



## Lao People's Democratic Republic: Northern Cross-Border Power Trade and Distribution Project

Project Name	Northern Cross-Border Power Trade and Distribution Project	
Project Number	51329-001	
Country	Lao People's Democratic Republic	
Project Status	Proposed	
Project Type / Modality of Assistance	Grant Loan	
Source of Funding / Amount	<b>Grant: Northern Cross-Border Power Trade and Distribution Project</b>	
	concessional ordinary capital resources lending / Asian Development Fund	US\$ 3.00 million
	<b>Loan: Northern Cross-Border Power Trade and Distribution Project</b>	
	concessional ordinary capital resources lending / Asian Development Fund	US\$ 24.40 million
Strategic Agendas	Environmentally sustainable growth Inclusive economic growth Regional integration	
Drivers of Change	Governance and capacity development Partnerships Private sector development	
Sector / Subsector	<b>Energy</b> - Electricity transmission and distribution	
Gender Equity and Mainstreaming	Some gender elements	
Description	The proposed Northern Cross-Border Power Trade and Distribution Project aims to promote regional power exchange in the Greater Mekong Subregion (GMS) and expand access to energy in several northern provinces in the Lao People's Democratic Republic (Lao PDR). The project will help address Lao PDR's need to: (i) expand access to low-cost, reliable power in rural areas; and (ii) develop power interconnections between Lao PDR and Thailand and Myanmar to increase power trade. The project will support the national electric utility, Electricite du Laos (EDL) to (i) expand distribution lines and provide off-grid alternatives in the provinces of Luang Namtha, Bokeo and Phongsaly; (ii) provide at least 8,000 household electricity meters for newly-connected customers; and (iii) construct one or more high-voltage transmission line(s) connecting northern Lao PDR with Mae Chan, Thailand and/or Shan State, Myanmar. The project builds on lessons learned from the GMS Northern Power Transmission Project and previous regional transmission support by the Asian Development Bank (ADB). The project is included in the country operations business plan, 2018- 2020 and the GMS Regional Investment Framework 2022.	

Project Rationale and Linkage to Country/Regional Strategy

The government's Eighth National Socio-Economic Development Plan (NSED), 2016 -2020 targets Lao PDR's graduation from least-developed country status by 2020, and sustainable economic, social, and environmental development. Although the country has experienced rapid economic growth and a substantial reduction in poverty over the last decade, primarily through exports from hydropower and mining, the challenges ahead include maintaining the momentum of high economic growth and making growth more inclusive for the country's 6.5 million people. As noted above, significant challenges remain in the energy sector, which is a key driver of Lao PDR's economy. Recognizing that expanded access to modern and affordable forms of energy, and better utilization of current energy resources, is essential for Lao PDR's continued social and economic advancement, the NSED 2016 -2020 prioritizes the need to develop the energy sector in an affordable, inclusive and sustainable manner.

Lao PDR is a land-locked country in the heart of the GMS, with the Mekong River serving as most of the western border with Thailand and Myanmar. Due to the country's large hydropower potential, estimated at more than 25,000 megawatts (MW), its central location and ability to supply power to energy-deficient neighbors, Lao PDR has been called the "battery of Southeast Asia." Over the past decade, the government has made significant progress both in terms of its ability to provide electricity to its citizens, and to export electricity (mostly hydropower) to primarily Thailand and Viet Nam. In 2016, electricity accounted for 21% of the country's exports. However, going forward, the government is facing challenges on both fronts. The private sector investments in generation have not been matched with a proportionate investment in transmission and distribution infrastructure. Thus, currently, the national grid capacity is insufficient to meet current peak demand in urban centers and keep up with growing domestic consumption, and the lack of a unified transmission and distribution system makes it challenging to increase electrification rates in border areas, especially in the northern part of the country, which are also among the poorest parts of the country. Additionally, there isn't enough high-voltage cross-border interconnections in the country to increase the export of electricity to its neighbors. Furthermore, reliance on hydropower leads to seasonal imbalances; during the wet season, hydropower is abundant and EDL has excess capacity; during the dry season, EDL experiences shortages of supply and must import power. Regional power trade can solve these imbalances and support expanded access in neighboring countries. As of January 2017, total installed power generation capacity is 6,391 megawatts (MW), producing about 33.8 terawatt-hour (TWh) of power annually. The majority of capacity (88.4%) is owned by independent power producers (IPPs), and is intended primarily for export, while only 11.6% is owned by EDL for domestic consumption. Generation is dominated by hydropower: of the 42 power plants currently in operation, 39 are hydropower plants, one is a coal-fired lignite plant, and two are sugarcane-bagasse powered plants. An additional 12 hydropower plants, representing 468.45 MW of capacity, are under construction and are slated to be operational by the end of 2017. EDL, the vertically integrated national electric utility, currently operates three separate grids in the country with 53 high-voltage substations and approximately 53,000 kilometers of transmission lines. Thirty-one transmission lines connect to neighboring countries: Thailand (17), China (4), Vietnam (7), Cambodia (2) and Myanmar (1). Six high-voltage (500 kV and 230 kV) lines are dedicated for export to Thailand and Vietnam, 19 medium-voltage (22 kV and 35 kV) lines are dedicated for import from all five neighbors, and six high-voltage (115 kV) lines allow for power exchange between Thailand and China. The majority of high-voltage transmission lines are owned by the private sector. The country plans to install 54 more transmission lines and another 16 substations by 2020. Plans include nine new cross-border high-voltage lines, six of which will be owned by EDL, including the first line for export to Myanmar. Owing to lack of progress with financing and intergovernmental memoranda of understanding (MOU), it is unclear how much of the government's plans will be realized.

The government's target to electrify 90% of total households by 2020 was achieved in 2016 with 92% electrification. However, EDL's fragmented transmission and distribution system does not yet cover the entire country. As a result, there is great disparity between urban and rural areas. In 2014, Bokeo, Luang Namtha and Phongsaly provinces had only attained a combined electrification rate of 79%, with Phongsaly alone achieving only 46%, while Vientiane had reached over 99%. Poverty remains high in these provinces, with an estimated 24% of households classified as poor in 2013, compared with 5.9% in Vientiane. Unconnected rural households must choose between expensive off-grid electricity (primarily diesel) or none at all. As part of its ongoing support for electrification and energy infrastructure development, ADB, with cofinancing from the Korean Export-Import Bank, is currently implementing the GMS Northern Power Transmission Project (footnote 1). The project supports the government to construct transmission lines and associated substations to expand access to grid electricity to consumers in Xaiyabuli, Phongsaly, and Vientiane provinces, and increase power trade with Thailand. The project is currently on track for commissioning of the transmission and distributions systems by June 2019, and provides significant lessons for management of future projects. In addition, ADB has recent experience in least-cost electrification planning in Indonesia and Myanmar, where ADB has also demonstrated that renewable energy mini-grids can provide high-quality services and offer a cost-effective alternative to grid extension.

Impact	Lao PDR graduated from LDC country status.
Outcome	Domestic electricity consumption and cross-border electricity trade increased
Outputs	Electricity distribution expanded in three Northern districts (Luang Namtha, Bokeo, and Phongsaly) Cross-border transmission line(s) connecting Lao PDR with Thailand and/or Myanmar constructed
Geographical Location	Nation-wide

**Safeguard Categories**

Environment

A

Involuntary Resettlement	B
Indigenous Peoples	B
<b>Summary of Environmental and Social Aspects</b>	
Environmental Aspects	During project preparation, ADB will study the environmental feasibility of all three cross-border options as well as options for expanded rural distribution and advise EDL on recommendations for moving forward. The TRTA team will review aspects environmental impact.
Involuntary Resettlement	No involuntary resettlement is involved. There will be procurement for small plots (5mx5m approx.) for some tower footings, but most of the routing is on Government land. Compensation for a 25m ROW and temporary impact in crops to be considered. The TRTA team will review aspects relating to involuntary resettlement.
Indigenous Peoples	The TRTA team will review aspects relating to poverty and employment impacts disaggregated by gender, carry out Indigenous Peoples (IP) assessment and due diligence. The team will also develop an inventory of potential losses and social economic surveys and engage in consultations with affected peoples (APs), local and national government agencies and other relevant stakeholders to facilitate board community support and document the process and outcomes of consultations with IP. The TRTA will assist ADB to perform the requisite public disclosure activities. Social safeguards document will be prepared.
<b>Stakeholder Communication, Participation, and Consultation</b>	
During Project Design	<p>The national utility, Electricite du Laos (EDL), provincial and district government agencies, local communities, APs/IPs will be consulted for the proposed project. They will participate in the project planning, implementation, and monitoring through various ways including i) consultations with stakeholders (government and non-government entities) to get inputs on the project design, required permits, and mitigation measures for APs/IPs; ii) public consultation meetings and focus group discussions (FGDs) with communities and APs/IPs to get their view and suggestions on the project potential impacts and mitigation measures.</p> <p>Meaningful consultation will be carried out during the TRTA stage and it will be continued on an ongoing basis throughout the project cycle. Views of concerned parties will be elicited with regard to project potential impacts, resettlement, social risk, and mitigation measures, and properly recorded. The methods to be used for consultations will include i) public consultation meetings and FGDs with potential APs/affected IPs; ii) limited household surveys; and iii) meetings and interviews with government officials both at national and local levels; iii) meetings with informal leaders/groups in all project areas.</p>
During Project Implementation	
Responsible ADB Officer	Tharakan, Pradeep J.
Responsible ADB Department	Southeast Asia Department
Responsible ADB Division	Energy Division, SERD
Executing Agencies	<i>Electricite du Laos Samsenethai Road, P.O. Box 309 Vientiane Lao People's Democratic Republic</i>
<b>Timetable</b>	
Concept Clearance	22 Nov 2017
Fact Finding	01 Oct 2018 to 05 Oct 2018
MRM	03 Dec 2018
Approval	-
Last Review Mission	-
Last PDS Update	22 Mar 2018
Project Page	<a href="https://www.adb.org/projects/51329-001/main">https://www.adb.org/projects/51329-001/main</a>
Request for Information	<a href="http://www.adb.org/forms/request-information-form?subject=51329-001">http://www.adb.org/forms/request-information-form?subject=51329-001</a>
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