

# NS-237 - NAMA for Rural Development in Lao PDR

## Lao People's Democratic Republic

### NAMA Seeking Support for Implementation

#### A Overview

##### A.1 Party

Lao People's Democratic Republic

##### A.2 Title of Mitigation Action

NAMA for Rural Development in Lao PDR

##### A.3 Description of mitigation action

Access to modern energy services is a prerequisite for sustainable development. Even though the electrification rate in Lao PDR was 72.5 per cent of households in 2010, one third of the population still remain without proper access to electricity. According to updated the Rural Electrification Master Plan (REMP), 2010 the Government has set the national electrification target at a household level to 94 percent by 2020.

The NAMA represents an opportunity for sustainable and low carbon development for Lao PDR. The government can build on the existing policy framework, which targets the implementation of various policies, plans and actions aimed at mitigating GHG emissions while achieving sustainable development, so as to define a comprehensive and coherent NAMA development framework for Lao PDR.

The NAMA differs from traditional funding mechanisms which promote rural electrification and renewable energy projects. Interventions under the NAMA framework are prioritized in line with the socio-economic development objectives of the host country. The NAMA is designed with sustainable development benefits in mind and the design includes a focus on interventions which allow for income- generating activities which can create business opportunities for individuals, households and communities. The NAMA will spur the development of an environment which facilitates transformative change in the energy sector through an attractive regulatory and policy environment that incentivizes the private sector.

The overall target of the NAMA is to support Lao PDR in achieving the goal defined in the Rural Electrification Master Plan, namely to provide access to electricity to 90 per cent of households in Lao PDR by 2020. The NAMA will reduce GHG emissions through the replacement of fossil fuels with renewable energies. The NAMA will also contribute to Sustainable Development (SD) benefits, such as improvement of the situation of groups with specific vulnerabilities, women and the poor.

The NAMA covers one type of technical intervention the establishment of mini grids. Rural communities/tourism, agricultural facilities/health centers/schools and literacy centers

are the focus of these mini grids due to their demand for electricity for lighting, cooling and appliances. The mini grids will predominantly use renewable energy sources (hydro, solar) and will provide electricity for lighting, radio and phone charging for households, and for service and production activities.

In this first phase the NAMA aims to establish 8 mini grids. This will provide electricity to around 1,000 households and around 6000 people. Over the 15-year lifetime of the NAMA, emission reductions will reach around 13,000-14,000 tons of CO<sub>2</sub>.

Capacity-building will be a key component in the implementation of the NAMA. Special emphasis will be given to identifying and supporting the development of income-generating activities in the Rural Productivity Zones (RPZs), as this is the key to positive rural development. Another important component will be technical support during the identification and implementation of the different mini grids, as the aim is to implement technically sound projects with low operating costs.

The baseline scenario for this NAMA consists of two components, a GHG baseline and a sustainable development (SD) baseline. Setting the baseline scenario in this way allows all effects to be properly assessed and quantified through the monitoring activities described in the Measurement, Reporting and Verification (MRV) system. In the MRV, the UN Framework Convention on Climate Change's (UNFCCC) Small-scale Methodology AMS-III.BL: Integrated methodology for electrification of communities Version 01.0 will be used to monitor GHG emission reductions.

The total cost of the NAMA is estimated at around US\$3.4 million. This includes support to cover the investment costs of the technical intervention as well as extensive capacity-building efforts. In total, the government of Lao is committed to providing around 14 per cent of the required funding. The remaining 86 per cent is expected to come from NAMA donors.

Implementation of the NAMA will be led by the Ministry of Energy and Mines as the NAMA Coordinating Authority (NCA). The Ministry of Natural Resources and Environment will be appointed as NAMA Approver/Focal Point to the UNFCCC. The role of NAMA Implementing Entity (NIE) will be taken by the Rural Electrification Fund.

The NAMA will receive capacity development support over a period of three years. Initial efforts will focus on securing national and international funding as well as establishing the institutional structure. The first eight projects will be prepared and implemented in the years 2016 and 2017. Upon availability of additional funding, further mini grids can be implemented. After the implementation of the projects, the NAMA will operate over a period of 15 years.

A.4 Sector	<input checked="" type="checkbox"/> Energy supply <input type="checkbox"/> Residential and Commercial buildings <input type="checkbox"/> Agriculture <input type="checkbox"/> Waste management <input type="checkbox"/> Transport and its Infrastructure <input type="checkbox"/> Industry <input type="checkbox"/> Forestry
	<input type="checkbox"/> Other <input type="text"/>
A.5 Technology	<input type="checkbox"/> Bioenergy <input type="checkbox"/> Energy Efficiency <input checked="" type="checkbox"/> Hydropower <input checked="" type="checkbox"/> Wind energy <input type="checkbox"/> Carbon Capture and Storage <input type="checkbox"/> Land fill gas collection <input type="checkbox"/> Cleaner Fuels <input type="checkbox"/> Geothermal energy <input checked="" type="checkbox"/> Solar energy <input type="checkbox"/> Ocean energy <input type="checkbox"/> Low till / No till
	<input type="checkbox"/> Other <input type="text"/>
A.6 Type of action	<input checked="" type="checkbox"/> National/ Sectoral goal <input type="checkbox"/> Strategy <input type="checkbox"/> National/Sectoral policy or program <input type="checkbox"/> Project: Investment in machinery <input type="checkbox"/> Project: Investment in infrastructure <input type="checkbox"/> Project: Other
	<input type="checkbox"/> Other <input type="text"/>
A.7 Greenhouse gases covered by the action	<input checked="" type="checkbox"/> CO2 <input type="checkbox"/> N2O <input type="checkbox"/> PFCs <input type="checkbox"/> CH4 <input type="checkbox"/> HFCs <input type="checkbox"/> SF6
	<input type="checkbox"/> Other <input type="text"/>

### B National Implementing Entity

B.1.0 Name	Institute of Renewable Energy Promotion
B.1.1 Contact Person 1	Mr. Thongkhanh PHIMVILAY
B.1.2 Address	Nong Bone Road Ban Fai Saysettha District Vientiane Capital, Lao PDR, P.O.Box 4708, 5th Floor 2nd Energy Building
B.1.3 Phone	+ (856-21) 413-012 ; + (856-21) 453-182
B.1.4 Email	pthongk@yahoo.com
B.1.5 Contact Person 2	Seumkham THOUMMAVONGSA, Ph.D
B.1.6 Address	
B.1.7 Phone	
B.1.8 Email	seumkham@gmail.com
B.1.9 Contact Person 3	
B.1.10 Address	
B.1.11 Phone	
B.1.12 Email	
B.1.13 Comments	

### C Expected timeframe for the implementation of the mitigation action

C.1	Number of years for completion	5
C.2	Expected start year of implementation	2016

### D Currency

D.1	Used Currency	<input type="text" value="AED"/>
		Conversion to USD: 1

E Cost

E.1.1 Estimated full cost of implementation	2922538
E.1.2 Comments on full cost of implementation	The full cost of implementation include investment in Electricity Systems, in Literacy Centres, in-vestment in the Stabilization Fund and Capacity Development.
E.2.1 Estimated incremental cost of implementation	
E.2.2 Comments on estimated incremental cost of implementation	

F Support required for the implementation the mitigation action

F.1.1 Amount of Financial support	2495850
F.1.2 Type of required Financial support	<input checked="" type="checkbox"/> Grant <input type="checkbox"/> Guarantee <input type="checkbox"/> Loan (sovereign) <input type="checkbox"/> Equity <input type="checkbox"/> Loan (Private) <input type="checkbox"/> Carbon finance <input type="checkbox"/> Concessional loan <input type="checkbox"/> Other <input type="text"/>
F.1.3 Comments on Financial support	It is expected that international support will be provided for the implementation of the NAMA. The international contribution is expected to be US\$ 2,495,850.
F.2.1 Amount of Technological support	
F.2.2 Comments on Technological support	
F.3.1 Amount of capacity building support	1400660
F.3.2 Type of required capacity building support	<input checked="" type="checkbox"/> Individual level <input checked="" type="checkbox"/> Institutional level <input type="checkbox"/> Systemic level <input type="checkbox"/> Other <input type="text"/>
F.3.3 Comments on Capacity Building support	<p>In order for the NAMA to be successfully implemented and to be extended after the implementation of the first eight mini grids, the capacity development needs must be met through the provision of capacity-building activities and additional personnel must be hired for the management of the NAMA. Most of the capacity-building activities will be provided in the first three years of NAMA set-up, which are seen as the critical phase.</p> <p>The following additional positions will be created for management of the NAMA:</p> <ul style="list-style-type: none"> <li>• a NAMA team leader to oversee the implementation of the NAMA programme;</li> <li>• a mini grid expert, responsible for the implementation of the intervention;</li> <li>• a technical expert to support the implementation of the intervention in technical matters.</li> </ul> <p>All these positions will be assigned to the NIE. To create and increase the capacity of the staff to be hired, international experts will be involved in the first phase of the NAMA. The positions that will need to be filled by international experts are</p>

those of NAMA expert and rural electrification expert.  
Their task will be to increase the capacity of the NAMA implementation team.

F.4 Financial support for implementation required

F.5 Technological support for implementation required

F.6 Capacity Building support for implementation required

#### G Estimated emission reductions

G.1 Amount

G.2 Unit

MtCO<sub>2</sub>e

G.3 Additional information (e.g. if available, information on the methodological approach followed)

The determination of emission reductions is based on the UNFCCC's "Small-scale Methodology AMS-III.BL: Integrated methodology for electrification of communities" (UNFCCC, 2015). The AMS-III.BL methodology is simplified for the MRV NAMA mini grid intervention as follows.

- Transmission and distribution losses are neglected. The mini grids are characterized by short distances between the source of electricity generation and the consumers of the electricity. Thus the grid losses are minor and will be neglected.
- Consumers are classified into two types. There are only consumers who were not connected to the national/regional grid or a mini-grid before the NAMA intervention. Thus only types 1 and 2 consumer exist.
- Measuring consumption by Type 2 consumers The electricity consumption of Type 2 consumers (i.e. 500-1,000 kWh per year) can be measured using electricity meters or can be estimated (e.g. by multiplying installed capacity with average periodic hours of usage).

#### H Other indicators

H.1 Other indicators of implementation

The coordination and management of the NAMA requires an institutional structure, which shall meet the following requirements.

- It must be embedded in national and sectoral policies and strategies.
- It must be capable of effective communication and reporting as required by international agencies, such as the UNFCCC.
- It must provide an interface to international bilateral and multilateral NAMA funding entities, such as the Green Climate Fund.
- It must be able to ensure proper management of financial flows between the NAMA funding entities and the recipients.
- It must be able to ensure the achievement of NAMA targets in terms of electrification, GHG mitigation and sustainable co-benefits.
- It must be able to allow transparent monitoring of GHG emission reductions and the Sustainable Development indicators.

The recommended institutional structure of the NAMA is based on the following principles.

- Ensuring the strong involvement of national stakeholders to create country ownership and political commitment.
- Using existing and experienced entities organizational systems which are already in place and allow for prompt and smooth implementation of the NAMA.
- Ensuring that the institutional structure is appropriate for the receipt of international private and/or public donor funding.
- The institutional structure for the NAMA shall include the following institutional bodies at the country level:
  - (i) NAMA National Focal Point or National NAMA Approver (NA);
  - (ii) NAMA Coordinating Authority (NCA);
  - (iii) NAMA Implementing Entity (NIE);
  - (iv) NAMA Executing Entities (NEEs).

#### I Other relevant information

##### I.1 Other relevant information including co-benefits for local sustainable development

In addition to GHG emissions, the MRV system for this NAMA will monitor the impact of the NAMA interventions on selected Sustainable Development (SD) indicators.

The selection of the SD indicators was done using the Sustainable Development Evaluation Tool (SD Tool) developed by UNDP (UNDP, 2014d). The SD Tool divides the SD indicators into five different domains: environment; social; growth and development; economic; and institutional.

The tool requires for each of the Interventions to decide whether an indicator (such as access to clean and sustainable energy, empowerment of women or improvement of livelihood of poor, etc.) is selected, identify the impact, add an explanation on the chosen indicator, define the effect (positive, negative, both) and indicate whether monitoring is done.

#### J Relevant National Policies strategies, plans and programmes and/or other mitigation action

##### J.1 Relevant National Policies

- Electricity Law (1997 and amended 2013)
- Power Sector Policy Statement (2001)
- National Growth and Poverty Eradication Strategy (2004)
- The Prime Minister's Decree of Local and Rural Electrification Development Fund (2005)
- Renewable Energy Development Strategy (2011)
- Decree of MEM for Establishment of Institute for Renewable Energy Promotion (2012)
- National Environmental and Social Sustainability of Hydropower Sector in Lao PDR (2006)

##### J.2 Link to other NAMAs

#### K Attachments

##### K Attachments

Title	Description
ER_tool_LAODR_19112015.xlsx	ER and MRV sheet
NAMA Final Lao PDR2-1.pdf	Fully-fledged NAMA Design Document

NAMA\_SD\_Tool\_Updated\_Lao Sustainable development tool  
PDR.xlsx

K.1 Attachment description

K.2 File

Browse...

L Support received

L.1 Outside the Registry

L.2 Within the Registry

**Support provided SupportType Amount Comment Date**