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Emergency Response for Thailand Energy Sector

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Abstract

Thailand primary energy largely depends on imported supply sources. Currently, Thailand imports crude oil and natural gas at about 80% and 40% of the annual consumption. Disruption on the energy supply could result in energy crisis in the country. The Ministry of Energy (MoEN) of Thailand and the International Energy Agency (IEA) had carried out Emergency Response Assessment (ERA) for Thailand energy sector. There are 5 areas that key recommendations have been made. In overall, Thailand's current emergency response system as "well prepared" and "steadily strengthened". This is due to excellent management of primary energy supply and well-functioning of the MoEN crisis management committee. However, there are rooms for improvement.

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1. Introduction

Energy security is very important for every country. The IEA defines energy security as "the uninterrupted availability of energy sources at an affordable price" [1]. Supply shortage could happen to energy sources of a country at any time. The results from the shortage could be short term and long term depending on preparedness of a country. For Thailand, Table 1 shows that share of imported primary energy in 2016 is about 62% of the total primary energy supply, with 6.4 % increasing from the previous year [2]. The increasing in imported energy is primarily due to decreasing of indigenous energy resources.

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Table 1 Primary energy supply of Thailand [2]

Year	Energy (ktoe)				Growth Rate (%)			
	2013	2014	2015	2016*	2013	2014	2015	2016*
Consumption	2,002	2,052	2,080	2,092	1	2.6	1.3	3.6
Production	1,078	1,073	1,026	1,067	-0.4	-0.5	-4.3	5
Import (Net)	1,131	1,171	1,252	1,295	4.2	3.6	6.9	6.4
Import/Consumption (%)	56	57	60	62	2.8	0.9	2.8	
GDP (%)	2.8	0.9	2.8					

Since Thailand highly depends on external supply sources, supply shortage could enormously affect the country in a number of aspects. Thus, energy security becomes very important issues and it is one of the 5 key policies for Ministry of Energy of Thailand. In Thailand Integrated Energy Blueprint (TIEB), the Ministry aims to increase the level of supply security of Thailand by 23% in 2036 (Figure 1). One of the key actions is the supply disruption preparedness.

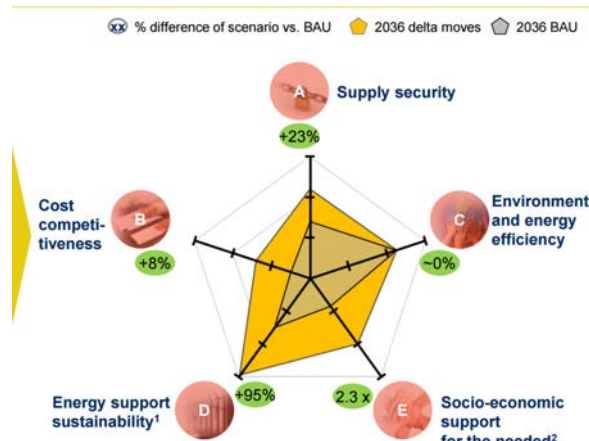


Fig.1. Thailand Integrated Energy Blueprint (TIEB) [3]

Studies and implementation of national/international energy emergency preparedness had been extensively carried out by the IEA since the IEA was created in 1974. Recently the IEA had published “Energy Supply Security: The Emergency Response of IEA Countries - 2014 Edition”, in which the policy and assessment on oil, gas, and electricity of the 29 IEA member countries, and key partners such as Chile, China, India and ASEAN are included [4].

For Thailand, the activities on energy emergency preparedness was started since 2009 when participants from the Ministry of Energy of Thailand joint the Emergency Response Exercise (ERE). Then, Emergency Response Assessment (ERA) for Thailand had been carried out in 2011 by IEA and the Ministry. The results from the ERA provided key improvement energy security issues for Thailand. This paper illustrates keys activities that were resulted from the ERA. Recommendations for further energy security improvement is also presented.

2. Thailand energy systems

Each country has different energy systems. For Thailand, natural gas, crude oil and coal are the major primary energy forms. These primary energy forms are procured from different sources. On the other hand, electricity and product oils are common final energy forms, as apparently in every country.

Figure 2 illustrates the energy systems on Thailand. Primary energies enter on the left side of the figure. The primary energies are processed in different facilities to become final energies. The figure also indicates key governmental agencies that legally governs each process. It can be seen clearly that extensive coordination among these agencies is needed in order to have smooth operation.

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