

Role of Public Participation in Planning Power Plant Projects in Thailand

Taweep Chaisomphob and Jaturong Sa-nguanmanasak

School of Building Facilities and Civil Engineering

Sirindhorn International Institute of Technology, Thammasat University

P.O. Box 22, Thammasat-Rangsit Post Office, Pathum Thani 12121, Thailand

Kanokporn Swangjang

Department of Environmental Science, Faculty of Science, Silpakorn University,

Nakhon Pathom 73000, Thailand

Abstract

Thai Power Plants are faced with public conflict. Public participation becomes a significant problem in project development between project proponents and local people. This research aims to evaluate the present status of public participation in development of power plant projects. Many projects in this group have some problems about environmental and social impact. Two power plants, namely Hin Krut and BLCPP Power Plant Project were evaluated and compared. They show that project development is more successful where the appropriate public participation is underway. Moreover, some lessons learnt from Australia are shown for improving and promoting the public participation process in Thailand.

Keywords: public participation, Environmental Impact Assessment, power plant project, Thailand

1. Background of Thai's Power Plant Project

Electricity Generating Authority of Thailand (EGAT) [5] reported that the Thai economy has recovered resulting in a greater demand for energy and electricity in 2002. Thailand's per capita electricity consumption was approximately 1,530 kWh per year. This increased by 3.7% per annum from 1997 to 2001. The tendency of energy consumption is continued further in the future, following the industrialized countries, and therefore EGAT is set to expand the power generation capacity to keep up with growing demand. Since 1992 EGAT has announced invitations to the private sector or Independent Power Procedure (IPP), to participate in producing electricity. This will help development of electricity generation, reduce the risk in investment, and increase the electricity performance in Thailand.

In the past many power plant projects had been implemented by decision-makers without community consultation or public participation. In the present time people realize that public participation should play an important role in

project developments. Many projects including power plant projects have faced the problem of public protest. These conflicts are in the manner of NIMBY (Not in My Back Yard). Some construction projects were cancelled or delayed, resulting in more costly design modification and expenditure. To solve this problem, the participation in environmental management and decision-making process of the project should be undertaken properly.

The aim of this research is to illustrate the public participation that integrates into the project development by comparing two power plant projects in Thailand, namely, Hin Krut and BLCPP Power Plant projects. Two of Australia's power plant projects have never been the subject of public complaints compared to those Thai projects.

2. Public Participation

There are many definitions of public participation. Mostly, they emphasize democratic principles. A person has the right to be informed, to be consulted and to express his or her views on matters which affect them

personally [13, 15]. Others see participation as an instrument for bringing public values, social objectives and preferences to decision processes that are primarily analytical [3].

Currently, in Thailand public participation is accepted as one component of Environmental Impact Assessment (EIA). It can increase public confidence in decision-making, reduce costs and decision delays, and prevent unforeseen situations arising from inaccurate information [1]. However there are some constraints regarding public participation which are, especially time-consuming and costly. Sometimes, it is difficult for the public to access the information. It may be too late or difficult to understand because many problems have already occurred [8].

So a suitable participation program is designed to reduce these problems. Techniques and methods for obtaining public participation are likely to vary. Different techniques have different relative effectiveness in terms of the level of contact achieved such as information provisions, information collection and feedback, consultation, and participation [12].

3. Law and Regulations

Public participation has an important role in project development as allowed by The Constitution of the Kingdom of Thailand (1997) [11]. The public have liberty to express their opinion and have a chance to participate in the management, maintenance, preservation and exploitation of natural resources and the environment. Moreover, they can get access to information from a State agency or local government organization before permission is given for the operation of any projects or activities which may affect the quality of the environment and local community.

Power plant projects that are more than 10 MW are required to submit an EIA before permission is granted [10]. EIA study is set up following the Enhancement and Conservation of the National Environmental Quality Act (ECNEQA) 1992. The aim of EIA is to predict, evaluate and interpret the significant environmental effects of a proposed project and to provide information for decision-making. Moreover it helps to promote and support the people's chance to participate in environmental management and project development. The Office of Natural Resource and Environmental

Policy and Planning (ONEP) is an administrator of EIA, issuing the EIA guidelines for projects in Thailand under the ECNEQA 1992.

Up to the present, minor laws or regulations that comply with The Constitution of the Kingdom have not been completed. However Thai regulations on public hearings were issued in 1996 by the Office of the Prime Minister to give an opportunity for the public to provide some comments in part of a project's decision-making. Public hearings are mandatory for some significant projects. Nevertheless, this creates some problems resulting from both the background of people affected and the attitude of project proponents. Moreover, the public participation in EIA, such as public notification and consultation, is also deficient.

In Australia, the Commonwealth's Environment Protection and Biodiversity Conservation Act (EPBC) 1999 [2] established an environmental assessment for approval of proposed actions that are likely to have a significant impact. Briefly there are three ways for the opportunity of public participation [18]. First, the public has a chance to give comments through the notification of proposals under EPBC 1999. The Minister for the Environment and Heritage considers whether an EIA should be required. Second, the public has the opportunity to participate in the EIA process in the manner of preparation of the Environmental Impact Statement (EIS). Last, the EISs are reviewed.

4. Case studies of Thailand

Energy Policy and Planning Office (EPPO) [7], Ministry of Energy reports that fuel and sources of electricity generation in Thailand comes from natural gas (70%), coal (17%), hydropower (6%), furnace oil (2%) and others such as biomass and renewable (5%). EPPO plans to increase the coal energy as its alternative approach because the cost of natural gas and fuel oil is unstable depending on the world situation. Hydropower still creates significant potential for environmental impact.

From the IPP program and power distribution system, EGAT signed a Power Purchase Agreement (PPA) with the Bo Nok, Hin Krut and BLCP coal-fired power plant projects. Bo Nok and Hin Krut power plant projects have faced conflict with local people who object to the environmental impact from

coal-fired power plants. In contrast, BLCPP power project has hardly had any public conflict. The lack of public participation is also realized to be a significant problem of public opposition.

Hin Krut power plant project is given as an example of an improper public participation process. The comparison of the two case studies, namely Hin Krut coal fired power plant and BLCPP power plant shows the weak points and strong points over those projects.

4.1 Hin Krut Power Plant Project

A 1,400 MW coal-fired power plant called Hin Krut Power Plant Project was one of the IPP projects which followed the government's policy to encourage the private sector to play a major role in assisting development of electricity generation in Thailand. Prachuab Khiri Khan Province has been selected to be the site of this project due to the government plan to develop a new industrial zone in the western part of Thailand. Coal fuel is chosen because of low and stable price compared to the other fuels such as petroleum and gas [9].

Union Power Development Co., Ltd. submitted a proposal to build Hin Krut power plant in June 1995 following the EGAT's invitation. The Environmental impact statement (EIS) was submitted to the Ministry of Science, Technology and Environment (MOSTE) in March 1997. After that Union Power Development Co., Ltd. signed a PPA with EGAT in June 1997. The EISs were approved in May 1998. There were two parts to the EISs. The first was a deep sea port part which concerns offshore structures. The second part was an onshore coal-fired electricity generating power station. Cooling water which is the main significant impact, is considered in the first EIS. In this EIS, data on coral reef location had been mainly obtained from government agencies without any input data from the local public who know the area well. As a result, data was later proved to be wrong by independent third parties. Consequently, the additional EIS on marine ecology was urgently enhanced and resubmitted, but it was too late to change the public image. While lack of public participation in the early stage became the significant problem which affected the local community related to the information and environmental management of the project.

A group of people objected to the construction of the power plant which would close the main highway in December 1998. The opposition grouped together at Prachuab Khiri Khan Province's city Hall to demand that the government change the project location. There was physical harm inflicted on the survey group from the university in September 2001. The opposition expected that the survey team would use chemical substances harmful to the environment. After many conflicts occurred, The Prime Minister visited the project site to listen to the public's opinions in January 2002.

The information center of the project was set near the site. The company emphasized local employment and sound environmental management. Other public participation processes occurred after there were a lot of conflicts between government/project proponents and local people. A public hearing on the project was scheduled for February 24-25, 2000 at Prachuab Khiri Khan Province's city Hall to solve the conflict, but some opposition groups of people debated in this meeting. Therefore this formal public participation process failed to achieve a conflict solution because people in the public hearing were mostly in favor of the project. However, the result of the public hearing recommended that the Tripartite Monitoring Committee (TMC) including government, project proponents and local community should be set up to solve any problems and undertake project monitoring. The project also provided some compensation programs for the community, such as the Artificial Corals Program with cooperation of the Fishery Department and the Sea Farming Program with cooperation of Chulalongkorn University [19]. However, the local community still did not trust the project and still opposed the project. The Hin Krut power plant project was delayed and finally terminated by changing to an alternative site.

4.2 BLCPP Power Plant Project

The BLCPP project was a 2x700 MW coal fired power plant selected by EGAT as one of the IPP policy. This project was located at Map Ta Phut, Rayong Province on the east coast of Thailand. It was selected for major industrial and economic development [17].

BLCPP Power Plant Project submitted the IPP bid in December 1994 and signed an

agreement with EGAT in November 1997. The EIA study of the onshore part was approved in January 2001 and the offshore part in February 2002 by ONEP. The public participation process started in September 2001. At present, the project has been in the construction period.

The Community consultation program was processed with a series of public consultation meetings instead of public hearings. BSCP power project linked with Environmental authorities such as ONEP and Industrial Estate Authority of Thailand (IEAT) and linked with the community by the Tripartite Committee. This is the same as the Hin Krut Power Plant Project. The company set the public participation strategy in two parts. The first part is to update information to the communities by a community meeting, public consultation, such as the Tripartite Monitoring Committee, and site visit to a coal-fired power plant. Another part is a people's opinion and attitude survey about the public participation process. The project's environmental impacts are monitored and mitigated by three independent committees: (i) BSCP Environmental Impact Assessment Monitoring Committee set up by the Governor of the IEAT, (ii) Tripartite Committee set up by Ministry of Industry, and (iii) Environmental Impact Monitoring Committee set up by the sheriff in the project area.

5. Lesson from Australia

The Electricity Supply Association of Australia (ESAA) [6] reports that the fuels used for Australia's electricity generation are coal (84%), natural gas (6.7%), hydropower (8.7%) and oil (0.6%). Australia is the world's leading coal exporter. The Tarong North Power Plant Project is an example of coal-fired power project development. While the trend of reducing greenhouse gas emissions increases, wind power is an alternative renewable energy source. It emits no greenhouse gases. The Portland Wind Energy Project is one example used to help develop renewable energy in Thailand.

5.1 Tarong North Power Plant Project

Tarong North is a single 450 MW advanced cycle coal-fired power plant project extension from 1400MW (4 x 350MW) coal-fired power plant. The responsible agency is Tarong Energy of the Queensland Government owned corporation that sells electricity into the

Queensland Electricity Market Pool to help ensure the secure and reliable supply of electricity throughout Queensland [16].

The existing Tarong Power Plant was completed in 1986. After that Tarong Energy was established in July 1997 following a restructuring of the Queensland electricity industry. Two years later in November 1999, the Queensland Government approved Tarong North to supply more electricity. Tarong North Project now is under construction and is scheduled to complete commissioning in early 2003.

The Tarong North Project hardly faced any public conflict because Tarong Energy has a good image in environmental management from the operation of Tarong Power Plant. Many policies of environmental management were set up, such as the International Standard for Environmental Management Systems; ISO 14001. Moreover, Tarong Energy had reduced greenhouse gases under Greenhouse Challenge Program since 1997.

Tarong North Project provided information of project progress by media such as newsletters, E-mail and Internet access and information bulletins. An open day at Tarong Community Park was set up for providing the local community with the opportunity to gain a view of the Tarong North project and also a site visit at the Tarong Power plant. A community consultation meeting consisting of stakeholders representing the local community was established quarterly to inform the community and to give feedback.

5.2 Portland Wind Energy Project

The Portland Wind Energy Project (PWEP) is proposed to generate 180 MW of clean electricity to supply the Victoria State and help to reduce Australia's greenhouse gas emissions. The responsible agency is Pacific Hydro Limited, a renewable energy company operating in Australia, South East Asia and the Pacific Basin. This project would involve the construction of four integrated wind farms in southwest Victoria.

Public notification referral was submitted under the Commonwealth's Environment Protection and Biodiversity Conservation Act 1999 (EPBC) in August 2000. After that The Minister for the Environment and Heritage decided that an Environment Effect Statement

(EES) was required under the Victorian Environment Effect Act 1978. The EES was approved in October 2002.

The public participation process occurred in two parts in the supplement of the EES. These are the Community Consultation Program and Social Impact Assessment [4]. The consultation program was set up before the preliminary design of wind farms by using community workshops, face-to-face interviews and newsletters to provide the opportunity for the local community to obtain project information and to give their opinion. The Stakeholder Reference Group was established with the representatives of key regional interests and various community groups to advice the draft assessment guideline [14].

6. Comparison of project performance/public participation process

Power plant projects mostly faced public conflict, especially coal-fired power plants. Local communities have worried about the environmental impact and have lost confidence. The public participation process can make the mutual understanding between public and project proponent/government and help the public to participate in the decision-making process. The comparison of project performance and public participation of each project case studies is illustrated in Table 6.1.

The different type and location of the project influences the people's attitude. The BLCP project is located in an industrial area, the same as Tarong North Project. This has less environmental impact compared to the Hin Krut Power Plant which is located near a tourist area. Portland Wind Farm has the advantage of renewable energy which has less environmental impact than coal-fire power plants.

The people's way of life of each project area also gives the different result. The local communities near Hin Krut Project are composed of fishermen and tourism related workers, while most local people near BLCP Project and Tarong North project are likely to adjust themselves with industrial development.

Hin Krut and BLCP Power plant Projects are compared for the problem of lack of public participation in early stages and no public participation in EIA process. The public participation in EIA was only a social survey. The main public participation of Hin Krut

Project was a public hearing and Tripartite Monitoring Committee. This took place after the public conflict happened already. The BLCP project established the community consultation program by emphasizing a public meeting and communicating with a key person such as the head of the community. The strength of BLCP is three Environmental Monitoring Committees that made more change for public participation to be sure that the environmental management follows the plan.

For the project in Australia, the public participation started in EIA process and used many techniques in the various stages. The community Stakeholder Group and many workshops have an important role for the public to promote trust and help to easily examine public issues.

7. Conclusion and recommendation

Power Plant Projects in Thailand should set up a public participation process to be of key importance in project development. From this study, it is clear that the government and project proponents should set up a public participation process parallel with designing a project, exploring alternatives, identifying potential environmental impacts, designing mitigation measures and monitoring the implementation of the environmental management program.

The public participation should be started in the earliest stage of planning to help in the wide context of planning and enhance the trust and good relationship in cooperation between the project and local community (e.g. Portland Wind Energy Project). This should be a community program to measure the people's feeling, and people's way of life after the project is operated.

The techniques for the participation program should be flexible depending on local community conditions and the social-political situation (e.g. Hin Krut Power Plant Project). The Thai Tripartite Monitoring Committee is the first important step as key participants in decision-making to set up in all projects that may cause significant impact to the environmental and local community.

Table 6.1 Comparison of project performance for the project case studies

Project Identification	Hin Krut Power Plant Project	BLCP Power Plant Project	Tarong North Power plant Project	Portland Wind Energy Project
Type and Size	1400 megawatt coal-fired power plant	1400 megawatt coal-fired power plant	450 megawatt coal-fired power station	180 megawatt wind power plant project
Location	Bangsaphan District, Prachuap Khirikhan Province, Thailand	Map Ta Phut, Rayong Province, Thailand	Adjacent to the existing Tarong Power Station, Queensland, Australia	Four coastal locations: Capes Bridgewater, Nelson, Sir William Grant, Yambuk, Victoria, Australia
Development period	Canceled and now considered in a site selection process	Construction period: July 2003-February 2007	Commercial operation in August 2003	Operation in 2005
People's way of life	Tourism development	Industrial development	Industrial development	Tourism development
Public conflict	Severe	Negligible	Negligible	Negligible
Public participation process	After EIA process	After EIA process	During EIA process	During EIA process
-Information provision	Information center, Exhibitions, E-mail and internet access	Exhibitions, Site visit	Information center, Exhibitions, Site visit, Local newspaper, Telephone help lines, Newsletters, E-mail and internet access	Site Visit, Newsletters, E-mail and internet access
-Information collection and feedback	Interviews, Surveys	Interviews, Surveys	Interviews, Surveys	Interviews, Surveys
-Consultation	Public hearing	Small group meetings, Public hearing	Small group meeting, Public meeting	Public meeting
-Participation	Tripartite Monitoring Committee	Three groups of Monitoring Committees	Community Stakeholders Groups, Workshops	Stakeholder Reference Group, Workshops

The other interesting point is building public confidence (e.g. Tarong North Project). It is important that local people have an understanding of the nature of a project and opportunities to make their views about it known to the proponent and to decision-makers. Thus, the right of public involvement should be started from the initial stage of project planning.

In addition, governmental agencies should provide the regulations and guidelines of public participation in the development of projects for providing more public participation and better future development.

8. Acknowledgements

The authors are truly grateful to the Thailand Research Fund for providing the financial support throughout this study. Special thanks are also given to the Department of Chemical Engineering, The University of Melbourne, Victoria, Australia for all their help.

9. References

- [1] Clark, B. D., Improving Public Participation in Environmental Impact Assessment, Built Environment, Vol.20, No. 4, pp. 249-308, 1994.
- [2] Commonwealth Environment Protection Agency (Australia), An Analysis of EIA Practices and Procedures in Australian States and Territories, Coopers & Lybrand (Australia), et al., Canberra, The Agency, 1994.
- [3] Delli Priscoli, J., Public Involvement, Conflict Management: Means to EQ and Social Objectives, Journal of Water Resources Planning and Management, Vol. 115, No. 1, pp. 31-42, 1989.
- [4] Department of Infrastructure, Assessment Guidelines Environment Effects Statement for the Portland Wind Energy Project Pacific Hydro Limited, Victoria, 2001.
- [5] Electricity Generating Authority of Thailand, 2002 Annual Report, Thailand, 2002
- [6] Electricity Supply Association of Australia (ESAA), Electricity Australia 2000 Book, Chart 2. 5, 2000.
- [7] Energy Policy and Planning Office, EPPO Journal, Vol.58, 2002.
- [8] Molesworth, S., The Case for and Against Community Participation, Seminar notes for Rivers and Community Resource: A Community Responsibility sponsored by MMBW, Melbourne, 1985.
- [9] National Energy Policy Office, Office of Environmental Policy and Planning, and the Electricity Generating Authority of Thailand, The Description of Hin Krut and Bo Nok Project at Prachuap Khirikhan Province, Bangkok, (Thai), 2002.
- [10] Office of Environmental Policy and Planning, Environmental Impact Assessment in Thailand, Bangkok, 1998.
- [11] Office of the Council of State, "Constitution of the Kingdom of Thailand, Government Gazette Press, Vol.114, part 55a, 1997.
- [12] Petts, J., Handbook of Environmental Impact Assessment: Public Participation and Environmental Impact Assessment, J. Petts (ed.), UK, Blackwell Science, 1999.
- [13] Sewell, W.R.D., and Coppock, J.T., A Perspective on Public Participation in Planning, W.R.D. Sewell and J.T. Coppock (ed.), Public Participation in Planning, John Wiley & Sons, London, pp.1-14, 1977.
- [14] Sinclair Knight Merz, Portland Wind Energy Project EES Community Consultation, Victoria, 2001.
- [15] Stoker, G., Local Political participation, New Perspectives of Local Governance, Joseph Rowntree Foundation, London, pp. 157-196, 1997.
- [16] Tarong Energy, 2001/2002 Annual Report, Queensland, 2002.
- [17] The Environmental Research Institute of Chulalongkorn University, Summary Environmental Impact Assessment: BLCP Power Project in the Kingdom of Thailand, Thailand, 2003.
- [18] Thomas, I. G., Environmental impact assessment in Australia: theory and practice, Leichhardt, N.S.W, Federation Press., 2001.
- [19] Union Power Development Co., Ltd., Action plan for Environmental Impact Mitigation Measure: Hin Krut Coal Fired Power Plant and Seaport Projects, Bang Saphan District, Prachuab Khiri Khan Province. Bangkok, Union Power Development Co., Ltd., 2000.