



NAMA FOR THE RENEWABLE
ENERGY SECTOR OF
LAO PDR



*Empowered lives.
Resilient nations.*

UNDP partners with people at all levels of society to help build nations that can withstand crisis, and drive and sustain the kind of growth that improves the quality of life for everyone. On the ground in 177 countries and territories, we offer global perspectives and local insight to help empower lives and build resilient nations.. www.undp.org

UNDP MDG Carbon is an innovative programme that assists developing countries in implementing a host of low-carbon interventions, spanning multiple technologies, active in all regions of the world, and leveraging significant amounts in private-sector millions of dollars in independent co-investments.

Technical Oversight and Guidance

Alexandra Soezer, Project Manager, UNDP MDG Carbon

Lead Author

Clemens Ploechl, Energy Changes

Contributors

Deepak Bawari, Emergent Ventures India, Courtney Blodgett, Individual Consultant, and Wolfgang Wetzer, Energy Changes

Reviewers

Ministry of Natural Resource and Environment, Ministry of Energy and Mines, Ministry of Agriculture and Forestry, Ministry of Finance, UNDP, Ministry of Public Works and Transport, Ministry of Planning and Investment, Ministry of Industry and Commerce, and Ministry of Science and Technology.

Acknowledgements

Special thanks to Mr. Seumkham Thoummavongsa, Deputy Director General, Institute of Renewable Energy Promotion, Ministry of Energy and Mines for his patronage.

Contact Information

Seumkham THOUMMAVONGSA (Ph.D.)
Deputy Director General
Institute of Renewable Energy Promotion
Ministry of Energy and Mines Lao PDR
Tel. /Fax. (856-21) 453-182

Alexandra Soezer, Ph.D.
Project Manager
UNDP MDG Carbon
alexandra.soezer@undp.org

Editor

Georgina Wilde

Design

Kimberly Koserowski

Photo Credits

Institute of Renewable Energy Promotion

Disclaimer: "The views expressed in this publication do not necessarily reflect the views of the United Nations Development Programme or its Executive Board."

FOREWORD

Energy is one of the most important inputs for economic growth and human development in Lao PDR. Energy access as a means for productive use is of key importance for rural communities to earn a decent living.

This document presents a NAMA on Rural Development through Electrification with Renewable Energies. It is designed to support Lao PDR in achieving its strategies relevant to rural development and rural electrification as outlined in the Rural Electrification Master Plan. The overall target of the NAMA is to provide access to electricity to 90 per cent of households by 2020.

During recent years, NAMAs have become a focus of climate change mitigation negotiations in the UNFCCC process. The NAMA modality can provide the essential holistic framework to overhaul a complete sector when framed within the context of sustainable development and beyond pure mitigation aspects. The focus on the sustainability of the entire sector is essential for achieving lasting results.

Moreover, the understanding of the NAMA concept is still evolving, and there is relatively little on-the-ground experience with respect to turning the concept into concrete actions. In this regard, UNDP in Lao PDR and the UNDP MDG-Carbon Programme have supported the development of this NAMA in order to help Lao PDR to achieve a transformative change and bring about rural development and enhancement of the private sector as long-term goal.

The outcomes of this NAMA with regards to Sustainable Development, GHG Emission Reductions and inclusive Green Growth are strongly interrelated building blocks as a pathway of a change framework that shall ensure that the NAMA is fully embedded in national development goals.

The NAMA design will provide the country with an accurate and credible information framework by applying a robust MRV system for sustainable development impacts and GHG emission reductions. The calculation of GHG emission reductions are based on an approved CDM methodology while the MDG Carbon NAMA Sustainable Development Evaluation Tool will allow to quantify and monitor the sustainable development impacts.

This NAMA on Rural Development through Rural Electrification with Renewable Energies in Lao PDR is designed as an encouraging holistic framework that will help Lao PDR to move towards a low-carbon pathway while advancing long-term sustainable development benefits and strengthening the private sector.

**Resident Representative
United Nations Development Programme**

Kaarina Immonen

**Deputy Director General
Institute of Renewable Energy Promotion**

Seumkham Thoummavongsa, PhD.

Table of Contents

List of Tables	6
List of Figures	7
Executive Summary	8
Abbreviations	10
1. Introduction	13
1.1 Rural Electrification and Development	13
1.2 Nationally Appropriate Mitigation Actions	15
1.2.1 NAMA as an Opportunity for Lao PDR	15
2. Background to Lao PDR	17
2.1 Geography and Administration	17
2.2 Economy	17
2.3 Demography	17
2.4 The Socio-Economic Situation	18
2.5 National Development Strategies	20
2.5.1 The Seventh Five-year National Socio-Economic Development Plan, 2011-2015	20
2.5.2 The Millennium Development Goals	22
3. Background to Rural Electrification in Lao PDR	29
3.1 Primary Energy Demand and Supply	29
3.2 Electricity Demand and Supply	30
3.3 Renewable Energy Potential and Status	32
3.3.1 Wind	33
3.3.2 Solar	34
3.3.3 Small Hydropower	35
3.4 Electricity Tariffs	36
3.5 Electrification	36
3.5.1 Experience with Rural Electrification using Mini grid Approaches	37
3.6 Financing and Support Instruments for Rural Electrification	39

4. The Policy Environment	41
4.1 The Institutional Framework for Rural Electrification	41
4.1.1 The Ministry of Energy and Mines	41
4.1.2 Other Public Sector Entities	43
4.1.3 Private Sector Entities	44
4.2 The Strategic and Regulatory Framework for Rural Electrification	44
4.3 Lao PDR Intended Nationally Determined Contributions	46
4.4 Policy Gap Analysis in the Context of Rural Electrification	47
4.4.1 The Electricity Law (1997, Amended 2012)	48
4.4.2 The Power Sector Policy Statement (2001)	49
4.4.3 The National Growth and Poverty Eradication Strategy (2004)	49
4.4.4 The Prime Minister's Decree on the Local and Rural Electrification Development Fund (REF) (2005)	50
4.4.5 The Renewable Energy Development Strategy (2011)	50
4.4.6 The Customs Law (2005)	51
4.4.7 Value Added Tax (2006)	51
4.4.8 National Policy on the Environmental and Social Sustainability of the Hydropower Sector in Lao PDR (2005)	52
4.4.9 the Law on Investment Promotion (2009)	52
4.4.10 Summary of Policy Recommendations	53
5. NAMA Baseline and Targets	55
5.1 NAMA Objectives	55
5.2 Alignment of NAMA Design with National Strategies and Transformative Change	56
5.3 NAMA Baseline	57
5.3.1 GHG Emission Reduction Baseline	57
5.3.2 Sustainable Development Baseline	59
5.4 NAMA Targets	60
6. NAMA Interventions	61
6.1 Eligibility Criteria	62
6.2 Approval Process for NAMA Interventions	63

6.3	Ownership and Operation of Interventions	64
6.4	Pilot Mini Grids	65
7.	NAMA Implementation Structure	67
7.1	Actions to Institutionalize the NAMA	67
7.2	NAMA Institutions	67
8.	NAMA Capacity-Building	71
8.1	Component 1: Capacity-Building for NAMA Implementation	72
8.1.1	Implementing The NAMA Network, Processes and Financial Cycle	72
8.1.2	Regulations and Contractual Conditions	72
8.1.3	Preparing NAMA Project Documentation	73
8.2	Component 2: Capacity-Building for Marketing and Awareness Raising	73
8.2.1	General activities	73
8.2.2	Stakeholder-Targeted Activities	74
9.	NAMA Costs and Finance	76
9.1	Costs of the Intervention	76
9.2	Costs of NAMA Capacity Development and Operations	76
9.3	The Stabilization Fund	78
9.4	National and International Finance	78
10.	NAMA Measurement, Reporting and Verification (MRV)	82
10.1	The MRV System for GHG Emission Reductions	82
10.1.1	Baseline	83
10.1.2	GHG Emissions Reductions	84
10.2	MRV System for Sustainable Development Benefits	91
10.3	MRV System for Financial Support	98
10.4	MRV Management	98
10.5	Verification	100
11.	NAMA Implementation Plan	101
11.1	Implementation of NAMA Institutional Structure	101
11.2	Securing Donor Support and Domestic Funding	101

11.3 Implementation of Intervention	101
Annex – Overview of Mini Grids	103
References	111

List of Tables

Table 1: MD Goal 1- Eradicate extreme poverty and hunger (status as of 2013)	23
Table 2: MD Goal 7 - Ensuring environmental sustainability (status as of 2013)	24
Table 3: MD Goal 8 - Developing global partnership for development (status as of 2013)	26
Table 4 : MD Goal 9 - Ensuring complete clearance of UXO from priority land (status as of 2013)	26
Table 5: Outstanding targets of the MDGs and associated barriers	27
Table 6: Potential grid connected renewable energy in Lao PDR, 2015-2025	32
Table 7: Grid connected renewable energy in Lao PDR, 2011	32
Table 8: Off-grid connected renewable energy in Lao PDR, end-2013	33
Table 9: Snapshot of mini grid power systems in Lao PDR	38
Table 10: Lessons from mini grid projects	39
Table 11: Overview of institutions linked to rural electrification	41
Table 12: Tax exemptions and reductions by investment zone	53
Table 13: Summary of recommendations on developing a favourable policy environment for a rural mini grid programme	53
Table 14: Indicators for SD baseline	59
Table 15: Expected and targeted impact of first eight mini grids	60
Table 16: Eligibility criteria for the NAMA intervention	62
Table 17: Description of approval process for NAMA interventions	62
Table 18: Overview of proposed NAMA pilot projects	62
Table 19: Capacity development and NAMA operational costs	63
Table 20: NAMA costs	65
Table 21: Contributions to NAMA financing of first eight mini grids	77
Table 22: SD indicators for the mini grid intervention	91
Table 23: Monitored SD parameters	93

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_12580

