

# GUIDEBOOK FOR THE DEVELOPMENT OF A NATIONALLY APPROPRIATE MITIGATION ACTION ON EFFICIENT LIGHTING



*Copyright © United Nations Environment Programme, 2013*

This publication may be reproduced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder, provided acknowledgement of the source is made. UNEP would appreciate receiving a copy of any publication that uses this publication as a source.

No use of this publication may be made for resale or for any other commercial purpose whatsoever without prior permission in writing from the United Nations Environment Programme.

#### **Disclaimer**

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the United Nations Environment Programme concerning the legal status of any country, territory, city or area or of its authorities, or concerning delimitation of its frontiers or boundaries. Moreover, the views expressed do not necessarily represent the decision or the stated policy of the United Nations Environment Programme, nor does citing of trade names or commercial processes constitute endorsement.

The information contained within this publication is for general guidance on matters of interest only, and may be subject to change without notice. While we have attempted to ensure that the information has been obtained from reliable sources, the UNEP/GEF en.lighten initiative is not responsible for any errors or omissions, or for the results obtained from the use of this information. All information is provided on an "as-is" basis with no guarantee of completeness, accuracy, timeliness or of the results obtained from the use of this information, and without warranty of any kind, express or implied, including, but not limited to warranties of performance, merchantability and fitness for a particular purpose.

In no event will the en.lighten initiative, its related corporations, contributors, or the partners, agents or their respective employees have any liability to you or anyone else for any act and conduct in connection with or related to the information provided herein. This disclaimer applies to any damages or liability and in no event will the en.lighten initiative be liable to you for any indirect, consequential, exemplary, incidental or punitive damages, including lost profits, even if the en.lighten initiative has been advised of the possibility of such damages.

ISBN: 978-92-807-3336-5



UNEP  
promotes environmentally sound practices globally and in its own activities. This publication is available electronically. Our distribution policy aims to reduce UNEP's carbon footprint.

# GUIDEBOOK FOR THE DEVELOPMENT OF A NATIONALLY APPROPRIATE MITIGATION ACTION ON EFFICIENT LIGHTING



# Acknowledgements

## Co-Authors

Kathryn M. Conway, UNEP  
Søren Lutken, UNEP Risø Centre  
Javier Otero Peña, UNEP  
Frauke Röser, Ecofys  
Sudhir Sharma, UNEP Risø Centre  
Caroline de Vit, Ecofys

## Special thanks

UNEP would like to thank the following individuals and organisations for providing data, and for their valuable comments and advice:

Vladislav Arnaoudov, Mitsubishi UFJ Morgan Stanley; Françoise d'Estais, UNEP; Fideicomiso para el Ahorro de Energía Eléctrica (FIDE)–The Electric Power Saving Trust Fund, Mexico; Claudio Forner, UNFCCC Secretariat; Laura Fuller, UNEP; Syed Mujtaba Hussain, Ministry of Climate Change, Government of Pakistan; Mihoko Kawamura, Japan International Cooperation Agency; Xuedu Lu, Asian Development Bank; Gustau Mañez Gomis, UNEP; Philipp Munzinger, GIZ; Juichiro Sahara, Japan International Cooperation Agency; Nicola Borregaard Strabucchi, Fundación Chile; Eric Usher, UNEP; Ash Sharma, Nordic Environment Finance Corporation; Djaheezah Subratty, UNEP; and, Klaus Wenzel, GIZ.

# Contents

<b>Abbreviations and Definitions</b>	<b>4</b>
<b>1. Introduction</b>	<b>5</b>
Background	5
Getting started	6
Clarifying the differences between NAMAs and Clean Development Mechanism	6
<b>2. Introduction to Nationally Appropriate Mitigation Actions (NAMAs)</b>	<b>8</b>
Defining NAMAs	8
Reasons for developing efficient lighting NAMAs	9
NAMA support	9
Measuring, reporting and verifying NAMAs	10
Developing a NAMA, step by step	10
Examples of efficient lighting NAMAs	11
<b>3. Structuring a NAMA for Efficient Lighting</b>	<b>12</b>
Developing a national efficient lighting strategy	12
Contents of a national efficient lighting strategy	14
Moving from strategy to action	15
Elements of a NAMA proposal	16
Costs, support needs and financing plan	19
Implementation plan	19
Measuring, reporting and verifying framework	20
<b>4. Measuring, Reporting and Verifying</b>	<b>21</b>
Framework for developing country NAMAs	21
Methodology for measuring, reporting and verifying	22
Implementing the measuring, reporting and verifying process	24
<b>5. Financing a NAMA</b>	<b>27</b>
Identify potential funding sources	27
Meeting international funders' requirements	30
Structuring NAMA finance	33
Forward strategy	36
<b>6. Conclusions</b>	<b>37</b>
<b>References</b>	<b>38</b>
<b>Annex A. The <i>NAMA Registry</i>: Implementation Support</b>	<b>39</b>
<b>Annex B. Some Existing Programmes for NAMA Readiness Activities</b>	<b>40</b>
<b>Annex C. Estimating the Impact of an Efficient Lighting NAMA</b>	<b>41</b>
<b>Annex D. Case Studies</b>	<b>44</b>
<b>Annex E. Procedures for Data Collection</b>	<b>46</b>
<b>Annex F. Some NAMA Funding Organizations</b>	<b>48</b>



# Abbreviations and Definitions

GEF	Global Environment Facility
GHG	greenhouse gas
Gt	gigatonne
NAMA	Nationally Appropriate Mitigation Action
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

<b>additionality</b>	Efforts that are beyond what has already been planned. Project additionality was required under the Clean Development Mechanism to ensure that carbon credits were not awarded for emissions reductions that would happen regardless of whether the project was implemented or not.
<b>baseline</b>	Development that is expected without initiating any additional action to reduce emissions. The baseline is also referred to as 'business as usual', meaning the sum of the current emissions and the anticipated development of emissions over a given period of time (typically a project or programme duration).
<b>Biennial Update Report (BUR)</b>	Reports to be submitted every two years by a developing country in its National Communications, per UNFCCC decision 1/CP.16. Least Developing Country Parties and Small Island Developing States have more flexibility. Reports include information on greenhouse gas inventories, mitigation actions taken, and support needs.
<b>International Consultation and Analysis (ICA)</b>	The process of analysis of the information submitted in Biennial Update Reports, by international experts to ensure completeness, consistency and accuracy of information. It also includes consultations among Parties on the analysis and Biennial Update Reports under the Subsidiary Body of Implementation of the UNFCCC to collectively assess the efforts of countries to address climate change.
<b>incremental costs</b>	Costs that are over and above those incurred by following the baseline development. The incremental costs are additional ones affiliated with a choice of a lower carbon emission alternative. The term does not indicate which party bears the costs.
<b>monitoring, verifying and enforcing (MVE)</b>	Monitoring is a process to measure and track product efficiency. Verifying is the process through which declarations of product performance by suppliers are confirmed. Enforcing is the legal recourse taken by programme administrators or other responsible parties against suppliers of non-compliant products.
<b>measuring, reporting and verifying (MRV)</b>	Measuring includes collecting information on the impacts of a NAMA. Reporting refers to submitting the measured information in a defined and transparent manner. Verifying requires independently assessing the information that is submitted for completeness, consistency and reliability. The UNFCCC Subsidiary Body for Scientific and Technical Advice is developing guidelines for measuring, reporting and verifying for unilateral NAMAs. Measuring, reporting and verifying for internationally supported NAMAs will be guided by the supporters and will follow the guidelines for International Consultation and Analysis adopted at the UNFCCC 17 <sup>th</sup> Conference of the Parties.
<b>stakeholders</b>	All persons and institutions that are affected positively or negatively by a given action.
<b>transformational</b>	The character of an action that emphasizes the permanence of the expected impact. It is contextual, calling for a permanent change to current ways of operation. It prioritizes policy initiatives over projects and sector focus over stand-alone installations, but evaluation is qualitative and non-prescriptive, leaving the evaluation of the transformational character to the stakeholders.
<b>Supported NAMA</b>	A NAMA that involves contributions from third parties in developed countries in the form of finance, technology or capacity building. Contributions are documented through Biennial Update Reports to the UNFCCC, as per its guidelines in Annex III to Decision 2/CP.17. Developing countries will receive financial and technical support from developed countries for preparation of the Biennial Update Reports.
<b>Unilateral NAMA</b>	A NAMA that does not involve contributions from third parties in developed countries and, therefore, is implemented solely with the host country's domestic resources.

# 1. Introduction

## Background

In 2010, global greenhouse gas emissions were 47.9 Gt compared to 35.8 Gt in 1990. Apart from the growth in international transport, this increase stemmed exclusively from industrialization in developing, non-Annex I countries<sup>1, 2</sup>. Every year, the Conference of the Parties to the UNFCCC continues to seek an agreement that will decisively reduce the growing greenhouse gas emissions. Focus has been placed on the distribution of responsibilities and actions to address the challenges, guided by the principle of common but differentiated responsibilities.

Reflecting the changing balance in greenhouse gas emissions, the Nationally Appropriate Mitigation Action (NAMA) is a recent interpretation of the principle of common but differentiated responsibilities. In addition to developed countries' commitments to quantitative reductions of greenhouse gas emissions, developing countries are invited to contribute with voluntary actions that are 'nationally appropriate' deviations from 'business as usual' emissions scenarios. Such deviations may be captured in low-carbon (or low-emission) development strategies, and then implemented as NAMAs.

As the UNFCCC did not provide further definitions for NAMAs, it is up to the developing countries to interpret it according to their national contexts. A series of decisions made during the Conferences of the Parties to the UNFCCC, since 2007, may be relevant for defining NAMAs. In the context of this Guidebook, a NAMA can be considered as any mitigation action tailored to the national context, characteristics and capabilities, and embedded in national sustainable development priorities<sup>3</sup>. Countries can submit their NAMAs to the UNFCCC's *NAMA Registry*, for preparation assistance, recognition, or for international support<sup>4</sup>. Submissions to the *NAMA Registry* are voluntary. Anyone can develop or promote a NAMA but only a national authority can approve submission of a NAMA to the *NAMA Registry*. For links to the *NAMA Registry*, see Annex A.

Presently, the *NAMA Registry* shows NAMAs that have been submitted. More complete lists are available via the *NAMA Pipeline* hosted by UNEP Risø Centre and Ecofys' *NAMA Database*, which comprises more than 100 NAMAs, including those submitted to the UNFCCC, and others being developed around the world<sup>5, 6, 7</sup>.

Keeping the global average temperature from rising more than 2°C above pre-industrial levels requires significant cuts in emissions from 2020 to 2050, in all countries including non-Annex I countries. Transitioning to energy efficient lighting offers a tangible, rapid, and cost effective way of reducing greenhouse gas emissions. Several NAMAs submitted to the UNFCCC mention energy efficient lighting as part of a broader strategy, while a few focus solely on efficient lighting. UNEP estimates that, "Replacing all on-grid inefficient lighting globally will result in annual savings of: USD 112 billion in electricity bills annually and 500 million tonnes of CO<sub>2</sub> reductions"<sup>8</sup>.

In 2010, with a grant from the Global Environment Facility, UNEP launched the en.lighten initiative, a public-private partnership that assists developing countries to phase out inefficient incandescent lamps, and to tap the potential economic and environmental benefits of a transition to the most advanced and efficient lighting technologies<sup>9</sup>. The en.lighten initiative supports developing country efforts to create national efficient lighting strategies that incorporate an integrated policy approach, including:

- Minimum energy performance standards
- Supporting policies and mechanisms
- Monitoring, verifying and enforcing
- Environmentally sound management of lighting products

<sup>1</sup> The data supporting *The Emissions Gap Report 2012* (UNEP 2012) documents that Annex I greenhouse gas emissions were 19.2 Gt in 1990 and 17.7 Gt in 2010, while non-Annex I greenhouse gas emissions were 16.6 Gt in 1990 and 30.2 Gt in 2010.

<sup>2</sup> For a list of non-Annex I countries see: [http://unfccc.int/parties\\_and\\_observers/parties/non\\_annex\\_i/items/2833.php](http://unfccc.int/parties_and_observers/parties/non_annex_i/items/2833.php)

<sup>3</sup> In *Low Carbon Development Strategies: A Primer on framing NAMAs in LCDS*, (UNEP Risø Centre, 2011a) UNEP and UNEP Risø Centre encourage governments and planners to link general development planning, low-carbon development strategies, and NAMAs in a structured manner.

<sup>4</sup> [http://unfccc.int/cooperation\\_support/nama/items/6945.php](http://unfccc.int/cooperation_support/nama/items/6945.php)

<sup>5</sup> <http://namapipeline.org/>

<sup>6</sup> <http://www.nama-database.org/>

<sup>7</sup> Excluding those that were uploaded to the Copenhagen Accords.

<sup>8</sup> UNEP en.lighten initiative, 2013, accessed on 8 July 2013 at: <<http://www.enlighten-initiative.org/portal/Portals/26107/documents/forum/gelf-brochure.pdf>>

<sup>9</sup> The Australian Agency for International Development (AusAID) and the Global Environment Facility (GEF) provide funding to UNEP for the en.lighten initiative. Private sector partners of the initiative include: Osram, Philips Lighting, and the National Lighting Test Centre (Beijing).

To date, 50 countries have joined the en.lighten initiative's Global Efficient Lighting Partnership Programme with the intent of phasing out inefficient lighting by 2016. UNEP encourages countries embarking on national efficient lighting strategies to consider implementing these strategies as NAMAs.

## Getting started

This Guidebook illustrates how to create an efficient lighting NAMA based on a country-led national efficient lighting strategy. It aims to be a practical resource for governments (ministries of energy, environment, housing, climate change, finance, planning and others), private sector investors and civil society organizations. Users already may have developed an efficient lighting strategy, or may be in the process of developing one<sup>10</sup>. Furthermore, users may have an interest in articulating a NAMA for the implementation of the strategy, indicating how the country will turn strategy into practice. Articulating the NAMA facilitates communication with stakeholders, including citizens, the private sector, and national and international funders.

Chapter 2 gives a generic background for the NAMA concept, origin and founding principles, as well as current interpretations among international stakeholders and the UNFCCC Secretariat.

Chapter 3 provides specifics on how to develop a NAMA from a national efficient lighting strategy, using UNEP en.lighten initiative's *Achieving the Global Transition to Energy Efficient Lighting Toolkit* and other tools, such as models and forecasts, to provide evidence for consideration by key stakeholders and potential funders. The UNFCCC has not yet promulgated strict requirements for NAMAs, but best practices from developed NAMAs, as well as donor and investor due diligence requirements provide a basis for evidence for present NAMAs.

Chapter 4 introduces one of the most important elements of a NAMA: the measuring, reporting and verifying of the NAMA impacts, including emissions reductions and co-benefits. While basic requirements are given by the decisions of the Conference of the Parties, current practices in designing and implementing NAMAs show that accurate interpretation of measuring, reporting and verifying systems for NAMAs are crucial.

Chapter 5 explains the current sources of financing for NAMAs, and ways that efficient lighting NAMAs could be financed. It introduces the 'incremental costs' approach as a means of quantifying budgets for 'supported NAMAs'.

Chapter 6 reviews and summarizes the information contained in this Guidebook, and offers brief advice on what steps to take in order to tap the potential of efficient lighting NAMAs.

## Clarifying the differences between NAMAs and Clean Development Mechanism

Many readers may have experience with the Clean Development Mechanism, which is one of the flexible mechanisms introduced by the Kyoto Protocol. NAMAs are sometimes thought of as the successor to the Clean Development Mechanism (in particular, to the Programme of Activity modality<sup>11</sup>), but the two are quite different. One of the core objectives of the Clean Development

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\\_9051](https://www.yunbaogao.cn/report/index/report?reportId=5_9051)

