

**High Level Forum on Lao-Thai Partnership
in Sustainable Hydropower Development
Background Note**

Introduction Lao PDR is a small landlocked country endowed with natural resources. The country is tapping these resources, particularly the potential of its water resources, to improve the quality of life of its six million inhabitants. In doing so, it is important to ensure that resources are soundly managed so that benefits accrue not only for the current, but also for the future generations. Hydropower is an important contributor of Lao PDR's economic growth and poverty reduction efforts, and exports in this sector amount to approximately 30% of all of Lao PDR's exports. Numerous hydropower projects, which add to the existing ones, are being planned in several river basins that will sell electricity to neighboring countries. While much of the installed capacity for hydropower generation began in the mid 1990s, today there are several new hydropower (Nam Theun 2, Nam Ngum 2) plants under construction or at an advanced stage of planning (Nam Theun 1, Nam Ngum 3). Thailand is set to buy 5000 MW of hydropower from Lao PDR in the coming decade. Much of the investments come in the form of public-private partnerships. Lao PDR provides long-term concessions to private developers to finance, build and operate hydropower plants, and then transfer it to the state at the end of the concession period which normally lasts 25 years. The Government of Lao PDR (GOL), through either Electricite du Laos (EdL) or Lao Holding State Enterprise (LHSE), takes an equity stake in such partnerships which are operationalized through special purpose vehicles; the other partners include a consortium of developers which consist of power utilities (e.g. EGCO, EdF, Ratchaburi PLC), construction companies (Ital-Thai, Chaokarncheng) or others. The buyer on the Thai side is the Electricity Generating Authority of Thailand (EGAT).

Quality of Investments Investments in hydropower development in Lao PDR have benefited both countries through improved electrification, as well as providing Lao with revenues for implementing poverty reduction programs. However, the management of environment and social impacts caused by these plants has been a cause for concern. In the early years, very modest efforts were made to protect the environment and improve the living conditions of project affected people. However, later projects such as Houay Ho and Theun Hiboun began progressively undertaking more improved analysis of environmental and social impacts and risks, and developing programs for their mitigation. More recently, for the development of the Nam Theun 2 project, extensive studies and analysis of environmental and social impacts were undertaken, and a range of mitigation measures have been designed. Some of these could be considered as industry best practice, not only locally and regionally, but globally.

The design and implementation of these mitigation measures have thus significantly improved the overall *quality of investment* in the hydropower sector. Benefits are not only shared by the consumers but also more broadly by the affected people in the project areas, the poor and vulnerable in Lao PDR, and the environment and ecosystems locally and globally. Moreover, improving the quality of investment also demonstrates the social and environmental stewardship from both the industry and public sector in Thailand, their corporate social responsibility and the realization of the "triple bottom line" (economic, environmental and social).

The challenge now is the replication and adaptation of these collective experiences in Thailand and Lao over the past decade in the new hydro projects currently under development. To realize this vision, the

Government of Lao PDR issued in 2006 a National Policy on the Environmental and Social Sustainability of the Hydropower Sector.

Purpose of the Forum The Forum will be jointly hosted by the Minister of Energy of Thailand and the Minister of Energy and Mines of Lao PDR with support from the World Bank. The main objective of the Knowledge Forum is to share lessons learned and applying these to define a framework of actions that will lead to continuous improvement in the quality of investments. The participants will: (a) share experiences from past projects; (b) learn more about GOL's hydropower policy, implementation capacity and Thailand's environment assessment practices; (c) assess opportunities for further refining due diligence practices in new projects by government agencies, commercial banks, international financing institutions, and power buyers; and (d) improve understanding of the benefits of "triple bottom line" for owners, consumers, developers and other stakeholders.

Participants The invited participants for this forum will be Ministers and senior officials of the Government of Lao PDR and the Royal Thai Government; owners and operators of existing power plants; developers of future power plants; major contractors and sub-contractors for hydro plants; local, regional and global commercial banks and financing institutions; Thai stock exchange; industry, environment and social experts; civil society groups, academia and the media. Total number of invited participants is expected to be around 65 with about 10 to 15 high level representatives from Lao.

Outcomes of the Forum The anticipated outcomes are:

- (i) Improved understanding of the implementation experiences of existing projects and lessons that could be applied to new projects in the pipeline;
- (ii) Recommendations for various parties to consider for implementation to enable GOL to realize the vision and goals set out in its Hydropower Policy, and also enhancing Thailand's regional environmental stewardship; and
- (iii) Institutionalizing the High Level Forum as an annual event, with technical workshops/seminars in the intervening period, as needed.

Date and Venue for the Forum The first Forum will be held in Bangkok, Thailand, on September 6-7, 2007 at the Shangri-La Hotel.

ANNEX 1: Existing and Future Hydropower Plants in Lao PDR

Table 1. Existing Hydropower Plants in Lao PDR (as of 2007)

Project & Province	Year of completion	Capacity (MW)	Annual Production (Million KWh)
Nam Mung 3	2004	40	138
Nam Leuk (Vientiane)	2000	60	230
Houay Ho (Attapeu)	1999	150	617
Nam Theun-Hinboun (Khammouane)	1998	210	1,620
Nam Ko (Oudomxay)	1996	1.5	-
Nam Phao (Bolikhamsay)	1995	1.6	-
Xeset 1 (Saravane)	1994	45	180
Nam Ngum 1 (Vientiane)	1970	150	998
Nam Dong (Luang Prabang)	1970	1	5
Selabam (Champassack)		5	24
Total		624	3,674

Source: LNCE, 2007 (www.poweringprogress.com)

Table 2. Planned Power Projects with Markets in Lao PDR and Thailand, 2009-2015

Name of Project	Installed Capacity	Status Progress (Planned) COD	Investors	Market	Cost USD million	
Xeset 2	76 MW	CA, Under Construction	2009	• EdL 100%	Lao PDR / Thailand	135
Nam Theun 2 Hydropower	1088 MW	CA, Under Construction	2009	• LHSE (Lao PDR) 25% • EDF (France) 35% • EGCO (Thailand) 25% • ITD (Thailand) 15%	Thailand / Lao PDR	1,250
Nam Lik 1-2	100 MW	CA, Under construction	2010	• CWE (China) 80% • EdL 20%	Lao PDR / Thailand	150
Nam Ngum 5	120 MW	CA	2010	• Sinohydro 85% • EdL 15%	Lao PDR / Thailand	195
Nam Ngum 2 Hydropower	615 MW	CA, Under construction	2011	• Shlapak Group (USA) 4%; • EdL 25%; • Ch. Kanchang (Thailand) 28.5%; • PT Construction & Irrigation Co. (Lao PDR) 4%; • Ratchabury (Thailand) 25%; • Bangkok Expressway PCL (Thailand) 12.5%; • TEAM Consulting (Thailand) 1%	Thailand	790
Xekatum	60 MW	PDA under negotiation	2012	• Lao PDR~25% • Kansia ~75%	Thailand / Lao PDR	N/A
Theun-Hinboun Hydropower Expansion	220+60 MW	CA / PPA under negotiation	2012	• EdL 60% • Nordic Group 20% • MDX (Thailand) 20%	Thailand / Lao PDR	N/A
Nam Ngum 3 Hydropower	440 MW	CA / PPA under negotiation	2013	• LHSE 23% • Marubeni (Japan) 25% • TEPCO (Japan) 25% • GMS (Thailand) 27%	Thailand	N/A
Nam Theun 1 Hydropower	523 MW	CA / PPA under negotiation	2013	• LHSE ~ 20% • Gamuda (Malaysia) • EGCO	Thailand / Lao PDR	N/A
NamBak 1-2	150 MW	Under study	2013	• SEAN	Thailand / Lao PDR	N/A

Nam Ngeip 1	261+16 MW	CA / PPA under negotiation	2014	<ul style="list-style-type: none"> • LHSE ~ 20% • Kansia & EGAT ~80% 	Thailand/ Lao PDR	N/A
XePain- XeNamNoi	~400 MW	Under study	~ 2014	<ul style="list-style-type: none"> • Lao PDR • SK Engineering • Korea Western Power • Ratchabury 	Thailand/ Lao PDR	N/A
Donsahong	240 MW	Under study	TBC	<ul style="list-style-type: none"> • Lao PDR • Mega First 	TBC	N/A
Sekong 4, Sekong 5, Nam Kong 1, NamKong 3	~1,000 MW	Under study	TBC	<ul style="list-style-type: none"> • Lao PDR • Region Oil 	TBC	
TOTAL	5,369 MW					

Source: LNCE, 2007 CA = Concession Agreement; PPA = Power Purchase Agreement; NA = Not Available; TBC=To Be Concluded