

**PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE**

Report No.: PIDA23578

Project Name	Power Grid Improvement Project (P149599)
Region	EAST ASIA AND PACIFIC
Country	Lao People's Democratic Republic
Sector(s)	Transmission and Distribution of Electricity (50%), Energy efficiency in Heat and Power (50%)
Theme(s)	City-wide Infrastructure and Service Delivery (100%)
Lending Instrument	Investment Project Financing
Project ID	P149599
Borrower(s)	Ministry of Finance
Implementing Agency	ELECTRICITE DU LAOS
Environmental Category	B-Partial Assessment
Date PID Prepared/Updated	07-Apr-2015
Date PID Approved/Disclosed	07-Apr-2015
Estimated Date of Appraisal Completion	10-Apr-2015
Estimated Date of Board Approval	23-Jun-2015
Appraisal Review Decision (from Decision Note)	The Decision Meeting authorizes appraisal to begin.

I. Project Context

Country Context

With a current GDP per capita of US\$1,660 in 2013 and a population of 6.7 million, Lao PDR, though still one of the poorest countries in Southeast Asia, is currently undergoing a rapid economic expansion. The country is endowed with natural resources and it is in the midst of a fast growing region. This combination of comparative advantages, along with policy steps to exploit them, has yielded an average real GDP growth rate officially estimated at close to 7.5 percent per year for the past 15 years.

The country has made significant strides to becoming more integrated internally, and with the regional and international trading system. Besides the hydro-power sector, continued public investment in basic infrastructure, especially roads, has fostered internal and regional integration, supporting growth in agriculture, transport and tourism. The country has also become more open to its region and to global trade. Underlining the policy shift towards establishing a rules-based system for governing trade and private sector development, Lao PDR completed its accession to the World Trade Organization (WTO) in February 2013. The country is also preparing for Association of Southeast Asian Nations planned establishment of a single market, the ASEAN Economic

Community (AEC), in 2015. National poverty line halved in two decades, from 46 percent in 1992/93 to 23 percent in 2012/13. During the past five years, poverty continued to decline in Laos, but at a slower rate than before.

Sectoral and institutional Context

Demand for electricity in Laos has grown significantly in recent years along with rising electrification rate. The electricity peak load demand within Laos rose from about 209 MW in 2003 to 805 MW in 2014, growing on average 13 percent annually. This demand increase has been driven by the commercial and the industrial sectors and by rising rate of electrification in the country. The rising demand was met by dedicated domestic hydropower stations wholly owned by the state-owned power utility Electricite du Laos (EDL) and its subsidiary EDL-Generation (EDL-Gen), totaling 392 MW, Laos' share in and purchases from export-oriented independent power producers (IPPs), and electric interconnections with Thailand, China, and Vietnam. To supplement domestic power generation, in 2013 Laos imported about one-third of required electric energy (1,205 GWh), of which 80 percent came from Thailand, 18 percent from China and 2 percent from Vietnam. The cost of import reached US\$ 65.1 million, or about 0.6 percent of estimated 2013 GDP. By 2013, the total electric energy sales through the national power grid reached 3,381 GWh with residential customers accounted for 38 percent, followed by the industrial sector at 33 percent and the commercial sector at 22 percent. The latest power demand forecast, based on the official Power Development Plan for 2010–2020 revised in 2011, estimates the domestic peak load demand to exceed 2,500 MW by 2020 due to growing demand across all consumer groups. However, lower demand in recent years suggests that it may take longer than 2020 to exceed this level.

In parallel, export-oriented power projects and domestic projects are continuing to expand. By end 2013 the installed capacity of export-oriented hydropower projects reached 2,580 MW, including the IDA-supported Nam Theun 2 hydropower project (NT2) that was approved in 2005 and commissioned in 2010. Over 2,400 MW of export-oriented power projects are currently under construction, such as the 1,653 MW Hongsa thermal power project, the 410 MW Xepian-Xenamnoy hydropower project, the 280 MW Nam Ngiep1 hydropower project, and the 1,200 MW Xayabouly. The drivers of development in the hydropower sector in the country have remained fundamentally unchanged in the past decade. A number of export-oriented projects include dedicated power generation capacity for Lao PDR to help meet the domestic demand for electricity, such as the 75 MW under NT2, 60 MW under Theun Hinboun hydropower project, 175 MW under Hongsa thermal power project, and 40 MW under Xepian-Xenamnoy hydropower project. In addition, about 2,000 MW of domestic-oriented power projects are under various stages of construction, which may eventually provide excess capacity for Laos and be available for export.

The energy sector institutional framework is well defined. The Ministry of Energy and Mines (MEM) is the focal point for overall energy policy. Under MEM, the state-owned utility EDL is responsible for the electricity transmission and distribution (T&D) network and acts as a single-buyer of electricity for the domestic market. EDL's majority-owned subsidiary EDL-Gen is responsible for hydropower generation, with an installed capacity of 387 MW by mid-2014. In addition, the Lao Holding State Enterprise (LHSE) is the government's investment vehicle in export-oriented power projects where it holds government's equity stakes in projects such as NT2 and the Hongsa thermal power project.

The power sector development in Lao PDR has entered a new “post-electrification” phase which

brings new challenges and requires sustained improvements in the sector. The development of Lao power sector has achieved a major success by increasing the electrification rate from about 15 percent in mid 1990s to around 90 percent in 2014. While the electrification program nears its completion, the power grid is increasingly facing new challenges related to the fast growth of electricity demand. The main challenges are persistently high distribution losses, (averaging about 13 percent in 2014 with some areas experiencing losses of over 20 percent) and sub-standard electricity services, including low reliability of electricity supply due to overloading of the distribution grid particularly in major load centers such as Vientiane capital, Savannakhet, Takek, and Pakse. By focusing on these new challenges in the power distribution sector, the proposed Power Grid Improvement (PGI) Project will complement the Bank's on-going assistance and help support sustainable development of the power sector in Lao PDR.

II. Proposed Development Objectives

The project development objective is to help improve efficiency and reliability of power distribution in the selected load areas served by EDL.

III. Project Description

Component Name

Smart metering, distribution improvement and distribution losses reduction

Comments (optional)

This component is expected to introduce advanced metering infrastructure (AMI) technology and digital meters in the project area. In addition, it is expected to help improve reliability of power supply and reduce losses in selected parts of the distribution network through strengthening of power distribution infrastructure and distribution automation. This component includes rehabilitating power distribution lines, upgrading of conductors, increasing transformer capacity, placement of capacitors for reactive power and voltage control, installation of load break switches and reclosers, etc.

Component Name

Electric utility information system

Comments (optional)

There are three subcomponents: (i) Supply and installation of optical fiber communication links to support advanced metering and distribution automation; (ii) Extension of Geographic Information System (GIS) to support power distribution operation and maintenance; and (iii) Supply and installation of an updated corporate financial management information system (FMIS). This sub-component is expected to take a modular approach in modernizing financial management in EdL, including through the improvement of billing and collection system, which can be subsequently scaled up to a full enterprise resources planning system or be disaggregated according to EDL corporate structure.

Component Name

Institutional capacity building, consultancy, trainings, implementation support

Comments (optional)

This component is expected to include (i) financing for EDL's distribution materials and equipment testers and related trainings, (ii) applications of advanced metering infrastructure, (iii) applications of energy balancing and power flow software, (iv) consultancy for electric utility information system, (v) support to measure distribution system performance indicators, and (vi) project implementation support and incremental operating cost. This component is expected to enhance

EDL institutional capacity to utilize new technologies to address distribution losses and improve power grid efficiency.

Component Name

Contingent emergency response

Comments (optional)

The objective of the contingent emergency response component with a provisional zero allocation is to allow for the reallocation of financing in accordance with the IDA Immediate Response Mechanism in order to provide a rapid response to disaster or emergency events, as needed. This component would finance expenditures on a positive list of goods and/or specific works and services required for emergency recovery. An Emergency Response Manual (ERM) will apply to this component, detailing streamlined financial management, procurement, safeguard and any other necessary implementation arrangements.

IV. Financing (in USD Million)

Total Project Cost:	30.00	Total Bank Financing:	30.00
Financing Gap:	0.00		
For Loans/Credits/Others			Amount
BORROWER/RECIPIENT			0.00
International Development Association (IDA)			30.00
Total			30.00

V. Implementation

The project implementation readiness is adequate. EDL is the implementing agency and will be responsible for overall project coordination and management including financial management, procurement, monitoring and reporting. EDL will ensure that fiduciary requirements are met and comply with throughout the project implementation.

The project will finance mainly goods and small works. Most of the goods procurement packages are expected to be done through international competitive bidding and national competitive bidding. EDL has experiences in managing many World Bank-funded projects such as Southern Provinces Rural Electrification (SPRE), Rural Electrification Project Phase I (REP I), Rural Electrification Project Phase II (REP II) and GMS Power Trade Laos. The same Project Office structure will be used for this project. Over the years EDL has developed internal capacity to implement Bank-funded projects, although some experienced staff has been rotated to other responsibilities. The Bank will be providing refresher training and hands-on supports for the current EDL staff to implement the project.

VI. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	x	
Natural Habitats OP/BP 4.04		x
Forests OP/BP 4.36		x
Pest Management OP 4.09		x
Physical Cultural Resources OP/BP 4.11	x	

Indigenous Peoples OP/BP 4.10		x
Involuntary Resettlement OP/BP 4.12	x	
Safety of Dams OP/BP 4.37		x
Projects on International Waterways OP/BP 7.50		x
Projects in Disputed Areas OP/BP 7.60		x

Comments (optional)

VII. Contact point

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