

5. THAILAND

5.1 Energy Policies and Actions

In 2006, Thailand's National Energy Policy and Development Plan have been approved by the National Energy Policy Council (NEPC) and the Cabinet.⁶⁷ The energy sector in Thailand is managed by the NEPC established under the National Energy Policy Council Act.⁶⁸ The gist are summarised as follows:

Short Term

- (i) Restructure and improve the energy industry management so as to optimise the efficiency of the national energy management.
- (ii) Procure energy so as to ensure sufficiency and security of energy supply
- (iii) Promote energy conservation and energy efficiency
- (iv) Promote Alternative Energy Suitable for Thailand in order to diversify fuel types and reduce dependency on energy import
- (v) Establish the Energy Price Structure so that energy pricing would be transparent, fair and would reflect the actual costs
- (vi) Establish Measures Pertaining to Clean Energy to reduce the environmental impact resulting from various forms of energy industry operation
- (vii) Promote the Private Sector and General Public Participation in Policy-Making to create understanding and cooperation in energy development of the country

Long Term

- (i) Energy Supply
 - Establish measures encouraging the national energy development and supply that is secure, sufficient and widely accessible and that helps reduce energy import from foreign countries; and
 - Support and promote the use of alternative energy as well as the study and research & development of other new alternative energy.
- (ii) Sustainable Energy Development
 - Attach importance to the application of modern technology to energy development in parallel with the reduction of environmental impact resulting from energy business development;
 - Comply with the environmental commitments that have been ratified by Thailand in the international forums;
 - Entrust joint responsibility for the environmental impact to energy producers, distributors and consumers; and
 - Promote the general public participation in energy management.
- (iii) Energy Efficiency
 - Support other agencies in the development of projects that will help reduce energy consumption, particularly oil, such as the improvement of mass transit and logistics systems, and the development of energy-saving

⁶⁷ Referenced to the web site of the Energy Policies and Planning Office (EPPO), <http://www.eppo.go.th/doc/gov-policy-2549/energy-policy-2006.html>

⁶⁸ Referenced to the web site of Energy Policies and Planning Office (EPPO), <http://www.eppo.go.th/doc/doc-manage.html>

vehicles.

- (iv) Promotion of Competition in the Energy Business
- Promote competition in the energy business to encourage efficiency and fairness, with the efficient regulatory system in place to ensure fairness for consumers.⁶⁹

In Thailand, the Energy Policies and Planning Office (EPPO) under the NEPC was responsible to oversee and formulate policies and plans, as well as to make recommendations regarding energy measures, so as to effectively satisfy energy needs of the country and leads to a sustainable energy security. Energy policies and measures that have been formulated by EPPO since the enactment of the National Energy Policy Council Act are summarised as follows:

- The Thai Government accelerates its procurement of natural gas from domestic concession areas as well as from abroad to meet the increasing demands.
- Thailand developed the long-term natural gas pipeline system (2001-2011) which can increase capacities on natural gas pipeline system in order to meet natural gas demand.
- The Cabinet has passed a resolution in 2002 to encourage and support natural gas utilisation in transportation sector during 2003-2008.
- There are policies on the procurement of adequate amounts of petroleum to satisfy demand while ensuring quality and security of supply at reasonable and fair prices.
- The National Power Development Plan (1999-2011) was established. The plan serves as an investment framework in the expansion of electricity generation and transmission systems.
- The Energy Conservation Promotion Act was implemented and aimed to promote energy conservation and encourage investment in energy savings in designated factories and buildings as specified in the law. Financial supports are provided to projects with the aim to increase energy efficiency which falls within the energy conservation programme. Details can be referred to section 5.5.⁷⁰

In March 2007, a Draft Energy Industry Act was issued which aims to promote efficient use of energy and natural resources in the energy industry operation, and promote the use renewable energy and energy that has less adverse impact on the environment in the electricity industry operation.⁷¹

⁶⁹ Referenced to the web site of the Energy Policies and Planning Office (EPPO), <http://www.eppo.go.th/doc/gov-policy-2549/energy-policy-2006.html>

⁷⁰ Referenced to a report from the Energy Policies and Planning Office (EPPO), <http://www.eppo.go.th/admin/book2006/eng.pdf>

⁷¹ <http://www.eppo.go.th/power/act2/EnergyAct-rev27feb50-E.pdf>, page 5

5.2 Environmental Evaluation/SEA in Thailand

There is, to date, no mandatory SEA in Thailand. It is recognised that SEA is a tool to indicate the strengths and the weaknesses of an area or region in terms of its natural resources and environment. An analysis of this kind should be made available before a policy calls for the development of an area or region (Pantumsinchai et al., 2004). In June 2005 the Office of National Environmental Board (ONEP) published Interim Guidance Notes on piloting for the country Environmental Assessment system. The guidance covers CEA, SEA, etc. (Unkulvasapaul, 2005).⁷²

Under the sector 46, Enhancement and Conservation of the National Environmental Quality Act (EQA) (1992), any projects or activities published in the Government Gazette types and sizes of projects or activities likely to have environmental impact, which are required to prepare the Environmental Impact Assessment (EIA) report to the Office of Environmental Policy and Planning and the Expert Review Committee for review and make approval before further proceedings.⁷³

With the aim to facilitate the evolution of SEA in Thai society, the preliminary synthesis of SEA approaches that are evolving in Thai society is performed. Below shows the four SEA approaches in Thailand:

SEA - EIA School

This SEA approach is mainly expanded from the EIA concept to perform above the project level, such as programme, or sometimes, mega-project. The main aims are to minimise environmental impacts by identifying mitigation measures. The main process of this SEA approach follows the EIA process of Screening, Scoping, Impact Analysis, Reporting, and Monitoring. Generally, it tends to address the development direction, programme, or mega-project that is already decided or preliminary determined by the government or decision-makers.

SEA - Area Base

This approach focuses on an area as the basis for considering strategic issues. It is the analysis on various aspects of an area to provide the scope and detail data for initiating or planning any development. An area for this SEA can be community and district to province and region. The main analysis is on natural resources and environment, for example, forest area, conservative and other ecological sensitive area, water and ground water resources, pollution sources, etc. Moreover, the analysis may include other aspects, such as cultural heritage sites, ethnic group, health services, etc.

Therefore, SEA Area base will provide the context of the area on various aspects. It

⁷² Referenced to "Environmental Impact Assessment Regulations and Strategic Environmental Assessment Requirements - Practices and Lessons Learned in East and Southeast Asia" by the Environment and Social Development Unit (EASES), April 2006, <http://siteresources.worldbank.org/INTEAPREGTOPENVIRONMENT/Resources/EIA&SEA-regional-review.pdf>, Pages 62-65 - Annex 11 Thailand

⁷³ Referenced to "Enhancement and Conservation of National Environmental Quality Act B.E. 2535, NEQA 1992", http://www.pcd.go.th/info_serv/en_reg_envi.html

may be use for considering the overall development potential of the area and initiating development project, or for the more specific purpose, selecting the appropriate site for programme or project development.

SEA Policy Options

The main aims of the SEA Policy Options are to support and influence the public decision-making process by providing information and analysis on the impacts of various policy options as well as the trade-off in each option. It will identify various policy alternatives and options and analyse the impacts on various aspects for the comparison of each option.

SEA Development Direction

Lastly, the forth SEA approach is following the concept and tool of Strategic Environmental Analysis (SEAN). SEAN has been developed to integrate environmental issues into strategic planning. It is a systematic and comprehensive analysis of context, value, factors, problems, and opportunities to synthesise the best strategic direction and/or option.⁷⁴



Power Plant in Thailand⁷⁵



Laying of Natural Gas Pipelines⁷⁶

⁷⁴ Referenced to the "Addressing Health in SEA for Healthy Public Policy: A contribution from SEA Development in Thailand" by the Health Systems Research Institute, Thailand, 2005, http://www.iaia.org/non_members/conference/SEA%20Prague/Prague%203/D3_Nuntavorakarn_Sabrum_Sukkumnoed.pdf, Pages 2-3 to 2-6

⁷⁵ Source: <http://www.eppo.go.th/admin/book2006/eng.pdf>

⁷⁶ Source: <http://www.eppo.go.th/admin/book2006/eng.pdf>

5.3 Environmental Evaluation/SEA on Energy Policies and Actions in Thailand

In Thailand, there is no statutory requirement for SEA in Thailand but with guidelines for SEA application in Thailand which proposed that SEA be used above the project level. Besides, SEA approaches (e.g. SEA EIA School, SEA Area Base, SEA Policy Options and SEA Development Direction) have been evolved to facilitate the evolution of SEA in Thai society. Details of the requirements should refer to section 5.2.

According to the Sector 46 and 47 of the Enhancement and Conservation of the National Environmental Quality Act (EQA), the following type and size of energy-related activities or projects require Environmental Impact assessment, including:

- The capacity of Thermal Power Plant are 10 MW or more.
- Any size of Petroleum development on Geophysical drilling, exploration and /or production
- Any size of Oil and gas pipeline system⁷⁷

In March 2007, a Draft Energy Industry Act was issued which aims to promote efficient use of energy and natural resources in the energy industry operation, with due consideration of the environmental impact, and promote the use renewable energy and energy that has less adverse impact on the environment in the electricity industry operation. Under this Act, any energy related activities should need to prepare environmental impact assessment to EPPO and the Expert Review Committee for review and make approval before further proceedings.⁷⁸

A summary table for the energy policies and actions and SEA status in Thailand is presented in **Exhibit TH-1**:

Exhibit TH-1 Summary of Energy Policies and Actions and SEA status in Thailand	
(a) Energy Policies and Actions	
Energy Policies and Actions	Policies <ul style="list-style-type: none"> • Thailand National Energy Policy and Development Plan Actions <ul style="list-style-type: none"> • Long-term natural gas pipeline system (2001-2011) • National Power Development Plan (1999-2011)
Guidance/Legislations in Energy	<ul style="list-style-type: none"> • Energy Conservation Act • Draft Energy Industry Act
(b) Environmental Evaluations / SEA Status in Energy Policies and Actions	
Type of Assessment	SEA
Requirement Mechanisms	Administrative
Legislation for Environmental Evaluation / SEA	N/A
Applications	Policies, Plans and Programmes

⁷⁷ http://www.onep.go.th/eia/ENGLISH/size/e_size_energy.html & http://www.onep.go.th/eia/ENGLISH/eia_eng_index.htm

⁷⁸ <http://www.eppo.go.th/power/act2/EnergyAct-rev27feb50-E.pdf>

5.4 Analysis and Conclusions

In Thailand, the National Energy Policy Council (NEPC) and the Cabinet outlined the energy policy and development plan. It ensures the security of energy supply, the energy efficiency, and the development of sustainable energy. The National Energy Policy Council Act aims to oversee and formulate policies and plans, as well as to make recommendations regarding energy measures. Subsequently, a Draft Energy Industry Act was issued which aims to promote efficient use of energy and natural resources, and promote the use renewable energy and cleaner energy that has less negative impact to the environment. In particular, the Thai Government has developed the long-term natural gas pipeline system (2001-2011) to increase the capacities and use of natural gas.

In Hong Kong, there were actions to promote energy conservation and efficiency, renewable energies and to tackle the global problem of climate change. The government has put in considerable efforts to promote energy efficiency and renewable energy in order to restrain the rise in energy demand. While Thailand accelerates its procurement of natural gas, Hong Kong has also used liquefied natural gas (LNG) as the fuel in the Lamma Power Station Extension to generate electricity.

Regarding the situation of Environmental Evaluation/SEA in Thailand, there is no mandatory SEA but with guidelines for SEA application in Thailand which proposed that SEA be used above the project level. Besides, SEA approaches (e.g. SEA EIA School, SEA Area Base, SEA Policy Options and SEA Development Direction) have been evolved to facilitate the evolution of SEA in Thai society.

While Thailand has no formal SEA requirement, Hong Kong has already two systems for SEA in Hong Kong, including an administrative requirement and a statutory requirement under Schedule 3 of the EIA Ordinance. The statutory requirements govern primarily large scale development projects (i.e. over 20 ha of area or population over 100,000), the administrative counterpart has been applied to land use planning, transportation and sectoral PPP. It may be a logical next step to consider:

- Combining the administrative requirements into the statutory system; and
- Providing further specific SEA requirements under the category of energy.

5.5 Examples of Energy Policies/Actions or their Environmental Evaluation/SEA

Example TH-1 The Contribution of SEA in Sustainable Energy Planning in Thai Power Sector 79	
Type of Study	Strategic Environmental Assessment
Description of Study	In this study, SEA is applied for long-term power planning in Thailand, one of the fast growing societies in terms of power consumption. This SEA study focuses on the Power Development Plan (PDP), which is a long-term master plan of Thai power sector. It determines the construction of all new power plants according to the long term power demand forecast. There are three main PDP options discussed and analysed, including (1) Existing PDP (PDP-Gas); (2) Electricity Generation Authority of Thailand (EGAT)'s alternative PDP (PDP-Coal); (3) Alternative PDP (PDP-Alt).
Summary of Alternatives	<p><u>3 Alternatives</u></p> <ul style="list-style-type: none"> ● The existing PDP: PDP-Gas (81% on Gas) ● The utility's alternative PDP: PDP-Coal (50% of new power plants switch to coal) ● The alternative PDP <ul style="list-style-type: none"> ➢ Adjust the forecast (5.6% Growth, adjusted to actual peak demand in 2003) ➢ Renewable Energy Technologies ➢ Co-generation ➢ Repowering ➢ Cancel and postpone the conventional projects
Scope of Assessment/ Study	The environmental parameters considered in the assessment were not mentioned in the report.
Environmental Measures	No mitigation measures were mentioned in the report.
Outcome of Study	Fuel cost, greenhouse gas emission and external costs of PDP-Alt are the smallest compared to the other two options throughout 2003 to 2015. Therefore, Alternative PDP is the best and most possible and affordable option, but it requires more decentralised system.

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http://www.iaia.org/non_members/conference/SEA%20Prague/Prague%206/B3_Sukumnoed&Nuntavorakarn%20Paper.pdf, pages 3-1, 3-10 to 3-13, 3-19 to 3-21

http://www.iaia.org/non_members/conference/SEA%20Prague/Prague%206/B3_Sukumnoed&Nuntavorakarn%20Presentation.pdf

Example TL-2 Energy Conservation Programme (ENCON) ⁸⁰	
Description of Programme	The ENCON aims to promote energy conservation and encourage investment in energy savings in designated factories and buildings. Financial supports are provided to projects with the aim to increase energy efficiency. The first phase of the programme was implemented during 1995 to 1999.
Programme Details	<p><u>Complusory programme</u></p> <ul style="list-style-type: none"> ● Energy conservation in government buildings which are not designated by laws so as to be exemplary in energy conservation and to reduce expenditures on energy cuts ● Financial support to owners of existing designated factories for the development of a comprehensive energy efficiency improvement plan and investment to improve energy efficiency according to the plan <p><u>Voluntary programme</u></p> <ul style="list-style-type: none"> ● Supports and assistance are provided by EPPO to various government agencies and private sector to implement energy conservation. Main projects include the promotion of wider use of renewable energy which has less adverse impact on the environment, such as biogas for power generation in livestock farms, power generation from landfills, PV grid connected system for schools with no power lines. <p><u>Complementary programme</u></p> <ul style="list-style-type: none"> ● Promote and increase the competency of human resources of the country in energy-related fields to facilitate the implementation of the ENCON Programme effectively and sustainable. Supports include development of curriculum, trainings, seminars, provision of teaching equipments and laboratories, scholarship for local and overseas universities, provision of research funds, providing supports to institutions to develop energy conservation curriculum <p><u>Activities for Students</u></p> <ul style="list-style-type: none"> ● Interactive activity for students in elementary level ● The activities were designed to be a Half Day Camp ● Follow-up activities were carried out to persuade students and teachers taken part in the camp to put knowledge gained into practice and efficiently disseminate the information. <p>There are also public relations activities through different campaigns and the production of public relations media to promote energy conservation.</p>

⁸⁰ <http://www.eppo.go.th/admin/book2006/eng.pdf>, pages 37-40