Procedural effectiveness of the new environmental health impact assessment (EHIA) process applied to power plant projects in Thailand

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Abstract

This paper seeks to evaluate the effectiveness of the newly legislated environmental impact assessment processes in Thailand, which includes a requirement to consider health (to create an 'environmental and health impact assessment' (EHIA) process) for particular types of project development, including power plant projects.

Data collection relies largely on documentary analysis. The approved EHIA reports for power plant projects are accessible online and three have been reviewed and evaluated in terms of their procedural effectiveness after Chanchitpricha and Bond (2013).

The findings suggest that, due to the legal requirement, the EHIAs for the three power plant cases almost fully meet the procedural effectiveness criteria, and the responsibilities of relevant authorities have been undertaken diligently, i.e. public participation and collaboration in the assessment process. However, analysis of the cases indicated that the effectiveness criteria used were deficient in not examining the timing of EHIA in relation to the timing of the project authorisation, and therefore a new criterion based on time enforcement has been added to the effectiveness framework. More insights are required to explore the extent to which other elements of effectiveness, i.e. substantive, transactive and normative, are satisfied.

Keywords: effectiveness, procedural effectiveness, impact assessment processes, EIA, HIA, EHIA, electric power plant project

1. Introduction

Promoting industrial investment has been continually maintained as government policy in Thailand since 1988 (The Prime Minister's Office, 1988, 2001, 2008, 2011, 2014). Concerns about environmental quality and adverse health effects have increasingly been included in the policy statement since 1981 (Environmental Impact Evaluation Bureau, 2010). For example, issues on environmental quality and effects on human health (The Prime Minister's Office, 1997), public participation in considering environmental impact on health and quality of life (The Prime Minister's Office, 2001), proposing and enacting the National Health Act (The Prime Minister's Office, 2006), increasing effectiveness of impact assessment (IA) processes (The Prime Minister's Office, 2011), and emphasis on environmental friendly industrial development (The Prime Minister's Office, 2014).

Statutory environmental impact assessment (EIA) was introduced as a decision making tool applying to 10 specific project types in 1981 (Environmental Impact Evaluation Bureau, 2010), and has since increased its application to 36 types of projects, by ministerial notifications. Whilst Thailand now has long experience of EIA application, problems have still arisen in practice, often leading to conflicts and controversy among relevant actors. For example, illness was an issue associated with the Map Ta Phut industrialised district (Sukkumnoed *et al.*, 2002); community rights were threatened by a proposed potash mine development in Udon Thani; and lead contamination was associated with a factory based at Klity creek in Kanchanaburi (Malailoy and Pongboonchan, 2011). This suggests that decision-making processes in the past have not been sufficiently supported by appropriate decision-making tools, in particular, EHIA. Hence, decision-makers have not been able to assure communities that their health would not be adversely affected by their decisions.

However, in August 2007, section 67 was inserted into the Thai Constitution B.E.2550 to additionally require the inclusion of health impact assessment as part of the EIA process (i.e. requiring an environmental and health impact assessment, EHIA, process), making Thailand one of the few countries to make HIA mandatory (see Harris-Roxas et al., 2012). A Government Notification (Notification B.E.2553 (no.1)) lists 11 project types, including power plants that should be subject to EHIA as part of the approval process.

In order to help make decision making effective and lead to positive impacts rather than negative consequences, there is an urgent need to measure the effectiveness of EHIA processes. This paper applies part of an effectiveness framework developed by Chanchitpricha and Bond (2013) to three cases of proposed power plant developments, which are currently in the public eye.

2. Procedural effectiveness criteria

The procedural effectiveness of impact assessment is related to the extent to which the assessment is conducted in line with implemented policies or procedures with the results unambiguously delivered to decision makers (Sadler, 1996, Baker and McLelland, 2003, Bina, 2007, Therivel, 2010). Chanchitpricha and Bond (2013) developed a set of criteria for measuring procedural effectiveness encompassing seven key criteria: relevant policy framework and procedures for IA processes (P1); institutional infrastructure characteristics (P2); integrating IA in the planning process (P3); identification of financial funds for IA practice (P4); involvement of stakeholders in the IA process (P5); capacity of IA to present clear and understandable evidence for decision makers (P6); and findings/report delivery to participating stakeholders (P7). This set of criteria is applied in examining the effectiveness of power plant project EHIA reports published online both by the Thailand Energy Regulatory Commission (ERC), the key decision maker for power plant development projects, at http://app04.erc.or.th/EHIA/Default.aspx and by the Independent Commission on Environment and Health (ICEH) which provides information for stakeholders who are interested in sharing opinions at www.iceh.or.th.

3. Context for power plant cases

Over time, economic growth has led to the need for capacity expansion of power generation, which is subject to planning based on forecasts of national demand (System planning division, 2010). This situation has led to a number of proposed power plant developments, each with a legal requirement to conduct EHIA under a process presented in **Figure 1**.

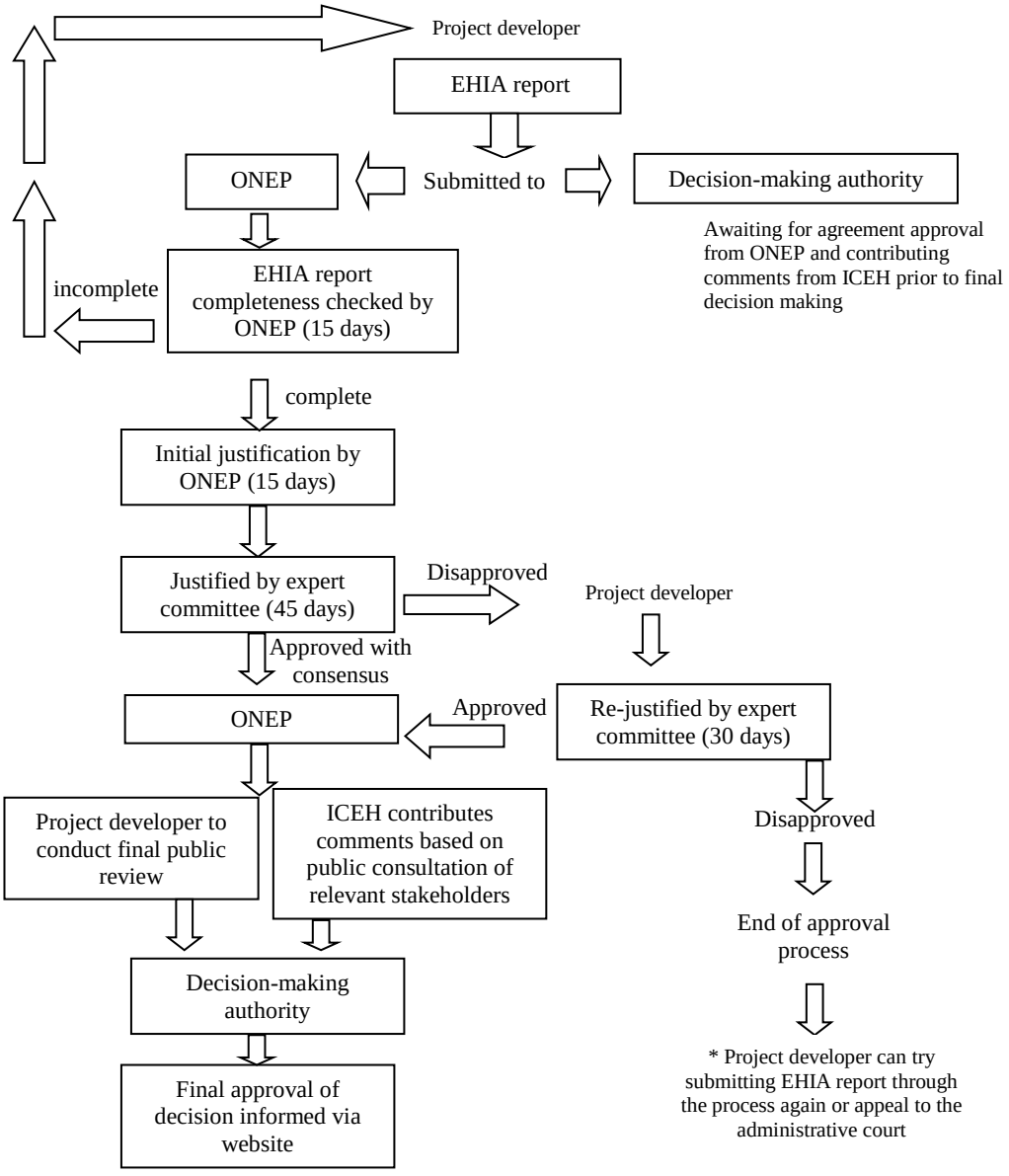

Figure 1 EHIA permission approval process where cabinet approval is not required (translated & adapted based on ONEP, 2014 p.64)

To date only three EHIA reports for power plant projects have been published online: GHECO-One thermal power plant project (2011) (developed by independent power producer, IPP); Bang Pakong Combined Cycle Power Plant Block 5 (2013) (developed by EGAT); and Mae Moh power plant unit 4-7 replacement project (2014) (developed by EGAT). The status of these projects is presented in **Table 1**.

Table 1 Power plant EHIA and project status

Project/ no. of EHIA practitioners	**Power plant capacity/ location**	**Fuel**	**EHIA started date**	**Project status when EHIA report was submitted**	**ONEP approval comments**	**Approval and permission of EHIA**	**Remarks**
GHECO-One thermal power plant / (15) [1)] EHIA published online on 14 December 2011	660MW/ Map Ta Phut, Rayong [1)]	Bituminus coal [1)]	First quarter of 2010	Construction started in 2011 (reported on 30 August 2011) [1)]	3 August 2011[1)]	28 March 2012 (Energy Regulatory Commission, 2012)	EHIA process/ Public review completed (based on ERC website)
Bang Pakong combined cycle power plant block 5/ (15) [2)] EHIA published online in February 2014	763.3 MW/ Bang Pakokg, Chachoengsao[2)]	Natural gas & oil[2)]	16 March 2011[2)]	Operation has been conducted (reported on 4 July 2013)	30 April 2013[2)]	In process	EIA approval & permission completed prior to conducting of legal EHIA[2)], EHIA is in process of public review (based on ERC website)
Mae Moh power plant unit 4-7 replacement/ (24) [3)] EHIA published online on 28 July 2014	600MW/ Mae Moh, Lampang [3)]	Lignite coal	11 JULY 2011	Construction has not started (reported on 2 May 2014)	13 February 2014[3)]	In process	EHIA public review has completed (based on ERC website)

Source: [1)] AIR SAVE CO. LTD. (2011), [2)] SECOT CO.LTD. (2013), [3)] TEAM CONSULTING ENGINEERING AND MANAGEMENT CO. LTD. (2014)

4. Results and discussion

As presented in **Table 2**, the EHIAs for the three power plant cases almost fully meet the procedural effectiveness criteria. This suggests that when there is legal mandate for EHIA (according to P1 criterion), officially involved stakeholders, i.e. project developers, EHIA practitioners, and approval authorities were able to conduct their responsibilities regarding the law. It seems that availability of such legislation allows relevant authorities to take responsibility more explicitly in impact assessment processes, which is supported by the comments made by Chanchitpricha (2012) and Ahmadvand et al. (2009) that relevant performance standards or regulatory framework can influence the quality of impact assessment in practice significantly. In terms of institutional characteristics (P2), environmental and health surveillance networks were provided partially in the Mae Moh and Bangpakong cases and were complete in the Gechco-one case with collaboration between relevant organisations in all three cases. Gechco-one is located in Map Tha Put industrial estate where close collaboration among the range of industries present can be more easily formed whereas the other two power plants are located alone. However, the collaborations of impact surveillance networks were formed at local level among relevant stakeholders.

Concerning integrating EHIA in to the planning process of the national energy development framework (P3), it is clear that aspects of environmental and health impacts are included in national energy regulatory strategic plan no.1 and no.2 (Energy Policy and Planning Office, 2012, Office of Energy Regulatory Commission of Thailand, 2007, Office of Energy Regulatory Commission of Thailand, 2012). Considering P4, funding for EHIA practice is available directly based on compulsory funding from the project developer, and indirectly through financial support from the Royal Thai Government available for researchers that are interested in doing research in this field.

Table 2 Reflection of environmental and health impact assessment report on procedural effectiveness

	Criteria / Case (year when EHIA conducted)	Criteria	Bang Pakong combined cycle power plant block 5 project (2010)	GHECO-One thermal power plant project (2011)	Mae Moh power plant's unit no. 4-7 replacement project (2011)	Note as discussion
Procedural effectiveness	P1	Relevant policy framework and procedures for EHIA process				*10th Plan and 11th Plan of national economic and social development plan and policy statement ** Notification of Natural resources and Environment Ministry Re: Rule, Procedure, Method and Guideline for preparation of the Environmental Impact Assessment Report for Project or Activity which may seriously affect community with respect to quality of environment, natural resources and health no.1 (2009) and no.2 (2010)
		1.1 Existence of governmental policy framework and national plan concerning health impact which may cause from national development*	Yes	Yes	Yes	
		1.2 Regulations in relation to guidelines or standard performance for EHIA process, procedure implementing in EHIA process, and licensing**	Yes	Yes	Yes	
	P2	Institutional Characteristics				It was stated in the environmental monitoring plan that, mainly, project developers are the key organisation to be in charge of the monitoring collaborating with other relevant organisations.
		2.1 Existing environmental monitoring network	Yes (EGAT)	Yes (GHECO-One)	Yes (EGAT)	
		2.2 Disease surveillance network	Yes (Local subcommittee)	Yes (local organisations)	Partially	
		2.3 Collaborations between relevant sectors	Partially (EGAT + subcommittee)	Yes (within IEAT community)	Partially	
	P3	Integrating EHIA in planning process of national energy development policy framework	Yes	Yes	Yes	Presented in National energy regulatory strategic plan no.1 B.E. 2551-2555, p.8 and in strategy 1 of National energy regulatory strategic plan no.2 B.E. 2556-2560, p.21
	P4	Identification of financial funds for EHIA practice				4.1 Responsibility of the project developer 4.2 Research fund available for researchers in higher education via grant from the Royal Thai government and from EGAT
		4.1 Funding for conducting EHIA	Yes	Yes	Yes	
		4.2 Funding for conducting relevant research to improve EHIA practice & guideline in Thailand	Indirectly	Indirectly	Indirectly	
	P5	Involvement of stakeholders in the EHIA process	Yes: As information provision, structured interview, public consultation	Yes As information provision, household attitude survey (structured interview), public consultation	Yes As information provision, structured interview (community leader), public consultation	Public participation was conducted at the stage of public scoping, impact assessment, public review. Involved stakeholders were community leaders and members within 5 km radius distance from the project site, relevant governmental/ local organisations, EGAT, consultant, ONEP, DIW, NGOs and general interested public.
	P6	Capacity of EHIA in presenting sound and clear, understandable evidence for the decision-making process with valid predictions, arguments, and clearly understandable	Yes	Yes	Yes	All of the cases received ONEP approval
	P7	Delivering the report to participating stakeholders	Yes	Yes	Yes	EHIA reports have been published online which opens them to the public to share opinions

Public participation (according to criterion P5) was undertaken based on the regulatory guideline prepared by ONEP to help implement the regulation provided by the Prime Minister's Office (B.E.2548) Re: Public Hearing Procedure, which states that public hearings can be conducted via opinion survey and public consultation. However, in terms of its evolution in Thailand, it is still a long way from reaching the top level of public participation categorised in theory, for example, by Petts (1999). For P6 on the capacity of EHIA in presenting qualified evidence for the decision-making process, the approval comment that ONEP provided for decision-makers (DIW and ERC) suggested that the reports are likely to meet this criterion. In terms of information delivery (P7), it is a great deal of help for those who are interested in power project development in Thailand to have access to the reports online and be able to follow the progress of each stage in the decision making process. This suggests that the digital era is providing opportunities for enhancing communication among people involved in impact assessment processes both directly and indirectly.

When considering the criteria set in **Table 2** for the EHIA cases outlined in **Table 1**, the time enforcement of project development has been missing from this procedural effectiveness criteria framework. Project construction and/ or operation of two cases in this paper had started prior to EHIA approval whereas the ERC's regulation, according to the Energy Industry Act B.E.2550, suggested that the construction can be conducted after the EHIA approval process by decision-making authority. Therefore, this finding suggests that time enforcement should be added as a new P8 criterion to the procedural effectiveness criteria framework.

5. Conclusion

The procedural effectiveness measured in this paper based on the review of three EHIA reports suggests that a good start has been to the statutory introduction of EHIA in Thailand. This is because it leads to processes, i.e. public participation, collaboration and deliberation that are all essential in the impact assessment process. The use of information technology enables anyone that is concerned about environmental and health impacts to research the evidence provided publicly through EHIA reports. Public response based on the published reports may be considered highly plural, but it is the starting point to improve the EHIA practice in Thailand. However, the identification of issues related to the timing of EHIAs in relation to decision-making lead to the conclusion that the procedural effectiveness criteria are flawed, and a new time enforcement (P8) criterion has been added to remedy this failing.

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