel produced and purchasing criteria	33	

GRI Index	Description	Page
United Nations Global Compact Principles		
Human Rights	Principle 1 Businesses should support and respect the protection of internationally proclaimed human rights	25-26,34,46,52-55,61-62,80
Labor	Principle 2 Businesses should make sure that they are not complicit in human rights abuses	25-26,34,52-53
Environment	Principle 3 Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	25-26,34,52-53,61-62
Anti-corruption	Principle 4 The elimination of all forms of forced and compulsory labour	25-26,34,52-53
	Principle 5 The effective abolition of child labour	25-26,34,52-53
	Principle 6 The elimination of discrimination in respect of employment and occupation	26,34,52-53,61,81
	Principle 7 Businesses should support a precautionary approach to environmental challenges	29-31,33-34
	Principle 8 Undertake initiatives to promote greater environmental responsibility	29,31,33-35,42-44,51,54-55,79
	Principle 9 Encourage the development and diffusion of environmentally friendly technologies	29,31,33-35,42-43,79
	Principle 10 Businesses should work against corruption in all its forms, including extortion and bribery	25-26,34



Refining

Sustainable

Operating Growth



Survey of Readers' Opinions

We would like to incorporate your valuable feedback to improve our Sustainable Development Report in the future. Your views and suggestions after reading this report will be reflected in our business activities and future Sustainable Development Reports. Please forward your response via post to Innovation and Sustainability Department, Thai Oil Public Company Limited (address on the back page).

Thank you very much for your cooperation.

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 Sustainable Development 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 Sustainable Development Report?

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

.....
.....