



Report and Recommendation of the President to the Board of Directors

Project Number: 41924
July 2014

Proposed Loans Nam Ngiep 1 Power Company Limited Nam Ngiep 1 Hydropower Project (Lao People's Democratic Republic)

This is an abbreviated version of the document approved by ADB's Board of Directors that excludes information that is subject to exceptions to disclosure set forth in ADB's Public Communications Policy 2011.

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 4 July 2014)

Currency unit	–	kip (KN)
KN1.00	=	\$0.00012
\$1.00	=	KN8,047

Currency unit	–	baht (B)
B1.00	=	\$0.03085
\$1.00	=	B32.41

ABBREVIATIONS

ADB	–	Asian Development Bank
EDL	–	Electricité du Laos
EGAT	–	Electricity Generating Authority of Thailand
EGATi	–	EGAT International
GMS	–	Greater Mekong Subregion
Kansai	–	Kansai Electric Power
km	–	kilometer
KPIC	–	KPIC Netherlands B.V.
kV	–	kilovolt
LHSE	–	Lao Holding State Enterprise
MW	–	megawatt
NNP1PC	–	Nam Ngiep 1 Power Company
NN2	–	Nam Ngum 2
OCR	–	ordinary capital resources
PPA	–	power purchase agreement
PPP	–	public–private partnership

NOTES

- (i) The fiscal year of Nam Ngiep 1 Power Company ends on 31 December.
- (ii) In this report, "\$" refers to US dollars.

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PROJECT AT A GLANCE

1. Basic Data		Project Number: 41924-014	
Project Name	NAM NGIEP 1 HYDROPOWER PROJECT	Department /Division	PSOD/PSIF2
Country	Lao People's Democratic Republic		
2. Sector		Subsector(s)	
✓ Energy	Large hydropower generation		ADB Financing (\$ million)
		Total	144.00
			144.00
3. Strategic Agenda		Subcomponents	
Inclusive economic growth (IEG)	Pillar 1: Economic opportunities, including jobs, created and expanded		Climate Change Information
Environmentally sustainable growth (ESG)	Global and regional transboundary environmental concerns		Mitigation (\$ million) 144.00
Regional integration (RCI)	Pillar 1: Cross-border infrastructure		CO ₂ reduction (tons per annum) 500,000
			Climate Change impact on the Project Medium
4. Drivers of Change		Components	
Partnerships (PAR)	Bilateral institutions (not client government)		Gender Equity and Mainstreaming
	Commercial cofinancing		Some gender elements (SGE) ✓
	Private Sector		
Private sector development (PSD)	Promotion of private sector investment		
	Public sector goods and services essential for private sector development		
5. Poverty Targeting		Location Impact	
Project directly targets poverty	No	Regional	High
6. Nonsovereign Operation Risk Rating			
Obligor		[CONFIDENTIAL INFORMATION DELETED]	
Implied Project Rating		[CONFIDENTIAL INFORMATION DELETED]	
Final Project Rating		[CONFIDENTIAL INFORMATION DELETED]	
7. Safeguard Categorization		Environment: A Involuntary Resettlement: A Indigenous Peoples: A	
8. Financing			
Modality and Sources		Amount (\$ million)	
ADB		144.00	
Nonsovereign LIBOR Based Loan: Ordinary capital resources		144.00	
B-Loans		77.00	
Commercial Banks		77.00	
Official Cofinancing^a		0.00	
None		0.00	
Others^b		761.00	
Total		982.00	
9. Effective Development Cooperation			
Use of country procurement systems			No
Use of country public financial management systems			No

^a Includes loans funded by Clean Technology Fund and Canadian Climate Fund.

^b Derived by deducting ADB financing, B Loans and Official Cofinancing from Project Total Cost.

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on (i) a proposed direct loan of up to \$50 million; (ii) a proposed B loan of up to \$77 million funded from participating commercial banks; and (iii) a proposed direct loan of up to B3,040 million, all without government guarantee, to Nam Ngiep 1 Power Company Limited (NNP1PC) for the Nam Ngiep 1 Hydropower Project in the Lao People's Democratic Republic (Lao PDR).¹

II. THE PROJECT

A. Project Identification and Description

1. Project Identification

2. Hydropower resources in the Greater Mekong Subregion (GMS) are extensive, with an estimated potential capacity of 30,000 megawatts (MW).² However, they are unevenly distributed. Thailand, which has a large and growing power requirement, has limited hydropower potential and is dependent on natural gas which is depleting over time. The Lao PDR, on the other hand, has the largest hydropower potential in the region at 20,000 MW, but the smallest domestic demand. The GMS countries are thus promoting power trading to enable complementary access to cost-efficient energy resources. The Lao PDR plans to export up to 7,000 MW of hydropower to Thailand and up to 5,000 MW to Viet Nam.

3. The Lao PDR, classified by the United Nations as a least developed country, has a gross domestic product per capita of \$1,330 in 2013. The country aims to be out of the least developed country category by 2020. The energy sector is critical to achieving this goal as electric power is a vital source of export earnings.³ As of 2013, only 3,222 MW have been developed. The government's target is to install an additional 9,300 MW of capacity by 2022. To achieve this, it must mobilize capital and technical capacity through partnerships with the private sector.

4. The project is one such public-private partnership (PPP), to be implemented with investment risks and capital shared with the private sector. After attempts by some international partners to develop the project in the 1990s, the Japan International Cooperation Agency through Nippon Koei conducted a feasibility study during 1998-2002. The study confirmed the feasibility of the project on a build-operate-transfer basis and recommended a development plan based on optimal physical, economic, and safeguard considerations. The government and Nippon Koei executed an agreement in May 2003 for development of the project. Kansai Electric Power (Kansai) joined and executed the project development agreement with the government in April 2006. Subsequently, Nippon Koei sold its stake in the project and Electricity Generating Authority of Thailand (EGAT) joined as the third developer.

5. In January 2007, Kansai, EGAT, and the government (together, the sponsors) approached ADB for assistance with the project, based on the prominent role ADB played in

¹ The design and monitoring framework is in Appendix 1.

² The GMS countries are Cambodia, the People's Republic of China, the Lao PDR, Myanmar, Thailand, and Viet Nam.

³ Export of power generated around 21% of the Lao PDR's total export receipts in 2013.

earlier Lao PDR hydropower projects.⁴ The sponsors asked ADB to provide financing and guidance on the environment and social preparation to ensure that the project would be implemented sustainably and compliant with international best practices. After more than four years of project development involving tariff negotiation with EGAT, as off-taker, and a search for credible and competitive construction contractors, the sponsors executed the tariff agreement with EGAT on 12 July 2011 and the project was confirmed for start-up in 2019.

2. Project Design

6. The project involves construction and operation, on a build–operate–transfer basis, of a 290 MW hydroelectric power generation facility, on the Nam Ngiep River, in the provinces of Bolikhamxay and Xaysomboun. The dam site is 145 kilometers (km) northeast of Vientiane.⁵ It has three major components:

- (i) a main power station (272 MW) with a concrete gravity dam (height 148 meters) and a reservoir (surface area 67 square kilometers), with effective storage capacity of 1.2 billion cubic meters; electricity produced will be exported to Thailand;
- (ii) a reregulation power station (18 MW) with a concrete gravity dam (height 21 meters) and a reregulating reservoir (surface area 1.3 square kilometers), with effective storage capacity of 4.6 million cubic meters; electricity produced will be supplied within the Lao PDR;⁶ and
- (iii) a 125 km 230-kilovolt (kV) transmission line to connect the main power station to the Nabong substation near Vientiane.

7. The Nabong substation is already connected to the Udon-Thani substation in Thailand by a double-circuit transmission line. The Nam Ngum 2 (NN2) hydropower project installed the Lao PDR side of this transmission line and EGAT installed the line on the Thai side. It is currently energized at 230 kV and transmits NN2's power to Thailand. NN2 will upgrade the substation by the time of NNP1PC's interconnection, and the transmission line will then be energized at 500 kV. The government through Electricité du Laos (EDL) will purchase these facilities from NN2 for integration into the national grid. After the transfer, NNP1PC and NN2 will enter into an interconnection agreement with EDL and pay wheeling charges for use of the facilities. EDL will engage EGAT to operate and maintain the Nabong facilities.

3. The Borrower and Sponsors

8. The sponsors established NNP1PC as a special-purpose company to implement the project. The shareholders are Kansai through KPIC Netherlands B.V. (KPIC) with 45%, EGAT through EGAT International (EGATI) 30%, and the government through Lao Holding State Enterprise (LHSE) 25%.

9. Kansai is the second largest of the nine major power utilities in Japan. The company has 167 power plants with a total generating capacity of 34,958 MW (of which 151 hydropower plants provide 8,208 MW). Outside of Japan, Kansai owns 1,106 MW of generating capacity,

⁴ ADB. 1994. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Lao People's Democratic Republic for the Theun-Hinboun Hydropower Project*. Manila; and ADB. 2005. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Political Risk Guarantee for the Greater Mekong Subregion Nam Theun 2 Hydroelectric Project in the Lao People's Democratic Republic*. Manila.

⁵ The Nam Ngiep River is a tributary of the Mekong River.

⁶ The project will evacuate power for domestic supply through a 40 km 115 kV transmission line that will connect the reregulation power station to the existing 115 kV Pakxan substation. This transmission line will be installed by EDL and is not part of the project.

including the 345 MW San Roque hydropower plant in the Philippines, the 218 MW Rojana gas-fired power plant in Thailand, and the 3,300 MW Sonoko gas-fired power plant in Singapore. Kansai is coursing its investment into NNP1PC through its wholly owned investment vehicle KPIC. Kansai has a long-term debt rating of A3 from Moody's. KPIC is not rated.

10. EGAT is Thailand's largest electricity generator with installed capacity of 15,010 MW (including 3,436 MW of hydropower), representing 46% of the country's installed capacity.⁷ EGAT is investing in the project through its wholly owned subsidiary EGATi, established to expand EGAT's activities in neighboring countries. The project is EGAT's first direct international investment and is part of its strategy to invest about \$3 billion in Cambodia, the Lao PDR, and Myanmar through EGATi and other channels. EGAT was rated BBB+ by Standard & Poor's until June 2013, but is currently not rated by any agency. EGATi is not rated.

11. LHSE is the holding company established by the government to own and manage equity investments in power projects. Since Nam Theun 2 was commissioned in April 2010, LHSE has started receiving regular dividend revenue.

B. Development Impact, Outcome, and Outputs

1. Impact

12. **Increased regional cooperation.** The project will contribute to increased regional cooperation between the Lao PDR and Thailand through the trade of clean energy. The Lao PDR has limited opportunities for trade and economic growth but has a very large hydropower potential that can be harnessed to generate foreign exchange revenues. Thailand, on the other hand, has a strong and growing economy, but this growth is at risk due to the country's heavy reliance on its dwindling natural gas reserves.

13. **Increased electrification rate.** The project will provide 18 MW of capacity for domestic supply and help the Lao PDR reach its target of increasing the electrification rate from 82% to 92% by 2024. While electrification of 82% is not low among its GMS peers,⁸ provincial rates in the Lao PDR range as low 33%. The country's power demand per capita is also low at 402 kWh per year.⁹

14. **Promotion of environmentally and socially sustainable private sector investment.** The Lao PDR does not have the financial or technical resources to effectively monetize its hydropower potential and, hence, must partner with the private sector for financing and capacity building. Following the success of earlier private sector hydropower projects, the Lao PDR has in recent years attracted significant new investments in hydropower. However, affected people and civil society are increasingly raising concerns that projects are implemented without due consideration of environment and social impacts. By contrast, the project, under ADB's guidance, has been prepared to reflect the best international practice in controlling impacts, in particular impacts from involuntary resettlement. The success of the project will demonstrate that socially responsible investment is not incompatible with financially sound business and will

⁷ EGAT also buys electricity from other generators: 12,742 MW from Thai independent power producers, 2,445 MW from Thai small power producers, and 2,405 MW from neighboring countries (including 2,105 MW from the Lao PDR).

⁸ The electrification rates in neighboring countries (2011) are 34% in Cambodia, 48% in Myanmar, 70% in the Philippines, 96% in Viet Nam, and 99% in Thailand. <http://data.worldbank.org/indicator/EG.ELC.ACCS.ZS>

⁹ Annual per capita electricity consumption in neighboring countries (2011) is 164 kWh in Cambodia, 110 kWh in Myanmar, 647 kWh in the Philippines, 1,073 kWh in Viet Nam, and 2,316 kWh in Thailand. <http://www.gms-eoc.org/gms-statistics/overview/electricity-consumption-per-capita>

encourage more responsible private sector investment into infrastructure development in the country.

2. Outcome

15. The outcome will be increased private sector provision of reliable and clean power to Thailand and the Lao PDR. The outcome will be measured, among others, by the amount of electricity delivered; greenhouse gas emissions avoided in Thailand; and cash revenues received by the Government of the Lao PDR in dividends, royalties, and taxes from the project.

3. Outputs

16. The project's outputs will be (i) a 290 MW hydropower plant completed in an environmentally and socially sustainable manner, (ii) economic benefits to the Lao PDR, and (iii) development of local government capacity in environment and social protection.

C. Alignment with ADB Strategy and Operations

17. **Strategy 2020.** The midterm review of ADB's Strategy 2020 reaffirmed infrastructure development, regional cooperation and integration, and private sector development as three of the strategic priorities.¹⁰ As a PPP cross-border power plant to provide infrastructure essential for private sector development, the project is fully consistent with the midterm review of Strategy 2020.

18. **Regional strategy.** The regional cooperation strategy and program for the GMS has a vision of a prosperous, integrated, and harmonious subregion achieved through regional cooperation that promotes economic growth, environmental sustainability, private sector development, and capacity development.¹¹ The project will be a good example of mutually beneficial regional cooperation through EGAT's investment and through trading of power.

19. **Country strategy.** ADB's country partnership strategy, 2012–2016 for the Lao PDR focuses on promoting pro-poor sustainable growth including through regional power trading.¹² The project will generate revenues for the country and employment, and improve workers' skills through the transfer of technical and safeguard knowledge. The project will provide community infrastructure, which will have economic multiplier effects.

20. **Sector strategy.** ADB's Energy Policy emphasizes renewable energy, access to energy, and capacity building.¹³ The project is consistent with the policy as it will provide Thailand with an additional renewable energy source, increase the power supply to the Lao PDR, and provide best practice in the implementation of a hydropower plant.

21. **Lessons from previous operations.** A key finding from ADB's 2010 independent review of the Lao PDR energy sector assistance indicates the government lacks the capacity to manage environmental and social impacts.¹⁴ Further interventions for capacity building are

¹⁰ ADB. 2014. *Midterm Review of Strategy 2020: Meeting the Challenges of a Transforming Asia and Pacific*. Manila.

¹¹ ADB. 2004. *The Greater Mekong Subregion: Regional Cooperation Strategy and Program, 2004–2008*. Manila. The strategy was extended to 2008–2012 (approved by management of the Southeast Asia Department in April 2009). ADB's future strategy for the GMS will be subsumed in a new regional cooperation strategy for Southeast Asia.

¹² ADB. 2011. *Country Partnership Strategy: Lao People's Democratic Republic, 2012–2016*. Manila.

¹³ ADB. 2009. *Energy Policy*. Manila.

¹⁴ ADB. 2010. *Sector Assistance Program Evaluation: Energy Sector in the Lao People's Democratic Republic*. Manila.

recommended, including through continued assistance by ADB for hydropower, to ensure proper environmental and social safeguards are adopted. These should incorporate lessons from Nam Theun 2 such as (i) an improved stakeholder consultation and grievance mechanism, (ii) early implementation of livelihood restoration programs, and (iii) establishment of realistic targets that consider the assimilation capacity of affected people.

D. Implementation Arrangements

22. Table 2 summarizes the implementation arrangements.

Table 2: Summary of Implementation Arrangements

Aspects	Arrangements
Regulatory framework	NNP1PC awarded, on a negotiated basis, a concession covering up to 27 years after the commercial operations date
Management	Led by Kansai and EGATi, both with extensive experience in developing and operating large power plants
Implementation period	December 2013–January 2019
Construction arrangements	
Type of arrangement	Four contracts with detailed design and construction supervision provided by NNP1PC, with technical support from Kansai and EGATi
Contractor	Civil works: Obayashi Corporation Electrical and mechanical works: Hitachi Mitsubishi Hydro Corporation Hydraulic metal works: IHI Infrastructure Systems Transmission line: Loxley Public Company and Sri U-Thong
Operations arrangements	
Revenue structure	Power purchase agreements with EGAT and EDL: EGAT will purchase 100% of available energy on a take-or-pay basis for 27 years; EDL will purchase 85% of available energy on a take-or-pay basis for 18 years and on a take-and-pay basis thereafter for 9 years
Operation and maintenance	By NNP1PC, with technical support from Kansai and EGATi
Performance monitoring	NNP1PC will issue regular reports on finances, construction, operations, and environmental and social monitoring; performance indicators are shown in the design and monitoring framework (Appendix 1)

EDL = Electricité du Laos, EGATi = EGAT International, NNP1PC = Nam Ngiep 1 Power Company.
Source: Asian Development Bank.

III. THE PROPOSED ADB ASSISTANCE

A. The Assistance

23. ADB proposes to provide (i) a direct loan of up to \$50 million from ADB's ordinary capital resources; (ii) a B loan of up to \$77 million funded by participating international commercial banks; and (iii) a baht-denominated direct loan of up to B3,040 million (or its equivalent in dollars if baht are not available) from ADB's ordinary capital resources.

B. Value Added by ADB Assistance

24. The development of hydropower resources as an export commodity is a critical component of the government's strategy to achieve its poverty reduction goal. Substantial financing from the private sector is required to build these projects. However, the international banking community perceives inherent risks in financing such projects without the involvement

of development-focused international financial institutions such as ADB. Through ADB's participation, these banks find confidence to co-lend because the project will be financed in a structurally sound manner and will comply with high environment and social standards. The nature of the project (i.e., long construction period, high up-front capital expenditure, competitive tariffs, long asset life, and revenue contracts) requires long-tenor debt to match its cash flow profile. ADB will mobilize long-tenor debt from the commercial banks and will play a crucial role in ensuring the financial viability of the project.

IV. POLICY COMPLIANCE

A. Safeguards and Social Dimensions

25. In compliance with ADB's Safeguard Policy Statement, the project is categorized A for environment, involuntary resettlement, and indigenous people; and as highly complex and sensitive. The potential environmental and social impacts and risks of the project and its associated facilities were identified, and effective measures to avoid, minimize, mitigate, and compensate for the adverse impacts are incorporated in the safeguard plans.

26. Key environmental impacts are associated with the inundation of 68 square kilometers of terrestrial and riverine habitats. Specialist experts conducted biodiversity studies in the inundation zone and surrounding areas in 2007, 2013, and 2014.¹⁵ Residual impacts will include (i) permanent loss of 3,944 hectares of natural habitat and 3,549 hectares of modified habitat; (ii) alteration of aquatic habitat; and (iii) a limited loss of habitat for threatened species.¹⁶ Assessments indicate, however, that the project area is not a critical habitat for any species, and a comprehensive program of mitigation, management, and biodiversity offsets are planned. The biodiversity offset program aims to ensure no net loss of biodiversity consistent with the Safeguard Policy Statement and will include establishment of watershed management program and conservation area for the forested and riverine areas of the Nam Ngiep River; and species specific conservation measures in the Nam Ngiep watershed and other sites. Special attention will be given to an endangered fish species, the giant pike carp (*Lucioprynus striolatus*), including monitoring and protection of habitat and support for a species recovery program.

27. The environmental management plan also provides measures for advanced warning for downstream hydrological changes and management of riverbank erosion during operations. NNP1PC's institutional capacity and commitment to manage its environmental and social risks are deemed adequate. Information disclosure and consultations with affected people were conducted in accordance with ADB requirements. NNP1PC has allocated a sufficient budget for implementation of environmental and social plans. As this is a highly complex and sensitive project, an independent advisory panel is monitoring the project and NNP1PC will submit quarterly monitoring reports on the implementation of environmental management plan.

28. NNP1PC prepared a resettlement and ethnic development plan to address direct impacts on 432 households requiring relocation and an additional estimated 561 households losing only land for project facilities, including access roads and the 230 kV transmission line. The Hmong ethnic communities living in five villages, which are among those directly affected,

¹⁵ Surveys were supplemented by village interviews, desk reviews, and geospatial datasets.

¹⁶ Threatened species directly or indirectly recorded in the project area include plant species: (1 critically endangered, 7 endangered, and 5 vulnerable); mammal species (1 critically endangered, 7 endangered); bird species (1 critically endangered, 2 endangered); reptile species (2 endangered); amphibian species (none); and aquatic species (1 critically endangered, 5 endangered).

have provided broad community support for the project. Such support is documented in minutes of meetings and agreements authenticated by village leaders.

29. The project is categorized as having some gender elements with measures to benefit women incorporated in the project design in accordance with ADB's Policy on Gender and Development (1998).¹⁷ Effective measures to avoid, minimize, mitigate, and compensate for other adverse social impacts and ensure compliance with ADB's Social Protection Strategy, are incorporated in the social development plan.¹⁸ NNP1PC will report regularly on compliance with national labor laws and adherence to internationally recognized core labor standards. ADB will ensure that investment documentation includes appropriate provisions requiring NNP1PC to comply with national labor laws and, in addition, to take specific measures (including in relation to contractors) in relation to the internationally recognized core labor standard for the ADB-financed portion of the project, in compliance with ADB's Social Protection Strategy.

B. Anticorruption Policy

30. The sponsors and NNP1PC were advised of ADB's policy of implementing best international practice relating to combating corruption, money laundering, and the financing of terrorism. ADB will ensure that the investment documentation includes appropriate provisions prohibiting corruption, money laundering, and the financing of terrorism, and remedies for ADB in the event of noncompliance.

C. Assurances

31. Consistent with the Agreement Establishing the Asian Development Bank, the Government of the Lao PDR will be requested to confirm that it has no objection to the proposed assistance to NNP1PC. ADB will enter into suitable finance documentation, in form and substance satisfactory to ADB, following approval of the proposed assistance by the Board of Directors.

V. RECOMMENDATION

32. I am satisfied that the proposed loans would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve

- (i) the direct loan of up to \$50,000,000 from ADB's ordinary capital resources,
- (ii) the B loan of up to \$77,000,000 funded from participating international commercial banks; and
- (iii) the local currency direct loan of up to B3,040,000,000 (or its equivalent in US dollars if baht are not available) from ADB's ordinary capital resources;

to Nam Ngiep 1 Power Company Limited for the Nam Ngiep 1 Hydropower Project in the Lao People's Democratic Republic, with such terms and conditions as are substantially in accordance with those set forth in this report, and as may be reported to the Board.

Takehiko Nakao
President

22 July 2014

¹⁷ Measures include compensation payments, land and property titles in the names of husband and wife, maternal and nutrition health programs, and women's adult literacy and financial literacy programs.

¹⁸ ADB. 2003. *Social Protection*. Manila (adopted in 2001).

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and/or Indicators	Data Sources and/or Reporting Mechanisms	Assumptions and Risks
<p>Impacts</p> <p>Increased regional cooperation between the Lao PDR and Thailand</p> <p>Increased electrification rate in the Lao PDR</p> <p>Increased private sector investment in hydropower in the Lao PDR in an environmentally and socially sustainable manner</p>	<p>Export of power from the Lao PDR to Thailand increased from 2,105 MW in 2014 to 7,000 MW in 2024</p> <p>Household electrification rate increased from 82% in 2012 to 92% by 2024</p> <p>At least three new hydropower projects constructed in the Lao PDR during 2014–2024 fully meet the government’s environmental and social protection requirements</p>	<p>Statistics and information released by the Ministry of Energy and Mines of the Government of the Lao PDR</p>	<p>Assumptions</p> <p>The Government of the Lao PDR remains committed to fostering an environment conducive to private sector investment.</p> <p>The government has strengthened the national regulations on social safeguards and issued a new decree obliging project developers to prepare, disclose, and consult on the full extent of project impacts on affected communities and obtain government approval of environmental impact assessments for major projects.</p>
<p>Outcome</p> <p>Increased private sector provision of reliable and clean power in Thailand and the Lao PDR</p>	<p>Delivery of about 1,400 GWh of electricity annually to Thailand and 100 GWh annually to the Lao PDR beginning in 2020</p> <p>Greenhouse gas emissions of about 500,000 ton of carbon dioxide annually avoided in Thailand from 2020</p> <p>A total of about \$600 million in royalty, tax, and dividend revenues received by the Government of the Lao PDR during the 27-year concession period^a</p> <p>About 80 Lao workers employed during operations</p>	<p>NNP1PC operating and financial reports</p> <p>Statistics and information released by the Ministry of Energy of the Government of Thailand and the Ministry of Energy and Mines of the Government of the Lao PDR</p>	<p>Assumptions</p> <p>The plant is operated according to specifications.</p> <p>Nabong substation is completed on time.</p> <p>Electricity Generating Authority of Thailand honors its obligations under the power purchase agreement.</p> <p>Twenty local government staff implement environment and social policies.</p> <p>Risk</p> <p>Hydrologic performance is significantly below long-run average levels for a sustained period.</p>
<p>Outputs</p> <p>Completion of a 290-MW hydropower plant in an environmentally and socially sustainable manner.</p>	<p>290 MW of hydropower capacity commissioned in July 2018</p> <p>Appropriate environment and social mitigation measures implemented</p>	<p>NNP1PC construction progress reports, financial reports, and environment and social monitoring reports</p>	<p>Assumptions</p> <p>Debt is successfully raised.</p> <p>Environment and social management plans are implemented properly.</p> <p>Risk</p> <p>Construction encounters</p>

Design Summary	Performance Targets and/or Indicators	Data Sources and/or Reporting Mechanisms	Assumptions and Risks
<p>Economic benefits to the Lao PDR</p> <p>Capacity development of local government in environment and social protection.</p>	<p>Locally purchased goods and services amount to about \$150 million during 2014–2018</p> <p>At least 500 Lao PDR workers employed for construction during 2014–2018</p> <p>Issuance of 100% of replacement land titles in joint spousal names for displaced households headed by husband and wife</p> <p>Minimum of 12 scholarships per annum for secondary and tertiary education and vocational training provided to female students from inundated areas and host communities from 2015</p> <p>At least 20 local government staff trained to implement environment and social policies during 2014–2018</p>		<p>unforeseen delays and/or cost overruns.</p>
<p>Activities with Milestones</p> <ol style="list-style-type: none"> 1. Commence preliminary works: December 2013 2. Commence full construction: September 2014 3. Financial closing: August 2014 4. Commission the plant: October 2018 5. Commence commercial operations: January 2019 			<p>Inputs</p> <p>ADB direct loans: \$144 million equivalent</p> <p>ADB B loan: \$77 million</p> <p>JBIC loan: \$197 million</p> <p>Thai bank loans: \$228 million equivalent</p> <p>Equity: \$336 million</p> <p>Total investment: \$982 million</p>

ADB = Asian Development Bank; GWh = gigawatt hour; Lao PDR = Lao People's Democratic Republic; JBIC = Japan Bank for International Cooperation; MW = megawatt; NNP1PC = Nam Ngiep 1 Power Company.

^a Indicators for government revenues and employment measure benefits to local economy.

Source: Asian Development Bank.

SUMMARY POVERTY REDUCTION AND SOCIAL STRATEGY

Country:	Lao People's Democratic Republic	Project Title:	Nam Ngiep 1 Hydropower Project
Lending/Financing Modality:	Project	Department:	Private Sector Operations Department
		Division:	Infrastructure Finance Division 2

I. POVERTY AND SOCIAL ANALYSIS AND STRATEGY
Poverty targeting: General intervention
A. Links to the National Poverty Reduction and Inclusive Growth Strategy and Country Partnership Strategy
The project is located in three districts classified as among the poorest in the Lao People's Democratic Republic (Lao PDR) and as the focus of poverty reduction efforts under the National Seventh Five-Year National Socio-Economic Development Plan, 2011–2015. The project is aligned with the plan's designation of energy and mining as a strategic sector. Development in the power subsector is focused on using, developing, and expanding hydropower sources for environment-friendly energy; and expansion of lines to meet the twin objectives of supplying electricity domestically for the country's development and export. ^a The development of the energy sector will generate income for the government to spend on socioeconomic development. The country partnership strategy of the Asian Development Bank (ADB) for the Lao PDR focuses on promoting pro-poor sustainable growth, including through power trading and rural electrification.
B. Results from the Poverty and Social Analysis during PPTA or Due Diligence
<p>1. Key poverty and social issues. The Lao PDR's recent economic growth reduced poverty incidence from 46% in 1992 to 27% in 2008. However, poverty remains high and is predominantly rural. In the districts where the project will be implemented, the percentage of households classified as poor ranges from Thatom with 55%, Hom with 57%, and Bolikhan with 76%. This is due to accessibility difficulties and higher proportion of ethnic groups. Poverty incidence among ethnic minorities is higher (40%–55%) than among the majority Lao-Tai population (29%). The project will generate about \$600 million of government revenues, which may be used for socioeconomic programs. Thus poor communities elsewhere will indirectly benefit from poverty reduction; expenditures in health, education, rural roads, and environment; and rural electrification.</p> <p>2. Beneficiaries. The project will contribute to economic growth, poverty reduction, job creation, and improvement of electricity supply in the project impact zones. Construction will directly employ about 1,800, with many more jobs expected from support services and provision of food and agricultural products to construction workers.</p> <p>3. Impact channels. The project has undertaken a comprehensive social analysis, and prepared a resettlement and ethnic development plan (REDP) and a social development plan (SDP) comprising (i) a public health action plan (PHAP), (ii) a labor management plan (LMP), and (iii) a community development plan (CDP). Benefits of the project will be directly delivered to the affected people through these plans. In addition, the project will generate employment opportunities and prioritize local labor. At the macro level, the project will contribute about \$600 million income to the government, which will be useful in implementing national socioeconomic programs that are expected to benefit the whole population.</p> <p>4. Other social and poverty issues. Programs jointly implemented by government line agencies and civil society organizations (CSOs) and funded by international development partners will address concerns on public health, education, human resource development, wildlife conservation, deforestation, and human trafficking.</p> <p>5. Design features. Measures in the REDP are designed to double the incomes of affected people in real terms and bring all directly affected poor and vulnerable households above the poverty line within 10 years of plant startup. The PHAP will implement programs on community health in the resettlement area, general community health improvement in the project impact zones, capacity building for village health volunteers and district health office staff, water supply and sanitation program, and a special social management and mitigation plan for camp followers. Construction-related public health impacts are addressed through contractors' obligations regarding minimizing dust, noise and air pollutants, and traffic safety. The LMP comprises measures to ensure adherence to national labor laws and core labor standards, policy on contractors and other providers of goods and services, policy for local labor recruitment, skills training for local residents, community management and infrastructure development, human trafficking impacts and management, conflict resolution, and strategy and measures for employees and workers' health. The CDP focuses on aspects that could help improve the community as a whole, and lift up the quality of life, living standards, and income of affected people, complementing other programs described here and in the REDP. It comprises the gender action plan, programs for youth and children, and a cultural awareness and heritage preservation program.</p>

II. PARTICIPATION AND EMPOWERING THE POOR	
<p>1. Participatory approaches. During a feasibility study by the Japan International Cooperation Agency, three national consultations were conducted during 1998–1999 and six local consultations in 1999. Since 2008, the project conducted at least 50 consultations, including joint site visits with villagers in the impact zones and local governments. The perspectives of local residents and governments have been considered, resulting in changes to the project design including the location of the resettlement site, alterations to livelihood programs, and reduction of the maximum reservoir level. In May 2014, the project conducted consultations with CSOs, international agencies, provincial and district government agencies, and affected people. Continued consultations will be undertaken by the project. A grievance mechanism is in place to address feedback and concerns throughout construction and operation.</p> <p>2. Civil society's role. CSOs and international agencies were consulted on the safeguards mitigation plans.</p> <p>3. Explain how the project ensures adequate participation of CSOs in project implementation? The project will work with CSOs to implement the SDP and has identified CSOs dealing with health, HIV/AIDS, people with disabilities, education, environment, programs for youth and children, cultural awareness, and heritage preservation. CSOs identified include Handicap International, Action with Lao Children, Action for Women in Distressing Circumstances, Pestalozzi Children's Foundation, World Wildlife Fund, Save the Children Norway, and World Education/Consortium in the Lao PDR.</p> <p>4. Civil society organization participation envisaged during the project: M <input checked="" type="checkbox"/> Information gathering and sharing M <input checked="" type="checkbox"/> Consultation <input checked="" type="checkbox"/> Collaboration <input type="checkbox"/> Partnership</p> <p>5. Participation plan. <input checked="" type="checkbox"/> Yes. A public consultation and participation program is included in the REDP. Poor and vulnerable households have been identified, and special measures will be implemented to mitigate impacts and enhance their well-being. Key features include an adult literacy program, housing adaptation for disabled, and year-round food security. Social development and community consultation teams have been formed by the project to implement these measures.</p>	
III. GENDER AND DEVELOPMENT	
Gender mainstreaming category: Some gender elements	
<p>A. Key issues. Women head about 8% of households in affected villages. Key issues include (i) high illiteracy of ethnic minority women; (ii) women's and girls' poor health, particularly due to heavy physical workloads, frequent pregnancies, poor hygiene and sanitation, and limited health facilities; (iii) livelihoods, and different roles of men and women in the domestic economy of affected households; and (iv) low status given to girls, raising the risk of girls being sold as domestic or sex workers by parents. Five villages and a hamlet affected by the reservoir are inhabited by Hmong ethnic minority. Hmong culture is patrilineal and patriarchal and does not permit women to inherit or co-own land and property. Moreover, during construction, an influx of migrant workers may pose potential risks of HIV/STDs and trafficking of children and women.</p>	
<p>B. Key actions. As women from ethnic groups and vulnerable households are more disadvantaged and overburdened than others, a gender action plan was prepared as part of the SDP. It provides for separate consultations with women, compensation payments, land and property title in names of husband and wife, second wives entitled to separate titles in their names, maternal and nutrition health programs, women's adult literacy program, and livelihood and skills training programs. Examples of specific targets include 40% of scholarships reserved for girls; 100% of land titles to be issued in joint spousal names; for households with a husband and more than one wife, 100% land titles for properties of second and third wives to be issued in wife's name and the name of another family member, to be chosen by the wife; 100% of bank books to be opened in the names of both husband and wife; and at least one woman in every affected household to be involved in livelihood training activities.</p> <p><input checked="" type="checkbox"/> Gender action plan <input type="checkbox"/> Other actions or measures <input type="checkbox"/> No action or measure</p>	
IV. ADDRESSING SOCIAL SAFEGUARD ISSUES	
A. Involuntary Resettlement	Safeguard Category: <input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> FI
<p>1. Key impacts. The project will relocate 432 households from six villages and one hamlet, which will all be inundated. In addition, another 561 households from 31 villages will have other direct impacts, i.e. 163 households from three villages in the upper reservoir area will lose a considerable part of their low-lying agricultural land; 117 households from 2 villages will share resources with the resettled community; and another 281 households from 26 villages will lose a small portion of their arable lands or temporary access to lands due to the construction of the 230 kilovolt transmission line and access roads.</p> <p>2. Strategy to address the impacts. The project will provide replacement land and housing or cash compensation for all affected people. Livelihood restoration support will be implemented. The project's social management office includes ethnic Hmong staff responsible for resettlement infrastructure development, social preparation, public health, labor management, compensation, livelihood restoration, and monitoring and documentation. The project has established a grievance redress mechanism, which allows affected people to raise concerns and grievances in a transparent manner. If the project's mediation and reaction do not lead to a successful conclusion, affected people</p>	

can file a grievance with the village, district, and/or provincial grievance redress committees.

3. Plan or other actions. Combined resettlement and indigenous peoples plan

B. Indigenous Peoples **Safeguard Category:** A B C FI

1. Key impacts. Affected households are mainly from Hmong and Lao ethnic groups. Five Hmong villages will be required to relocate.

Is broad community support (BCS) triggered? Yes. BCS has been obtained from the ethnic Hmong communities in zone 2 lower reservoir and zone 3 construction area. Meaningful consultations have been conducted in these communities since 2008, including exploring options to avoid or minimize involuntary resettlement impacts; evaluating various resettlement sites; and discussing compensation and potential livelihood restoration measures, resettlement site lay-out, and house designs. In 2013 and 2014, the project conducted good faith negotiations with the Hmong communities, which have resulted in (i) larger land allocation in Houay Soup; (ii) culturally sensitive village lay-out and house design, relocation timeline for graveyards, and development benefits such as scholarships and community development fund; and (iii) the option of self-relocation with cash compensation plus livelihood support before and after resettlement for those relocating within the project influence zones. The project has implemented a pilot soil improvement program at Houay Soup in cooperation with zone 3 affected people, to encourage more people to move to Houay Soup where the project believes there is higher probability for sustainable livelihoods, higher standards of living, better community infrastructure, and, therefore, better outcomes for the affected people.

2. Strategy to address the impacts. Project activities and benefits have been structured in a culturally appropriate way, and good faith negotiations undertaken to address differing views of households in various villages. Male and female Hmong staff have been employed to ensure comprehensive consultation. The REDP addresses the concerns of all affected people, a significant number of which are Hmong. The SDP is intended to mitigate impacts and promote social development in the project area. These plans were designed in consultation with the ethnic Hmong communities to encourage their participation, commitment, and ownership to ensure their sustainable implementation.

3. Plan or other actions. Combined resettlement plan and indigenous peoples plan

V. ADDRESSING OTHER SOCIAL RISKS

A. Risks in the Labor Market

1. Relevance of the project for the country's or region's or sector's labor market.
L unemployment L underemployment NA retrenchment M core labor standards

2. Labor market impact. During construction, about 1,800 workers will be engaged. An influx of foreign and local migrant workers is expected. The LMP includes a code of conduct mandatory for project and contractor staff, compliance with the national labor law, and measures to comply with internationally recognized core labor standards.

B. Affordability The project will provide power to the grid and does not involve direct selling to the people.

C. Communicable Diseases and Other Social Risks

1. M Communicable diseases L Human trafficking Others (please specify) _____

2. Risks to people in project area. The PHAP was prepared to anticipate, avoid, and mitigate any social and health impacts due to relocation of households, impacts on host communities, and influx of migrant workers and camp followers.

VI. MONITORING AND EVALUATION

1. Targets and indicators. The following indicators are included: standards of living of 100% of poor and vulnerable households affected by involuntary resettlement are brought to at least national minimum standards 10 years after the plant's start-up, issuance of 100% of replacement land titles in joint spousal names, 40% of postsecondary scholarships reserved for ethnic Hmong girls, at least 500 Lao workers employed during construction, and about 80 Lao workers employed during operation.

2. Required human resources. The project's social management office has about 35 staff to implement and monitor the REDP and SDP.

3. Information in the project administration manual. Not applicable.

4. Monitoring tools. ADB will conduct periodic site visits and review monitoring reports. An external expert will monitor implementation of the REDP and SDP. The project is considered to be highly complex and sensitive, hence, an independent advisory panel has been appointed to monitor management of the environmental and social safeguards and other social dimensions of the project during design and implementation.

^a Government of the Lao People's Democratic Republic. 2011. *Seventh Five-Year National Socio-Economic Development Plan*. Vientiane.