

## Executive Summary

Dense cross-border power grid connections can benefit the ASEAN region through maximum use of untapped resources for power generation and achieve power supply stability with low investment for power stations. This study aims to support existing initiatives, i.e. ASEAN Power Grid and GMS Power Master Plan, by quantitatively showing possible economic and environmental benefits of such power grid connections.

The study selected from candidate international connection lines extracted in the fiscal year 2013 study<sup>1</sup> specific routes for further examination. The study carried out the preliminary planning and cost estimation for the selected routes and cross-border line per kilowatt hour. The estimated results indicate that although cross-border connection lines are capital-intensive projects, attainable benefits seem large enough to rationalise investment.

Case	Gross benefit (A)		Cost (B)		Net benefit (C)=(A)-(B)		Benefit/Cost ratio (D)=(C)/(B)	
	[Million US\$]	[US¢/kWh]	[Million US\$]	[US¢/kWh]	[Million US\$]	[US¢/kWh]	[-]	
B	THA—LAO	21,387	3.77	1,506	0.26	19,881	3.51	13.2
E	VNM—LAO—THA	24,707	3.68	2,097	0.32	22,610	3.36	10.8
G	LAO—THA—MYS—SGP	27,490	3.88	2,000	0.28	25,490	3.60	12.7

LAO = Lao People’s Democratic Republic, MYS = Malaysia, SGP = Singapore, THA = Thailand, VNM = Viet Nam.

Source: Author.

To materialise these beneficial investments, we propose the following policy recommendations.

First, the region needs to establish a regulatory or coordination body to oversee the entire electricity market in the region. The body needs to harmonise rules for cross-border line connections and electricity transactions. Second, efficiency of investment for power stations and transmission lines need to be improved. At present,

<sup>1</sup> ERIA (2014), Investing in Power Grid Interconnection in East Asia, September.

the region does not coordinate country-based power development plans (PDPs). High costs in country-based PDPs can be avoided with more cross-border connections and electricity trade. Last, harmonisation of technical standards regarding cross-border interconnection is an indispensable precondition.