Indonesia’s Framework for Nationally Appropriate Mitigation Actions

November 2013
Indonesia’s Framework for Nationally Appropriate Mitigation Actions
Indonesia’s national development has invariably been concerned with sustainable development, in which the needs of the present generation are met without compromising the ability of future generations to meet their own needs. In this regards, Indonesia has to balance social, economic, and environmental aspects of development. Since the earth summit of 1992, Indonesia has implemented development endeavors that have pervasively touched upon various development pillars.

On the environment pillar, Indonesia has voluntarily committed itself to reducing greenhouse gas emissions to mitigate global warming and manage climate change. Indonesia has established related regulations, institutions, and enacted several policy documents to make climate change mitigation actions available. Nationally Appropriate Mitigation Actions (NAMAs) introduced in the Bali Action Plan are expected to be the main vehicle for mitigation actions in Indonesia.

The Government of Indonesia has developed a national policy framework and action on climate change. To advance and promote the effort nationally, the GoI enacted the Presidential Regulation No. 61 – the National Action Plan for GHG emission reduction (Rencana Aksi Nasional Penurunan Emisi Gas Rumah Kaca, henceforth RAN-GRK) on 20 September 2011. RAN-GRK is regarded as the starting point for the development and implementation of the NAMAs.
This book is an attempt to take stock and document on the latest update of the current effort on Indonesia’s NAMAs Framework. The book provides an overview of climate change policy development in Indonesia and Indonesia’s path to a NAMAs framework. The framework includes: the Indonesian mitigation policy framework and the NAMAs; NAMAs institutional set-up; key elements of NAMAs implementation; latest update on NAMAs development; and way forward to improve, strengthen, and to furthering the current NAMAs effort.

Taking this opportunity, I would like to extend my appreciation to the team that has worked very hard on finishing this paper. In spite of limited space and time that the team has, this book has presented the key achievements that have been attained in our effort of developing NAMAs. I hope this publication will help all of us to understand the challenges that Indonesia faces in developing NAMAs further in Indonesia.

Armida S. Alisjahbana  
Minister of State for National Development Planning/  
Head of National Development Planning Agency
Glossary

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>APBD</td>
<td>Local Budget</td>
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<td>APBN</td>
<td>State Budget</td>
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<td>BAU</td>
<td>Business As Usual</td>
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<td>Bappenas</td>
<td>National Development Planning Agency</td>
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<td>BLU</td>
<td>Public Service Agency</td>
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<td>EPR</td>
<td>Extended Producer Responsibility</td>
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<tr>
<td>ERS</td>
<td>Emission Reduction Scenario</td>
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<tr>
<td>ESDM</td>
<td>Energi dan Sumber Daya Mineral (Energy and Mineral Resources)</td>
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<tr>
<td>GHG</td>
<td>Greenhouse Gas</td>
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<tr>
<td>GRK</td>
<td>Gas Rumah Kaca (Green House Gas/ GHG)</td>
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<tr>
<td>ICCSR</td>
<td>Indonesia Climate Change Sectoral Roadmap</td>
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<td>ICCTF</td>
<td>Indonesia Climate Change Trust Fund</td>
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<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
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<tr>
<td>KAK</td>
<td>Term of Reference</td>
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<td>KPS</td>
<td>Public Private Partnership</td>
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<td>MRV</td>
<td>Measurement, Reporting, Verification</td>
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<td>NAMAs</td>
<td>Nationally Appropriate Mitigation Actions</td>
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<td>NPV</td>
<td>Net Present Value</td>
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<td>OPD</td>
<td>Local Government Organization</td>
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<td>PP</td>
<td>Government Regulation</td>
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<td>Acronym</td>
<td>Description</td>
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<tr>
<td>PIP</td>
<td>Government Investment Facility</td>
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<tr>
<td>Perpres</td>
<td>Peraturan Presiden (President Regulation)</td>
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<tr>
<td>RAN-GRK</td>
<td>National Action Plan for Green House Gas Emission Reduction</td>
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<td>RAD-GRK</td>
<td>Local Action Plan for Green House Gas Emission Reduction</td>
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<tr>
<td>REDD+</td>
<td>Reducing Emissions from Deforestations and Forest Degradation</td>
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<tr>
<td>Renstra K/L</td>
<td>Ministry/Agency’s Strategic Plan</td>
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<td>Renja K/L</td>
<td>Ministry/Agency’s Work Plan</td>
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<tr>
<td>RKP</td>
<td>Development Work Plan</td>
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<td>RKPD</td>
<td>Local Development Work Plan</td>
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<td>RKTN</td>
<td>National Level Forestry Plan</td>
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<td>RPJNP Nasional</td>
<td>National Long-Term Development Plan</td>
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<td>RPJPDaerah</td>
<td>Local Long-Term Development Plan</td>
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<td>RPJMD</td>
<td>Local Mid-Term Development Plan</td>
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<td>RPJMN</td>
<td>National Mid-Term Development Plan</td>
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<td>Renja SKPD</td>
<td>District Government Work Unit Work Plan</td>
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<td>Renstra SKPD</td>
<td>Strategic Plan of District Government Work Unit</td>
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<td>SFM</td>
<td>Sustainable Forestry Management</td>
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<td>TPA</td>
<td>Landfill</td>
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<td>UU</td>
<td>Law</td>
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<td>UNFCCC</td>
<td>United Nations Framework Convention on Climate Change</td>
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Nationally Appropriate Mitigation Actions (NAMAs)\(^1\) are expected to be the main vehicle for mitigation actions in developing countries. NAMAs are thought to provide a new opportunity for developing countries to take action on their large and rapidly increasing greenhouse gas (GHG) emissions, while managing their economic growth, social, and development needs. NAMAs should take up ongoing or planned sectoral mitigation activities such as development of renewable energy (RE) and energy efficiency (EE), sustainable forest management, improved transportation systems, and support them by means of national and international sources, thereby facilitating their implementation at an ambitious level.

**Figure 1. NAMAs Conceptual**

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1. Since the introduction in the Bali Action Plan, NAMAs have been categorized according to their source(s) of funding in discussions and submissions to the UNFCCC (e.g. EU submission, 2009). NAMAs had been categorized as: (i) being financed by own resources and international support, to achieve an agreed deviation from business-as-usual through NAMAs, which can not be used as an offset by developed country Parties, and (ii) being financed through market and non-market mechanisms that can be used as an offset by developed countries.
At the G-20 meeting in Pittsburgh and at UNFCCC COP15 in Copenhagen in 2009, the President of the Republic of Indonesia committed to achieve the target of 26% reduction in carbon emissions from a Business As Usual (BAU) scenario by 2020. Further emissions reductions of up to 41% are expected to be implemented with international support. These commitments were submitted as Indonesia's nationally appropriate mitigation actions to the UNFCCC in January 2010.

This is fully in line with Indonesia's continued efforts to implement its target under the Climate Change Convention and contribute to a global mitigation effort in accordance with the principles and provision of the Convention. Furthermore, the Government of Indonesia has developed a national policy framework and action on climate change. To advance and promote the effort nationally, the Government of Indonesia (GoI) enacted the Presidential Regulation No. 61 – the National Action Plan for GHG emission reduction (Rencana Aksi Nasional Penurunan Emisi Gas Rumah Kaca, henceforth RAN-GRK) on 20 September 2011. RAN-GRK is regarded as the starting point for the development and implementation of NAMAs.

However, there are emerging questions about Indonesian NAMAs that need to be addressed. Several key elements to building an effective NAMA framework on international as well as national level require clarification, such as the difference between NAMAs and RAN-GRK, the institutional set-up, NAMA criteria, ways of financing or MRV (measurement, reporting and verification), and standards for different NAMA types.

To address the above questions, this document was developed to provide information on the latest update of the current effort on Indonesia's NAMAs framework. The document will outline key information regarding Indonesia's NAMAs framework that is currently under development. Key elements comprise of: 1) Introduction; 2) The development of climate change policy in Indonesia as the NAMA background; 3) The national mitigation policy framework and NAMAs; 4) NAMAs institutional set-up; 5) Key elements of NAMA implementation; 6) Latest update on NAMA development; 7) Way forward.

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2 See NAMA definition and scoping at section 3
Since 2007, the climate change development in Indonesia gathered significant momentum when Indonesia hosted the 13th COP of the UNFCCC in Bali. Indonesia established several institutions and enacted several policy documents and related regulations to address climate change. The National Council for Climate Change (Dewan Nasional Perubahan Iklim, henceforth DNPI) was formed in 2008 and acts as the national focal point for climate change issues discussed in international forum. Subsequently, the GoI mainstreamed climate change activities into the National Medium-Term Development Plan 2009-2014 (Rencana Pembangunan Jangka Menengah Nasional, henceforth RPJMN) and established a national trust fund (ICCTF) to finance climate change activities. At the end of 2009, Indonesia announced its voluntary commitment to mitigation followed by the issuance of Presidential Regulation No. 61/2011 on the National Action Plan to reduce GHG emissions (RAN-GRK).

**Figure 2. The Development of Climate Change Policy in Indonesia**

- **Hosted COP13 in 2007**
- **National Action Plan Addressing Climate Change (NAP) published**
- **President announces GHG reduction target of 26% / 41% at G20 Summit**
- **Indonesia Climate Change Sectoral Roadmap (ICCSR) established**
- **Norway-Indonesia REDD+ LoI signed**
- **Regional Action Plan on GHG Emission Reduction (RAD GRK)**
- **Preparation of MER mechanism for RAN/RAD-GRK**
- **National Council on Climate Change (DNPI) established**
- **Parliament establishes REDD Commission**
- **Development Plan (RPJM 2009-2014) includes climate change**
- **Indonesia Climate Change Trust Fund (ICCTF) established**
- **Indonesian Second National Communication (SNC)**
- **President announces GHG reduction target of 28% / 41% at G20 Summit**
- **Presidential Regulation No.61 Year 2011 regarding National Action Plan on GHG Emission Reduction (RAN-GRK)**
- **Presidential Regulation No.61 Year 2011 regarding GHG Inventory**

3 For more information about ICCTF and climate change financing projects implemented, please visit: www.icctf.or.id

4 The RAN-GRK is an action plan designed for 10 years from 2010-2020 that explains how Indonesia plans to achieve its mitigation target of 26% below BAU level by 2020 through domestic efforts and the target of 41% reduction to be reached with international support.
As a follow up to the above commitment, the RAN-GRK was provided with a policy framework for the central government, local government, private sector, and other key stakeholders to implement related actions directly and indirectly for the period of 2010 – 2020. The policy framework fully referred to the vision of the National Long-Term Development Plan (Rencana Pembangunan Jangka Panjang Nasional, henceforth RPJP 2005-2025) and the second period of RPJMN 2010 – 2014 priorities. The vision and priority were further translated into an annual work plan (RKP) as the climate change policy umbrella in Indonesia.

Indonesia has also actively engaged in REDD+ negotiations and development since 2007. A number of REDD+ initiatives have been launched, accompanied by proclaimed changes in national policies and legislation in favor of REDD+. Following the Bali Action Plan, Indonesia received access to multilateral and bilateral funds to support the REDD+ readiness phase. Indonesia also signed an agreement with the Government of Norway to address emissions from deforestation and forest degradation. As a follow up, Indonesia formulated a REDD+ national strategy and action plan.

The development of the Indonesian mitigation action framework is currently progressing; with nearly all provinces having developed their Local Action Plan to reduce GHG emissions (Rencana Aksi Daerah untuk Penurunan Emisi Gas Rumah Kaca, henceforth RAD-GRK). In addition to planning, in 2012, the system for monitoring, evaluation and reporting (MER) of mitigation actions was developed in collaboration with regions and line ministries. The national GHG inventory system (Sistem Inventarisasi Gas Rumah Kaca

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5 Stated in vision six of the RPJP for a more attractive and sustainable Indonesia; and in priority 9 of the second RPJM regarding the environment and disaster management.
6 The UNREDD Indonesia program expired in 2012, but the Forest Carbon Partnership Facility (FCPF) program managed by the World Bank is still active.
7 Further, 11 selected provinces are now finalizing the SRAP documents (Provincial Strategies and Action Plan for REDD+). Related ministries also formulated similar initiatives for other sectors such as REFF Burn for energy integrated sectors and “REWaste” for the waste sector.
8 About 32 out of 33 provinces have submitted the RAD-GRK to Bappenas (for more information on RAD-GRK, visit: www.sekretariat-rangrk.org)
Nasional, henceforth SIGN) coordinated by KLH was set-up in 2011. These fundamental systems are the necessary pillar for Indonesia’s MRV system. The system will enable Indonesia to provide sound evaluative evidence to draft the biennial update reporting (BUR) and the national communication to the UNFCCC.

The RAN/RAD-GRK implementation is expected to align with national development principles and priorities, mitigation potentials and feasibility, as well as financial support. In addition, the RAN-GRK has been identified as the starting point for the development and implementation of NAMAs. NAMAs shall support the further implementation of the RAN-GRK with unilateral means (to support the 26% emission reduction target) and with international support (to support emission reductions up to 41%).
According to its definition, a nationally appropriate mitigation action (NAMA) is a voluntary measure for mitigating GHG emissions. NAMA implementation can be supported by the implementing country or by developed countries. The support is expected to cover financing, technology transfer and capacity building⁹. With the political framework for NAMAs evolving, NAMAs will become a central element of the international climate policy regime. NAMAs entered the climate policy agenda through the 2007 Bali Action Plan, when the Conference of Parties (COP) to the UNFCCC agreed on using them to address mitigation on a broader scale. Meanwhile, many countries have submitted NAMA proposals to the UNFCCC and a number of countries are currently preparing detailed NAMA concepts in various sectors such as transport, energy, waste, industry, buildings, forestry and agriculture.

Efforts undertaken in the context of REDD+ are an integral part of the RAN/RAD-GRK and emission reductions achieved through REDD+ implementation should be accounted towards the national target of -26% / -41%. Although the scope of sectoral activities might be similar between REDD+ and land-based NAMAs, a particular set of institutional procedures, plans and strategies might apply for REDD+ (e.g. the REDD+ agency, Fund for REDD+ Indonesia, MRV institutions). Commonly, land-based NAMAs are based primarily on RAN/RAD-GRK and follow related procedures (see Box 1).

⁹ As no internationally agreed definition for NAMA currently exists, NAMA activities are generally not limited as long as they are in line with national development plans, result in the mitigation of GHG emissions, and have an impact that can be measured, reported, and verified (MRV) (UNFCCC, 2007). Potential measures under a NAMA are thus varied and can be a mix of activities over various sectors, policies, strategies, programs and/or projects.
Box 1. RAN-GRK in the land based sector

RAN-GRK lists about 50 main mitigation actions; 19 of these actions are listed under the land-based sector, which amounts to 672 m tCO2-emission reduction or 87.6% of the total target. In addition, RAN-GRK also lists several actions (such as research, improving the database for forest inventory, and producing new regulations) to support the implementation of main activities in the sectors. Relevant Ministries and Local Government have also allocated their budgets to implement some activities under RAN/RAD-GRK for 2010-2014, and indicated an allocated budget for 2015-2020. In the 2012 budget, the Government of Indonesia allocated about USD 1.6 billion (IDR 15.9 trillion) to fund these actions, excluding road and irrigation network maintenance (Ministry of Finance, 2012).

The Government of Indonesia has also published a National Strategy for REDD+ and a National Action Plan for REDD+. Eleven Provinces are in the process of finalising Provincial Strategy and Action Plan for REDD+ (SRAP) documents, including a Provincial Reference Level (RL). Some Provinces use a BAU Baseline in the RAD-GRK as the RL, while others use baselines with varying base years and different assumptions for projections. Hence, to avoid double counting, the approaches will be harmonized.

To govern the REDD+ initiatives, the Government of Indonesia has also set up the REDD+ Agency (President Regulation/Perpres Num.62/2013)*. In addition, the moratorium that expired in May 2013 has been extended until 2015 (Presidential Instruction No. 6/2013). The REDD+ Task Force was created to monitor implementation and supported by line ministries which are developing a geo-database system**.

The long lists of land-based mitigation actions proposed by ministries and provincial governments (RAN/RAD-GRK) are seen as potential NAMAs. These actions will be prioritized and submitted as NAMAs to the UNFCCC. Some actions have allocated budget from the local state budget/national state budget (APBD/APBN). These actions would then be submitted as NAMAs seeking recognition, and would fall under the unilateral NAMAs that are included under the 26% voluntary target. Some other actions would be submitted as supported NAMAs (or fall under the additional 15% of Indonesia’s supported voluntary target).
The REDD+ Agency acts to facilitate line ministries/institutions to implement REDD+ activities and to ensure that REDD+ activities receive the financial support accordingly. The REDD+ Agency is responsible to report directly to the President. In addition, to support the task, a moratorium of a two-year suspension on new licenses for logging and forest conversion was enacted in 2011 (Presidential Instruction No.10/2011).

*) The geo-database system pools all information on land certificates and licenses for land utilization issued by the national government, such as the Ministry of Forestry, as well as by local government. The geo-database system improves the existing Forest Monitoring System under the Ministry of Forestry which combines remote sensing and on-ground measurement under the National Forest Inventory system (NFI).

The UNFCCC recognizes two categories of NAMAs – those developed using domestic means (unilateral NAMAs) and those requiring international support (supported NAMAs). A third category, called “credited or market-based NAMAs”, is not yet recognized officially by the UNFCCC, but is generally understood as those NAMAs generating GHG offsets, to be commercialized on international carbon markets. The picture below shows the difference between unilaterally funded NAMAs (up to -26% target), internationally supported NAMAs (-26 to -41% target), and credited NAMAs (beyond -41% target) according to the presidential announcement for the GHG emission reduction target (see also figure 1).

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### Figure 3. Unilateral, Supported, and Credited NAMAs

1. **National targets**
   - **National strategy and action plans (RPJMN, RAN-GRK)**

2. **UNFCCC recognition**
   - **ICA, BUR**

3. **Offset**
   - **Other countries buying**

4. **Carbon market (e.g. JCM-CDM)**

5. **-41 to -100% Credited**
   - **Land-based**
   - **Energy (Industry, transport)**
   - **Waste**

6. **-26 to -41% Supported**
   - **REDD+**

7. **0 to -26% Unilateral**

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**10 In the current practice, most NAMAs will apply a hybrid-funding model, drawing on a base funding (APBN and related) and using internationally supported NAMA funding to move on more ambitious levels of implementation.**
More specific to unilateral and supported NAMAs, these two types of NAMAs are meant to support the achievement of Indonesia’s sustainable development planning. Indonesian NAMAs has long-term vision since the NAMAs are not only accommodate the current needs but also the long term low carbon emission development.

The establishment of NAMAs shall support the further implementation of Indonesia’s GHG mitigation efforts by various means. Such as enhanced transfer and employment of low carbon techniques and technologies, improvement of related capacities, as well as the development of a robust system of measurement, reporting and verification for mitigation actions. As a follow up, the GoI aligns the NAMA concept with the national mitigation policies, programs and actions called RAN-GRK. This includes strengthening and reinforcing the implementation, addressing barriers, building capacities and enhancing financial mechanisms. (See further explanation in section 2: The development of climate change policy in Indonesia).

Once the policies are in place, the mitigation actions and programs for implementation shall refer to the BAU scenario and are expected to achieve the national GHG emission reduction as targeted.

**Figure 4. RAN-GRK as Indonesian NAMA**

Indonesian NAMAs are built on RAN/RAD-GRK to seek recognition from International parties, selected NAMAs derived from the RAN/RAD-GRK will be submitted to UNFCCC.
Bappenas enacted Decree No. 38/M.PPN/HK/03/2012 to establish the Climate Change National Coordination Team (Tim Koordinasi Penanganan Perubahan Iklim, henceforth CCNCT). The mandate of CCNCT is to 1) optimize the implementation of Presidential Regulation (Perpres) RAN-GRK; 2) coordinate the climate change mitigation and adaptation actions; and 3) increase the efficiency and effectiveness of RAN-GRK target achievement.

To support CCNCT daily operation, the CCNCT secretariat (also known as RAN-GRK secretariat) was established. The CCNCT Secretariat consists of two units: the Help-Desk and the NAMA Development think tank called NC4ND (National Center for NAMA Development). The Help-Desk supports the development and review of the national and sub-national mitigation and adaptation plan (RAN/RAD-GRK and RAN/RAD-API) and provides technical support for monitoring, evaluation and reporting (MER). The GHG mitigation MER reports are subject to verification which is coordinated by the Ministry of Environment (KLH). The think tank acts to support the development of NAMAs and adaptation programs/projects.

11 The CCNCT comprises of two team, they are the Steering Team and Working Group working on 1) Agriculture; 2) Forestry and Peat-land; 3) Energy, transportation, and industry; 4) Waste management; 5) Support and across sectors; 6) Climate change adaptation

12 See result and guidelines of MER of RAN/RAD-GRK at: www.sekretariat-rangrk.org
Figure 5. CCNCT and the relation with financing institutions and MoE

The Help-Desk provides technical support to the representatives from the relevant line ministries at the National Committee (CCNCT) and to the representatives from sub-national government agencies at the Local Committee in developing and reviewing the mitigation plan (RAN/RAD-GRK) and the adaptation plan (RAN/RAD-API). The review of the plans is regularly conducted based on the input from the regular evaluation as part of the MER and verification function. The think tank (NC4ND) works in two ways: Firstly, by providing technical support to the NAMA developers in developing NAMA proposals: secondly, by taking joint initiatives with sector actors in developing particular NAMAs in close consultation with the relevant ministries. Beyond proposal development, the think tank actively promotes the NAMAs to the key stakeholders including public, private, and community sector.

The climate related financial institutions assess the project pipeline and proposals submitted by the CCNCT Secretariat and other developers according to the national priorities and their criteria and standards (e.g. RAN/RAD-GRK, RAN-API, etc.) which are agreed on with the donors/investors. The climate related financial institutions

Notes: * Beside to verify the proposed pipeline, climate related financing institutions may provide operational support (e.g. operational cost) to the CCNCT secretariat.
** The name of NC4ND may change when it includes the function of adaptation program/project development.
offer different types of financing which include non-returnable financing (e.g. grants, risk coverage, subsidies, performance–based finance) and returnable financing (e.g. debt, equity). In addition, the think tank can facilitate partnerships with commercial financial institutions like banks, revolving fund schemes, investment companies, wealth management or pension fund institutions in order to leverage private finance.

Furthermore, RAN-GRK is categorized and structured into three main group sectors comprising of policy makers from relevant departments in the respective sector ministries. The working groups are expected to coordinate the further design and implementation of specific NAMAs in respective sectors, they consist of 1) Land-based NAMAs; 2) Integrated Energy NAMAs; 3) Integrated Waste NAMAs; as described in Figure 6.

**Figure 6. Three main group sectors for RAN-GRK implementation**

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Key Elements of NAMA Implementation

5.1. National criteria for NAMA

The Government of Indonesia is currently preparing NAMAs in various sectors. In order to ensure that NAMAs will effectively contribute to meeting Indonesia’s mitigation targets and other national development priorities, the following basic criteria are considered essential:

- NAMAs should be built upon the national mitigation policy framework (RPJPN, RPJMN, ICCSR, RAN/RAD-GRK), and shall be aligned with the national development priorities including the national mitigation targets. If the proposed NAMAs are not listed in the RAN/RAD-GRK documents, the submitting entity shall report to all relevant agencies (sector/line-ministries and/or local government) for endorsement.

- NAMAs should comply with the government monitoring, evaluation, and reporting mechanism for RAN/RAD-GRK policies and actions. The reporting procedures are further explained in the RAN/RAD-GRK guidelines\(^\text{13}\).

- NAMAs should be consistent with the national development goals, and complement the existing sector policies and programs. In doing so, capacity building measures should be built upon existing initiatives, and international financing opportunities should be used in a manner that will leverage national funding capacity effectively.

- NAMAs should address the development benefits include social, economic, political, and environmental aspects\(^\text{14}\). The Government of Indonesia primarily strives to advance national development programs. In this light, emission reductions could serve as co-benefits of sustainable development. Therefore, RAN/RAD-GRK also play an important role in promoting low carbon development.

- NAMAs should contribute to fundamental changes in national and sector policies to

\(^{13}\) For more information, visit www.sekretariat-rangrk.org to download the respective document.

\(^{14}\) The development benefits in the economy aspect include economy-wide energy cost saving, energy intensity of GDP, energy diversity, reduction of fuel consumption, etc. In the social and politics aspect include: less of infectious disease, comfort increase, travel distance and time. In the environment aspect: soil quality, air quality, noise reduction, GHG emission reductions, etc.
achieve low emission development, as well as to fostering institutional coordination and innovative collaboration.

- NAMAs should describe the likelihood of successful Implementation and forecast long-term impacts, which demonstrate the immense potential for scaling up and replication.
- A NAMA should estimate the direct and indirect GHG mitigation potentials, and demonstrate cost-effectiveness. Furthermore, it should make transparent how emission reductions relate to the national BAU scenario. The NAMA should also develop capacities to reduce future GHG emissions.

For Indonesia, the BAU concept is central to its climate goals, given the announcement of a target of 26 or 41% emission reductions relative to a BAU scenario (Presidential Regulation No. 61/2011). There is no single objective business-as-usual scenario; it depends on projections of GHG emissions originating from future economic growth and, structure as well as technology development. The baseline development should serve as an agreed understanding of the starting point for implementing the RAN-GRK and NAMAs, both in terms of status and enhancement of policies and programs, as well as related GHG emissions. Elaboration, see Box 215.

15 Applied models and methods in the energy extrapolation linear projection is the model applied in the energy sector. The Ministry of Energy will lead modelling and provincial government’s training on LEAP. The Ministries of Transport and Industry will support this process by providing more detailed data to the Ministry of Energy, to run LEAP. Moreover, the Ministries of Transport and Industry may develop specific models for each sub-sector. The aim is to use IPCC tier 2 for data and algorithms, for the energy sector. Applied models and methods in the land-based to estimate the likely land-use/cover change, and future emissions based on historical and/or future planning, the model used “Markov Chain Transition Matrix”, which calculates the land cover distribution by comparing two different times (the distribution of time-2, based on the initial land-use/cover distribution at time-1, by means of a transition matrix). The transition matrix data are mainly derived from land cover maps that are provided by the Ministry of Forestry and refine by peatland data from Ministry of Agriculture, on the basis of 23 land classifications. The target for calculation of baseline for land-base is tier-3 approach. Applied models and methods in the waste simple excel-based extrapolation. Simple and easy to calculate likely a higher degree of implementation by local government (Tier 1). For further information please check: www.sekretariat-rangrk.org
Box 2. Development of a BAU baseline and emission scenarios

Three levels of an emission scenario shall include: 1) A business as usual scenario: Total absence of mitigation related policies before enactment of RAN-GRK (e.g. use of inefficient coal fired powerplants in the energy generation sector); 2) Base case scenario: that is the list of mitigation actions contained in the RAN/RAD-GRK, meaning the incorporation of all mitigation related actions by the sectors such as renewable energy programs, sustainable forestry and peatland management approaches; 3) Best case scenario: Developing full fledged mitigation actions as NAMAs based on RAN/RAD-GRK and aiming at achieving -41% emission reductions.

Indonesia screens all relevant policies, whether they are explicitly climate, agriculture or rural development policies, one by one, to determine whether they should be taken into account in the baseline scenario.

Considering Indonesia’s decentralized political system, it is generally agreed that the better approach to setting a baseline is a combination of a bottom-up and top-down approach, which is expected to capture a different policy at national and local level.

Using a bottom-up approach means that data collection and compilation takes place at the provincial and city/district government levels. The first national baseline was calculated using a top-down approach. This approach was more expedient, and provided a general overview of the magnitude of Indonesia’s emissions, but lacked accuracy. Therefore, the refined calculation will combine both approaches to provide better estimates.

Baseline BAU for the transport sector of 33 provinces in Indonesia (Bappenas, 2012), in tons of CO2e

In Indonesia, the preparation of the baseline scenario is seen as a dynamic process and mechanisms are being established to allow for regular updates (at least every 5 years in line with the country’s mid-term development plans). Both RAN-GRK and RAD-GRK use the year 2010 as the base year for starting mitigation actions. Only mitigation actions from 2010 and beyond are considered in the calculation (for more information about BAU, visit www.sekretariat-rangrk.org).
5.2. NAMAs Submission Procedure

Unilateral and supported NAMAs will be integrated into national and provincial development reports. In accordance with Government Regulation No. 10 year 2011 on the Mechanism on Receiving Foreign Loan and/or Grant, all NAMA proposals for any program/project/activity will be submitted to Bappenas by the Line Minister/Head of Government Agency or by a private sector and community association/organization. Foreign aid/grants\textsuperscript{16} received will be managed in compliance with the Indonesian public finance management regulation and mechanism.

With regard to Government Regulation No. 10 year 2011, proposals for supported NAMAs will require the submission of 1) the DSKK (Feasibility Study Document) which outlines the technical, economic, financial, and social/environmental feasibility of the activities proposed; 2) the KAK (Guiding Framework for Implementation) which provides information about the activities; 3) the DIPK (List of Activities Proposed)\textsuperscript{17}; and 4) Accompanying letter(s) as necessary (see Figure 3). By contrast, the requirement for a unilateral NAMA submission is to attach the endorsement letter from the respective Minister and/or Governor.

When the NAMA proposals have been submitted to Bappenas, the proposals will be subject to review and an approval process in a multi-stakeholder meeting (Steering Committee of Climate Change National Coordination Team, henceforth SC-CCNCT), involving Bappenas, line ministries, the Ministry of Environment, DNPI, and the support of the RAN-GRK Secretariat (or CCNCT secretariat). The submission procedure for both unilateral and supported NAMAs is described in the following figure.

\textsuperscript{16} The foreign aid/grant mechanism is defined in the Government Regulation No. 10 year 2011 as: “[…] revenue of the national government which comes in the form of foreign exchange (devisa), foreign exchange converted into Indonesian Rupiah, Rupiah, goods, services, and/or securities, as received from the Grant provider, which does not have to be paid back, which could be from domestic source or foreign source”.

\textsuperscript{17} The information requirements of each document is outlined in Petunjuk Pengusulan Kegiatan yang dibiayai dari Pinjaman dan/atau Hibah Luar Negeri 2010-2014 (Government of Indonesia, 2010). See www.bappenas.go.id.
DNPI as the focal point to the UNFCCC will facilitate further review and the validation process prior to the submission of a NAMA proposal to the UNFCCC Secretariat. The process aim is to validate all the submitted information to ensure compliance with the UNFCCC NAMA Registry template.

DNPI as the ‘focal point’ will submit the proposal to the UNFCCC Registry. Any feedback from interested donors will be incorporated directly into the NAMA proponent with the acknowledgement of DNPI. Further development of the project will be recorded in the national registry system, including the monitoring and evaluation of implementation. At the national level, the progress of implementation including the GHG emission reduction progress will be reported into the national GHG inventory system and associated
reporting mechanisms, i.e. upcoming National Communications and the Biennial Update Reports (BUR).

As NAMAs are not limited to public/government activities (unilateral and supported), but may include carbon market-based (credited) action, a comprehensive, integrated and robust institutional mechanism is now being developed to encourage NAMA submissions.

5.3. NAMA Financing

5.3.1. NAMA financing mechanism

It is estimated that Indonesia still requires more than double of existing public climate funds in order to achieve the national mitigation target for the period of 2010-2020 (MoF 2012). According to the Ministry of Finance (MoF), in order to achieve the mitigation target in forestry, peat, energy, and transport, Indonesia requires between USD 10 billion and USD 14 billion per annum – half of which is required to be sourced from public funds. It is estimated that Indonesia still requires another USD 2.3 billion to USD 5.3 billion per annum of public funds from the Government of Indonesia and foreign donors to reach its target, while only USD 1.6 billion from domestic public sources and about USD 0.6 billion from foreign public funds are made available in current pledges.

NAMAs can be financed with different types of funds. The type may a single or combination of grant, loan, and domestic finance. Financing for NAMAs should not only cover investment for activities that directly reduce GHG emission but also supporting and enabling activities including technology transfer and capacity building.

Foreign donors and investors can finance NAMAs by channeling the funds to the or by investing in the climate-related financial institutions. According to the National Treasury Law, sovereign-loans must go through the Ministry of Finance. For funds in the form of grants, non-sovereign loans or other forms of investment (e.g. equity) can go through climate-related financial institutions.

For general climate investments, especially grants, donors and investors can address the Indonesian Climate Change Trust Fund (ICCTF). The ICCTF is a nationally managed trust fund established by the Government of Indonesia to pool and coordinate funds from various sources such as international donors and the private sector, to support Indonesia’s climate change policies (RAN-GRK and RAN-API) in line with national development plans. Currently, the ICCTF is supporting several sector ministries and local

18 See Figure 1
19 The key elements of this mechanism will include the Secretariat, roster of experts and Approval Committee reflecting interested key stakeholders
governments in developing NAMA proposals such as the Smart Street Lighting Initiative (SSLI) and Renewable Energy NAMAs.

The Fund for REDD+ Indonesia (FREDDI) is under development by the newly established REDD+ Agency to manage funds and investments related to REDD+. Other options include funds to promote infrastructure development in Indonesia which cover investments in renewable energy and energy efficiency; these include Indonesia Infrastructure Finance (PT SMI), the Government Investment Agency (PIP), and Indonesia Infrastructure Guarantee Fund (IIGF).

From the proponent’s point of view, a proposal can be submitted via different channels. If it is to support activities at the program level (e.g. development of an institution, policy and other supporting facilities) and at the project development phase (e.g. project concept, feasibility study, etc.), they can approach the ministries who manage the sector relevant to their NAMA, the local government receiving climate funds from the Ministry of Finance or the climate-related financial institutions. In regard to the support for the implementation phase, the proposal can be submitted to the climate-related institutions. The NC4ND is established in order to support this process of NAMA proposal formulation and can be approached accordingly.

5.3.2. Climate-relevant investments made by the Government of Indonesia

In 2012 the government budget allocated USD 1.59 billion to implement RAN-GRK. This consists of regular government spending in the central and local government (USD 1.07 billion) reserved mainly for sustainable forest management and peat land management, investment financing which is mainly associated with forest funds and allocations to government investments in renewable energy (USD 0.4 billion), and tax subsidies for geothermal and bio-fuels (USD 0.12 billion) (MoF 2012).

The regular government spending is implemented by the line ministries in the central government and by sub-national governments in provinces and districts as well as municipalities. They conduct activities in the whole range of NAMAs, covering enabling environment, project development and implementation.

5.3.3. Private financing

Indonesia has great potential to leverage private sector resources. The average loan to deposit ratio (LDR) of commercial banks in Indonesia during the period of 2006 to 2012 was 73%. Until June 2013, there were USD 42.8 billion of third party funds available for lending in the commercial banks (Bank Indonesia 2013). Meanwhile, according to a 2012 Ernst & Young survey, global private equity investors, institutional investors, and private equity investment bankers which are based in Asia Pacific chose Indonesia among the
top-5 countries for investments. From 2011 to September 2012, Ernst & Young report 13 investment deals worth close to USD 900 million.

While the figures show the huge potential of private finance in the country, it is hard to assess how much can be tapped for green investment. Nevertheless, the figures show that commercially viable climate projects in Indonesia have the opportunity to leverage domestic and global private finance.

In conclusion, the funding of NAMAs will typically require a comprehensive financial package, comprising of public sources and mechanisms, private sector investment and financing, as well as international funding sources through supported NAMAs. It can be recommended to establish an annex to the NAMA proposals to be submitted with these financial estimates and budget plans. Among others, the NC4ND is established as a unit to provide support in the development of these documents as well in the matchmaking with financial institutions, sources and mechanisms.

Box 3. Proposal for a new scheme of NAMAs seeking international support

On the international level, an effective and efficient funding mechanism for emission reduction activities under NAMA schemes is not yet available. This situation triggered developing countries to engage more effectively in global mitigation efforts as agreed in the UNFCCC (Bali Action Plan and following COP meetings). Performance-based payment is a concept to provide incentives for the developers and implementers of nationally appropriate mitigation action by awarding a premium price for GHG emissions reductions resulting from NAMA activities.

Figure 8. Scheme of NAMAs seeking international support
The NAMAs would be based on the Indonesian national action plan for the reduction of GHG emissions and is designed to support the achievement of the national target for mitigation (-26 / -41% until 2020). Such a reduction achievement will not be counted as offsets and hence will not be bought on the market to be used by other countries seeking to achieve their domestic mitigation targets – as is the case with CDM and related carbon market mechanisms.

The source of financing for performance-based payments (PBP) is expected to be the long-term finance pledges by industrialized countries (UNFCCC, 2009-2012) meant to provide assistance to developing countries in their efforts to reduce emissions and contribute to the UNFCCC ultimate targets.

Indonesia shall design a NAMA program, which could be exemplified by a waste to energy program aimed at reducing methane. The government supports the development of waste to electricity by providing investment resources for power plant establishment and enhanced grid connections. The private sector invests in waste to energy technology and generates electricity for the energy demand side. On a program level, these different elements of waste to electricity are brought together and facilitated by a particular NAMA mechanism (including a finance institution to facilitate pre-financing and investments) under the coordination of government institutions (Ministry of Energy and Mineral Resources - ESDM; and Bappenas).

Related to a BAU scenario, GHG emission reductions through NAMAs are accounted for using a mutually agreed method and MRV system. We may call such unit as Voluntary NAMA Emission Reduction (VNER), composed of tCO2e or related proxies, depending on the need assessments and negotiations between the funding country and Indonesia.

The picture above explains the concept of internationally supported NAMAs using a performance-based payments approach, resulting in voluntary NAMA emissions reductions by Indonesia (I-VNER).
NAMA proposals that are currently being developed (and are partially submitted) in different sectors with the support of development agencies and climate policy experts include: 1) Integrated Energy NAMAs; 2) Integrated Waste NAMAs; and 3) Land-based NAMAs. An integrated energy NAMA has been developed to cover mitigation actions in energy production and in energy efficiency in the transport, industrial and commercial sectors.

Several NAMA proposals have been developed in the energy sector, covering the production side (to maximize renewable energy utilization) and the consumption side (efficient energy use in the transport, industrial and commercial sectors). There are two NAMA proposals under development, and two proposals have been submitted for international funding, they are RENAMA and SSLI\textsuperscript{20}. For the transport sector, one SUTRI proposal has been submitted to UNFCCC; and an extension of SUTRI proposal is submitted for international funding\textsuperscript{21}. While in the industry, two proposals are still under development as well as in the land-based. And in the waste sector, a V-NAMAs proposal has been submitted for International funding\textsuperscript{22}. See further elaboration in the summary table of the latest NAMAs development below.

\textsuperscript{20} The SSLI NAMA and the RENAMA concept development is supported by GIZ PAKLIM and is funded by the German Federal Ministry for Economic Cooperation and Development, see project digest in annex 2

\textsuperscript{21} Ibid

\textsuperscript{22} The V-NAMA concept development is supported by the regional V-NAMA project funded by the German Federal Ministry for Environment, Nature Conservation and Nuclear Safety, ibid
The Indonesian Waste NAMA Project was established to unlock the largely unused GHG reduction potential in the solid waste sector. Mirroring REDD+ in the land-based NAMAS, the Government of Indonesia is now also developing a national strategy for reducing
emissions via integrated waste NAMAs (REF-WS) and integrated energy NAMAs (REFF-BURN).

Roughly 19 RAN-GRK actions are listed under the land-based sector, which amounts to 672 mtCO2-emission reduction or 87.6% of the total national target. Some actions have received budget sourced from the local state budget/national state budget (Anggaran Pendapatan dan Belanja Daerah/Negara, henceforth APBD/APBN). These actions are expected to be submitted as NAMAs seeking recognition, and would fall under the unilateral NAMAs that are included under the 26% voluntary target.

Some other actions would be submitted as supported NAMAs (or fall under the additional 15% of Indonesia’s voluntary target). However, further elaboration is needed regarding the procedures and the format of project documents both for NAMAs and REDD+ initiatives.
Way Forward

The Indonesian NAMAs Framework document is intended to provide an overview of the GHG mitigation action development in Indonesia. Furthermore, it is aimed to serve as guidance for:

1. Securing sustainability of planning policies in addressing climate change issues;
2. Strengthening institutional capacity for NAMA development;
3. Streamlining GHG mitigation actions into national and sub-national development policies to achieve the national mitigation target;
4. Strengthening Indonesia’s position in the international climate change agenda.

In order to achieve those objectives, several measures should be taken as follow-up actions, including:

- Setting up the fundamental prerequisites on NAMA development in various sectors;
- Strengthening the system and mechanism of planning, implementation, evaluation and control of NAMA development to ensure its sustainability;
- Increasing the promotion and marketing efforts of ideas for NAMAs in different sectors;
- Improving negotiating skills in order to increase the confidence of donors in supporting NAMA development in Indonesia;
- Strengthening institutional capacity and the quality of human resources in NAMA development.
Annex 1 Latest Update on NAMA Development

1. Integrated Energy NAMAs

In response to climate change negotiations at the international level, an integrated energy NAMA has been developed to cover mitigation actions in energy production and in energy efficiency in the transport, industrial and commercial sectors.

Mirroring REDD+ in the land-based NAMAS, the Government of Indonesia is now developing a national strategy for reducing emission from fossil fuels burning (REFF-Burn+) in the integrated energy sector.

Several NAMAs proposals have been developed for the integrated energy sector, relating to the production side (maximize renewable energy utilization) and the consumption side (efficient energy use in the transport, industrial and commercial sectors). One proposal related to the transport sector has been submitted to the UNFCCC.

1.1. Renewable Energy NAMA

The Renewable Energy NAMA (RENAMA) overcomes bottlenecks through capacity building of banks and project developers. A showcase financing model shall be established, using supported NAMAs to attract high quality RE projects with low specific mitigation costs and a high potential for up-scaling.

Qualified RE projects shall receive incremental subsidies of 10% and will be subject to strict MRV and benchmarking procedures. Project finance will be provided by the state-owned enterprise on infrastructure development (PT SMI), to be assisted by a technical support unit in screening and due diligence of RE-projects. Capacities of project developers, banks and government institutions will be strengthened. The Ministry of Finance will be advised on fiscal instruments to support the transformational change from subsidized fossil fuels to RE.

The RENAMA will support Indonesia in achieving its emission reduction target as stipulated in the Presidential Regulation No. 61/2011 on RAN-GRK, namely the construction of 1225 MW RE power plants with reductions of more than 4.2 mtCO2 by 2020. In addition, RENAMA produces a number of co-benefits including: (a) Increased energy security, (b) Energy subsidy reduction, (c) An increased electrification rate, (d) Reduced air pollution, and (e) Decarbonizing the power sector.
1.2. Small-scale RENAMA
This NAMA promotes small and medium scale (≤10 MWe) renewable energy electricity generation. In particular, it focuses on privately owned facilities that are grid-connected and sell electricity back to the relevant local utility, so called independent power producers (IPPs). It takes a top-down approach to supporting the sector and complements the RENAMA described above, which considers model projects/finance that act as a catalyst to the sector.

The current enabling environment for IPPs is promising, with a feed-in tariff (FIT) and robust long-term power purchase agreements (PPAs) available to project developers. However, i) current capacity for the development and assessment of feasibility and design documentation is low; ii) the local banking sector is risk averse for new technologies such as renewable energy projects, and iii) the terms offered by banks to IPPs are often prohibitive.

Under this small-scale RENAMA, an enabling investment environment for IPPs will be created through a mixture of technical support and financial components. The Action consists of an initial Phase I24.

In Phase II a public finance mechanism is being developed in collaboration between the Ministry of Energy and Mineral Resources (Kementerian Energi dan Sumber Daya Mineral, henceforth ESDM) and MoF based on three initial design options comprising of a loan facility, equity provision (to extend bank loan periods), or a partial credit guarantee to banks. These options have been chosen to build on existing institutional structures and programs where possible.

The supported small-scale RENAMA targets 1,800 MW of capacity and aims to raise the ambition of RAN-GRK RE actions in line with generation plans up until 2020 in line with the 41% GHG reduction target25. Increased private sector investment in RE can benefit Indonesia through improved energy security, delivery of energy for growth, reduced subsidy costs, employment and reduced air pollution. The total mitigation impact is estimated at 6.5 MtCO2e/yr by 2020.

1.3. Sustainable Urban Transport NAMAs
The Sustainable Urban Transport Program Indonesia (SUTRI NAMA) aims to transform the urban transportation system in Indonesia with a mix of capacity-building and investment measures. It is expected that NAMA SUTRI will reduce emissions by 5 mtCO2 and will lead to tangible co-benefits i.e. less congestion, air pollution and segregation.

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24 Phase I includes: 1) The establishment of a Clearing House for IPPs, a technical support unit that provides guidelines/templates to banks and developers, conducts training, connects stakeholders to expert advice, maintains a database of contractors and RE resource data, and offers small grants for feasibility study preparation; and 2) The development of a grid compensation mechanism, considering remote IPPs sometimes fail to sell electricity due to grid outages. A partial compensation mechanism based on a minimum standard could improve revenues for these projects.

25 Target reflected in one of the sample projects in East Kalimantan.
At the National Level, the national framework program will consist of a Sustainable Urban Transport Fund (SUTF) aiming at co-funding local policies and measures, and a Technical Support Unit (TSU) which provides trainings to local government, expert consultancies and co-funding for pre-feasibility studies. The implementation of the national framework program will help to overcome a series of structural barriers.

At the local or provincial level, the policy packages include a mix of ‘push’ and ‘pull’ measures, including high quality public transport, non-motorised transport (NMT) (such as walking and cycling), Transport Demand Management (TDM) (such as parking management and traffic management), spatial planning, alternative fuels and vehicle efficiency. In the first phase the implementation will focus on TDM measures and the promotion of NMT. The pilot cities for a first-phase implementation are Medan, Batam and Manado.

The experiences gained will improve cities’ capacity to adopt sustainable urban transport in their transport master plans, corresponding policies and investment programs, as well as to build their capacity in budgeting the processes and developing applications for grant-based funding offered by different transport funds at the national level. This will pave the way for full-scale implementation of SUTRI NAMA with additional domestic and international funds to stimulate the transformational change in urban transport in Indonesian cities.

**NAMAs Criteria in the Transport Sector**

1. NAMAs should be built on current climate and transport policies in Indonesia, including the climate change action plan and national urban transport framework.
2. NAMAs should endeavor to work towards creating sustainable transport systems.
3. NAMAs should be proposed in coordination with local government, and should serve to building a better and more efficient transport system at the local level according to local transport needs.
4. NAMAs should encourage the collaboration between the private sector and state-owned enterprises, and should strengthen coordination and cooperation with other line ministries and government agencies.
5. NAMAs should attempt to improve the institutional capacity for data collection and transport data quality, and also to develop a reliable data system crucial to evaluating the emission reduction potential of NAMAs in the transport sector.

**1.4. Smart Street Lighting Initiative (Energy Efficiency NAMA)**

The Smart Street Lighting Initiative (SSLI) NAMA aims at reducing GHG emissions by increasing the energy efficiency of street lighting systems in Indonesian cities and urban areas. This includes the substitution of conventional street lighting with more efficient street lighting technologies. Most of the cities are still being partially charged for street light electricity consumption on a lump-sum (unmetered) basis. With support from the SSLI NAMA, the pace on the way to full meter coverage in all Indonesian cities shall be accelerated in line with replacement and new installation of more efficient street lighting technologies such as LED (light-emitting diode).
The NAMA aims to start implementation in 2014 in up to four small and medium-sized cities, before expanding to implementation in eight additional cities by 2016 and up to 22 cities until 2020. The NAMA will assist cities in overcoming their incremental costs when investing into more efficient technologies. In addition to achieving GHG emission reductions, the NAMA supports several other Indonesian development priorities including energy security of supply (by reducing demand) and public safety (through improved public lighting).

In 2011, about 3068 GWh or 2.3 million tons of CO2 resulted from public street lighting power consumption. Up to 40% of CO2 emission reductions can be achieved with more efficient lighting technologies and management.

Based on first calculations, the SSLI NAMA aims at an emission reduction of 400,000 tCO2e until 2020. Considering the current average lifetime (10 years) of LED street lighting technologies, the SSLI NAMA can achieve up to approximately 1,400,000 tCO2e by 2024.

The ICCTF will administer international NAMA funds to demonstrate implementation in selected pioneer cities, to strengthen cities’ capacities and to overcome barriers in order to pave the way for broader implementation with financing through the Government Investment Facility (PIP) in the Ministry of Finance. Furthermore, it will introduce the ESCO (Energy Service Company) model. Consequently, the NAMA support is integrated with domestic financing in the form of low interest loans to enable city-wide implementation and leverage the impact of the NAMA support to other cities.

2. Integrated Waste NAMAs

The waste sector contributes around 9-11% of Indonesia’s total GHG emissions. Although the share of its emissions is still much smaller compared to that of other sectors such as forestry and agriculture, the waste sector is an important and growing source of GHG emissions. Based on the Climate Change Policy documents in Indonesia, the waste sector is one of the priority areas for GHG emission reduction.

Focused on the municipal solid waste sector, the Indonesian Waste NAMA Project aims at unlocking the so far largely unused GHG reduction potential in the solid waste sector. Further, the project aims at strengthening national systems by helping overcome such barriers as: lack of financial incentives; lack of political/co-benefit incentives; lack of integration; institutional weaknesses; weak implementation of appropriate technology in waste management; lack of capacity of human resources; and poor availability of data and information.

An innovative approach of vertically integrating three levels of government (national, provincial and municipal) will be used in the project in order to align their respective roles and responsibilities. The project also breaks new ground by developing business
models to increase the role of the private sector in waste management. In the long term, project outcomes should build the base for low-emission reform in the waste sector.

The scope of the project will include several groups of provisions to be implemented in six selected project sites, such as infrastructure investment at final disposal sites (technology for GHG mitigation, such as landfill gas capture and storage); 3R (Reduce, Reuse and Recycle) facilities; waste to energy facilities; capacity building; community development; awareness raising and education; and institutional strengthening.

The estimated GHG direct mitigation effect from activities planned in the proposed project is 1,722 mtCO₂e in the period of 2016-2020. This GHG emission reduction is expected to result from main activities in six locations (Kendari, Malang, Pekalongan, Jambi, Jombang and Sidoarjo). In addition, the proposed NAMA Support Project would trigger indirect mitigation effects, e.g. savings on fossil fuels that will be substituted by waste; savings in raw materials substituted by secondary raw materials (recycled waste), reduction of GHG emissions in agriculture through partial substitution of chemical fertilizers by compost; reductions on emissions from leachate by optimized treatment technology at new sanitary landfills; creation of a better waste management capacity leading to reductions in GHG that originate from improper treatment practices, such as open burning; promotion of controlled digesting and composting techniques to avoid unintended methane emissions; and awareness raising and more conscious consumer behaviour for waste minimization.

Mirroring REDD+ in the land-based NAMAS, the Government of Indonesia is now also developing a national strategy to reduce emissions from the integrated waste sector (REF-WS).

**NAMAs Criteria in the Waste Sector**

1. NAMAs should be built on current climate and waste policies in Indonesia;
2. NAMAs should be in line with local government programs;
3. NAMAs should be well communicated and agreed upon with the ministries and local government in order to develop appropriate and sustainable waste management systems at the local level;
4. NAMAs should improve the human resources capacity of the local government and/or the local community;
5. NAMAs should address co-benefits at the local level;
6. NAMAs should attempt to improve the availability of data and information.

**2.1. Cement Industry NAMA**

A Cement Industry NAMA is currently under development following the policy of the Ministry of Industry to encourage cement industries in the implementation of mitigation actions, under the Minister of Industry Decree No. 12/M-IND/PER/1/2012 on a ‘Road Map of CO2 Emissions Reduction in Cement Industry’. The decree has stated that the cement industries are expected to reduce their GHG emission voluntarily by 2% in 2011-2015 and
mandatorily by an additional 3% in 2016-2020. It was agreed that these targets would be
applied to each company and will be measured against their own specific emissions in
2009.

The NAMA aims to support the companies in achieving these targets and in applying
process and technology modification, as one of the actions listed in the RAN-GRK. The
mitigation options for the industries covers blended cement, alternative fuels, and
energy efficiency, with high potential of emission reduction potential. Co-benefits
such as a contribution to waste management in Indonesia and an increase of industrial
competitiveness are also expected.

Currently, the Ministry of Industry is also developing instruments that could be used
in the implementation of the NAMA. A stimulus package to finance the investment
carried out by companies is currently under development and will be part of domestic
financing of the actions. Additionally, the draft of a technical guideline on monitoring
and reporting is available and agreed upon by the ministry and industrial companies.
The document includes guidelines on calculating emissions and on setting up a sectoral
MRV mechanism.

NAMAs Criteria in the Industry Sector
1. NAMAs should be built on current climate and industrial policies in Indonesia;
2. NAMAs should be attractive for the private sector and state-owned enterprises;
3. NAMAs should be well communicated and agreed upon with the participating
   private sector and state-owned enterprises;
4. NAMAs should encourage and trigger the investments made by the private sector
   and state-owned enterprises;
5. NAMAs should encourage private sector and state-owned enterprises to monitor
   and report reliable data to the ministries and local government;
6. NAMAs should improve the institutional capacity to build reliable data systems and
   conduct quality assurance of the data.

3. Land-Based NAMAs
Reducing emissions from the land-based sectors is the main focus of Indonesia’s
mitigation actions until 2020. The mitigation actions in the land-based sector could be
operationalized through NAMA or REDD+ mechanisms. Based on the REDD+ strategy
and on the current phase of readiness, REDD+ initiatives will focus on improving enabling
conditions for future REDD+ implementation. The enabling conditions include:
1. Improving forest governance: such as improving permit/license procedures, tenure
   systems, strengthening spatial planning institutions.
2. Improving database management: such as one map data policy, national forest
   monitoring & inventories.
3. Improving Sustainable Forest Management through regulations.

Regarding NAMAs on the land-based sectors, the first round of NAMA proposals would
explore several initiatives that are expected to show a quick-win action in reducing land-based emissions. These actions could subsequently be elaborated further and scaled up at a later stage.

Several initiatives are currently being explored to be developed into a solid NAMA proposal. One initiative came from the East Kalimantan Province where ex-mining areas are abundant. This land-based NAMA project will focus on the rehabilitation and reclamation of post-mining areas that could be utilized for smallholder plantation to improve local livelihood. This initiative is also in line with the priority of the provincial action plan of East Kalimantan where this sub-sector was forecast to contribute a significant GHG emission under a BAU scenario. The status of the project is currently at the feasibility study phase. The feasibility study is expected to recommend a strategy and technical aspect for the implementation of such a project and to propose a regulation framework at the national and local level (province and district) that would enable the implementation of the reclamation and post mining rehabilitation for smallholder plantations.

Several NAMA proposals have also been elaborated such as smallholder timber plantations for wood to energy NAMAs. However, additional efforts are essential to produce an implementable NAMA activity to be submitted as a NAMA proposal.

To support the implementation of both NAMAs and REDD+ in Indonesia, the Indonesian Government is also developing an MRV design for land-based mitigation actions linked to the National Forest Monitoring System.
Annex 2. (Link to Figure 10. Summary table on latest NAMAs development)

Format 2.1. Project Digest in Energy Sector
2.1.1. Proposal has been submitted to International Funding – RENAMA 26

<table>
<thead>
<tr>
<th>Project Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project Title : Enabling Renewable Energy Investment in Indonesia through supported NAMAs (RENAMA)</td>
</tr>
<tr>
<td>2. Project Type :</td>
</tr>
<tr>
<td>4. Implementing Agency : Ministry of Energy and Mineral Resources</td>
</tr>
<tr>
<td>5. Duration : 4 years</td>
</tr>
<tr>
<td>6. Location :</td>
</tr>
</tbody>
</table>

7. Background:

Indonesia has taken decisive steps to initiate a transformational change from a predominantly fossil fuel based economy towards a sustainable energy supply with Renewable Energy (RE). Goals for Greenhouse Gas (GHG) mitigation and RE have been set, action plans announced, ministerial regulations for feed in introduced and respective institutions set up. Although the potential for RE exceeds 100 GW there are hardly any projects implemented. Main reasons are: absence of a functioning finance mechanism, lack of financing institutions familiar with RE project finance, low capability of developers to propose bankable projects. These bottlenecks shall be overcome through capacity building of banks and project developers and a showcase financing model shall be established, using supported NAMAs to bring high quality RE projects with low specific mitigation cost and high potential for upscaling to the ground. Qualified RE projects shall receive incremental subsidies of 10% and will be subject to strict MRV and benchmarking procedures. Project finance will be provided by SMI, to be assisted by a technical support unit in screening and due diligence of RE-projects. Capacities of project developers, banks and government institutions will be strengthened. The Ministry of Finance will be advised on fiscal instruments to support the transformational change from subsidized fossil fuels to RE.

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26 RENAMA concept development is supported by GIZ PAKLiM and GIZ renewable energy program (which are funded by the German Federal Ministry for Economic Cooperation and Development/BMZ) in cooperation with Indonesia Ministry of Energy and Mineral Resources
8. Objectives
To develop a NAMA in energy sector particularly in the power sector from the introduction of renewable energy, namely bioenergy, PV, hydropower as contribution of the energy sector to the emission reduction commitment of Indonesia stipulated under Presidential Regulation No. 61/2011 on the National Action Plan (NAP) for GHG Emissions Reduction (RAN-GRK).

9. Scope of Projects
a. To develop a NAMA proposal that meet MRV requirements for the energy sector particularly in the power sub sector from Renewable Energy.
b. To prepare means of implementation for the NAMA proposal that consist of technical support component, financial cooperation component, and other component.
c. To enhance capacity of related actors and institutions for the NAMAs development on the renewable energy sector.

10. Activities
The Project will target primarily grid connected RE-projects. The grid emission factor varies widely depending on region. According to the latest update by the National Council on Climate Change (NCCC) it ranges from 0.33 to 0.96 t CO2/MWh with an average of 0.76. Assuming a load factor of 70% for hydro and bio-energy power plants, grid connected systems have an annual emission reduction potential of 4,600 t CO2/MW installed and an additional 9,300 t CO2/MW for projects involving methane capture.

Because of its high cost-effectiveness, one focus of the project will be waste to energy from agro industry involving methane capture. Assuming investment cost of 1.5 Million Euro/MW installed for biogas plants and a total envisaged investment volume of 80 Million Euro, about 50 MW of biogas generated power could get grid connected, avoiding 695,000 tons of CO2 annually. Assuming 15 years lifetime for biogas plants and overall Project cost of 11.5 Million Euro, a ton of CO2 avoided would cost the Project about 1 Euro.

Besides biogas, the proposals showcasing other RE technologies with reasonable cost-effectiveness but outstanding innovation and market potential shall be supported, it is realistic to adjust the direct mitigation potential of the Project to 500,000 t annually with average project costs of 1.5 Euro/t CO2 avoided.

The activity in the financial component will mainly relate to the provision of financial support to complement the equity and the loan to be provided by project developers and the financial institution called PT.SMI.

To be monitored:
- The amount of financial support, equity of project developers and loan provided
by SMI to project developers;
- The emission reduction in t CO2 per Euro invested.

To be reported:
- The amount of investment and financial support that has been provided to the project developers will be reported by the project committee and will be part of its activity report. This report will be submitted to related government agencies, such as Bappenas, Ministry of Energy and Mineral Resources, Ministry of Finance;

To be verified:
- Verification on the total financial support that is provided to project developers will be based on the financial audit of the project developers

11. Project Cost
Estimated full cost of implementation is 11.5 Mio USD
The cost consist of Technical Support Component, Financial Cooperation Component from NAMA facility funding, Fund provided by submitter, and Third party contribution.
2.1.2. Proposal has been submitted to International Funding - Smart Street Lighting Initiative (SSLI) 27

<table>
<thead>
<tr>
<th>Project Proposal</th>
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<tbody>
<tr>
<td><strong>1. Project Title</strong> : Smart Street Lighting Initiative (SSLI)</td>
</tr>
<tr>
<td><strong>2. Project Type</strong> : Financial and Technical Assistance</td>
</tr>
<tr>
<td><strong>3. Executing Agency</strong> : Ministry of National Development Planning/Bappenas</td>
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</tbody>
</table>
                           b. Provincial and local government |
| **5. Duration** : 6 years |
| **6. Location** : Cities in Indonesia |

**7. Background:**

The Smart Street Lighting Initiative (SSLI) NAMA aims to increase the energy efficiency of street lighting by substituting conventional street lighting with more efficient technologies in Indonesian cities and urban areas. In doing so, the SSLI will result in reduced energy consumption and lower greenhouse gas (GHG) emissions. Most of the cities are still partially charged for the street lights’ electricity consumption on a lump-sum (unmetered) basis, the SSLI will therefore encourage further energy policy reform, the more rapid uptake of electricity metering and the modernisation of street lighting systems that meet road safety standards. The SSLI thus contributes to a more efficient and secure energy system and a safer society.

The NAMA is in line with several provincial mitigation action plans (RAD-GRK) and contributes to the Indonesian emission reduction target (26/41% compared to BAU in 2020). So far no national standards for LED street lighting exist. Furthermore, most of the cities are still partially charged for the street lights’ electricity consumption on a lump-sum (unmetered) basis, hence no financial incentives exist to invest into more efficient technologies such as LED. The NAMA aims to start implementation during 2014 in up to four small and medium-sized cities, before expanding to implementation in further eight cities by 2016 and in 15 cities until 2020. The NAMA will support cities to overcome their incremental cost when investing into more efficient technologies. In the mid-term the NAMA aims at changing the pricing mechanism to enable cities to re-invest the gained savings. In addition to achieving GHG emissions reductions, the NAMA supports several other Indonesian development priorities including energy security of supply (by reducing demand) and public safety (through increased lighting amenity).

27 SSLI concept development is supported by GIZ PAKLIM (which is funded by the German Federal Ministry for Economic Cooperation and Development/BMZ) in cooperation with Indonesia Ministry of Energy and Mineral Resources
The ICCTF will administer international NAMA funds to demonstrate implementation in selected pioneer cities, to strengthen cities’ capacities and to overcome barriers in order to pave the way for broader implementation with financing through the Government Investment Facility (PIP). Furthermore, it will introduce the ESCO (Energy Service Company) model. In this way, the NAMA support is integrated with domestic financing in the form of low interest loans to enable city-wide implementation and leverage the impact of the NAMA support to other cities.

8. Objective

The SSLI NAMA aims at reducing GHG emissions by 400,000 tCO₂e to 2020 by improving levels of energy efficiency in the area of public street lighting in Indonesian urban areas. Up to 1,400,000 tCO₂e can be expected in 2024. This emission target is based on only replacing the street light bulbs with LED, additional emission savings result from installation of metering systems and improvement of cabling and services. Updated calculations including savings resulting from installation of metering systems and improvement of cabling and services will be provided after the starting phase mid of 2016.

9. Scope of Projects

a. To develop a NAMA proposal that meet MRV requirements for the energy sector particularly in the energy efficiency sub sector from street lighting.

b. To prepare means of implementation for the NAMA proposal (detailed NAMA implementation plan already existent).

c. To enhance capacity of related actors and institutions for the NAMAs development on the energy efficiency sub sector.

10. Activities

The SSLI NAMA promotes efficient street lighting technologies, dominantly LED. Besides the reduction of energy use and related emission reductions, it aims at introducing the latest street light technologies to the Indonesian market via trade fares, campaigns and technology partnership with internationally established street lighting technology providers and thereby contributes to technology transfer. Furthermore, the SSLI NAMA will incentivise the introduction of standards to ensure that quality products are utilised. It will also penetrate the market through a numbers of ESCOs and its related services.

In this SSLI NAMA the private sector will be closely involved. The private sector companies providing efficient street lighting equipment will enter into supply agreements with provincial/municipal governments involved in the NAMA.

The SSLI NAMA foresees an investment roll-out that comprises of different financing
sources for different phases of implementation. The technological support is used to provide funding for capital investment for the replacement with energy efficient street lights such as LED in the starting phase (2014-2015). This investment aims at triggering investments by local government into more energy efficient street lights through low interest loans from the government investment facility (PIP). During the transformation phase of the SSLI NAMA, the implementation of energy efficient street light systems shall be financed by involving Energy Service Companies (ESCO), commercial loans from the financial market and other forms of public financing (2016-2019).

The capacity building support is to provide technical assistance in various areas of the SSLI NAMA:

- Establishment and operation of the SSLI NAMA Technical Support Unit within the Ministry of Energy and Mineral Resources with support from GIZ.
- SSLI NAMA TSU will support city administrations including its municipal public lighting agencies in preparing specific business plans for financing and implementation.
- Technical assistance for Municipal public lighting agencies on purchase, installation and maintenance of energy efficient (LED) street lighting.
- Technical assistance by the SSLI NAMA TSU for reform of street lighting tax policies / pricing regulations (Change of pricing mechanism currently applied to charge cities for their consumption).
- Development of training modules covering introduction of different lighting technologies, street lighting management systems, installation and maintenance, MRV
- Establishment of MRV data base / MRV implementation
- Development and testing of ESCO model - Enable cities to re-invest the gained savings more easily in cooperation with the private sector, including Energy Services Companies, or ESCOs.
- Technical Assistance to energy efficiency performance and safety standards for efficient lighting products (formulation of the EE standards as input for LED street light product performance standards).
- Awareness-raising on usage of energy-efficient street lighting technologies amongst relevant stakeholders

11. Project Cost

The additionally required financial support for the SSLI NAMA divides into 11,5 million USD for technology investments (NAMA financing component) and 7,5 million USD for technical assistance (NAMA technical component).
Format 2.2. Transport Sector
Proposal has been submitted to UNFCCC - Sustainable Urban Transport Initiative (SUTRI) 28

United Nations
Framework Convention on Climate Change

NAMA Seeking Support for Implementation

A Overview

A.1 Party Republic of Indonesia

A.2 Title of Mitigation Action Sustainable Urban Transport Initiative

A.3 Description of mitigation action

This Programme promotes sustainable urban transport in Indonesian Cities by implementing and monitoring measures in order to halt the increasing motorisation and reduce externalities of transportation. The pilot phase will start with the implementation of low-carbon mobility plans in three cities (Medan, Menado, Batam) as well as supporting activities on national level that aim at upscaling the policies of the pilot phase to more Indonesian cities. The NAMA covers the following activities:

At national level, development of a Policy Framework for Sustainable, Low-carbon Urban Transport, comprising a regulatory framework, co-financing of local measures, capacity building, practical guidelines for local planning, and overall MRV of the actions.

At the local or provincial level, development, implementation and MRV of Comprehensive Urban Low-carbon Mobility Plans. The sustainable transport policies covered include a tailor-made mix of ‘push’ and ‘pull’ measures for each city, including high quality public transport, non-motorised transport, parking management,

28 SUTRI NAMA concept development is supported by GIZ Transfer and GIZ SUTIP in cooperation with the Indonesia Ministry of Transportation
traffic management, spatial planning, alternative fuels and vehicle efficiency.

The preparation of the NAMA is ongoing and further details will be added during the next months.

A.4 Sector
- Energy supply
- Transport and its Infrastructure
- Residential and Commercial buildings
- Agriculture
- Waste management
- Industry
- Forestry
- Other <Pls enter Other text here>

A.5 Technology
- Bioenergy
- Energy Efficiency
- Hydropower
- Wind energy
- Carbon Capture and Storage
- Land fill gas collection
- Cleaner Fuels
- Geothermal energy
- Solar energy
- Ocean energy
- Low till / No till
- Other transport policies and measure

A.6 Type of action
- National/ Sectoral goal
- Strategy
- National/Sectoral policy or program
- Project: Investment in machinery
- Project: Investment in infrastructure
- Other: Local Government Involvement

A.7 Greenhouse gases covered by the action
- CO₂
- CH₄
- N₂O
- HFCs
- PFCs
- SF₆
- Other <Pls add in text here>

B National Implementing Entity

B.1.0 Name
Ministry of Transportation Indonesia (MoT)

B.1.1 Address
Staf Ahli Menteri Perhubungan,
Jl Medan Merdeka Barat No. 8, Jakarta
Pusat 10110, Indonesia
B.1.2 Contact Person  Mr. Wendy Aritenang  
B.1.3 Phone  +62811997391  
B.1.4 Email  aritenangwendy@yahoo.com  

B.3.1 Contact Person  Mr Harry Boediarto (alternative Contact Person 1)  
B.3.2 Address  Kepala Pusat PPKJT Kementerian Perhubungan,  
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B.4.1 Contact Person  Mr Djoko Sasono (alternative Contact Person 2)  
B.4.2 Address  Direktur BSTP, DitJen HubDar, Kementerian Perhubungan,  
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B.4.3 Phone  +628128348677  
B.4.4 Email  djokosas@dephub.go.id , and, djokosas@gmail.com  

C. Expected timeframe for the implementation of the mitigation action  
C.1 Number of years for completion  8  
C.2 Expected start year of implementation  2013  

D.1 Used Currency  million USD  

E Cost  
E.1.1 Estimated full cost of implementation  400 million USD to 800 million USD  
E.2 Estimated incremental cost of implementation  0.00  

F Support required for the implementation of the mitigation action  
F.1.1 Amount of financial support  300  
F.1.2 Type of required financial support  
☑ Grant  
☐ Loan (sovereign)  
☐ Loan (Private)  
☐ Concessional loan  
☐ Guarantee  
☐ Equity  
☐ Carbon finance  
☐ FDI
F.1.3 Comments on Financial Support  The required amount of financial support is still an indicative figure, it can not be accurately determined at this state of the process. The design of the local mitigation plans is ongoing and more accurate financing figures will be available by mid 2013.

F.2.1 Amount of Technological Support 20.00

F.2.2 Comments on Technological Support
Development of transport models for emission monitoring, promotion of efficient vehicles, alternative fuels such as CNG, LPG, biofuels or electric vehicles, intelligent transport systems, gas converters, catalytic converters.

F.3.1 Amount of capacity building support 10.00 USD

F.3.2 Type of required capacity building support
- Individual level
- Institutional level
- Systemic level
- Other <Pls enter Other text here>

F.3.3 Comments on Capacity Building Support
Capacity building is required for sound transport planning and integration, for operation and management, for surveys and data management for MRV, and for the development of guidelines. Sharing best practices nationally and internationally is another component. To strengthen the capacity of technical staff and decision makers workshops and trainings are required.

The preparation of the NAMA is supported by the International Climate Initiative (ICI) of the German Ministry for the Environment (BMU). It is envisaged to continue this technical cooperation with the Ministry of Transport and to support local governments in three pilot cities to support the implementation of local mitigation actions. Furthermore the NAMA can benefit from ongoing international support from various donors being active in Indonesian cities.

G Estimated emission reductions

G.1 Amount 5.00

G.2 Unit

G.3 Additional information (e.g. if available, information on the methodological approach followed):
This estimation is based on a top-down calculation using national transport statistics and development prognosis (National Mitigation Action Plan). The implementation of a comprehensive package of policies has a mitigation potential up to 25%. The calculation is based on the assumption that 10% of the urban population benefit from the NAMA and 15% of the emissions will be reduced until 2020 compared to BAU. At the time of submission a study is undertaken to further elaborate emission scenarios for the pilot cities. The estimated costs apply to the pilot phase only.

H.1 Other indicators of implementation Quality, capacity and accessibility of public transport (e.g. ridership, travel speed, information, network coverage, level of service), quality of walking and cycling facilities (km of high quality bicycle lane, modal share, parking management, no of onstreet-of-street parking spots, regulation, enforcement), emissions per vehicle and kilometer (to be completed)

I.1 Other relevant information including benefits for local sustainable development
The sustainable development benefits of this programme are substantial and include contribution to:

Air quality: reduction in emissions of air pollutants will at least be comparable to the CO2 reduction, and can be significantly larger in case alternative fuels are used.

Accessibility: the ‘avoid’ and ‘shift’ measures will significantly reduce congestion and improve accessibility, however for the longer term rebound effects should be taken into account. Therefore fuel price and parking strategies are required to counter such effects.

Equity: high quality and affordable public transport and non-motorised transport improve opportunities for poor people to access jobs (reduction in individual costs for transportation).

Road safety: the policies proposed may reduce accidents, however this requires careful planning and monitoring, e.g. for safe walking and cycling facilities.

City livability: the current transport infrastructure and its use have a substantial negative impact on quality of life due to fragmentation of neighbourhoods, noise and air pollution. The measures in this NAMA will significantly reduce such impacts and improve the living conditions for all city dwellers.

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

J.1 Relevant National Policies: National Development Plan, National Transport Master Plan (Land, Railways, Maritime, Aviation), RAN-GRK (National Mitigation Actions), RAD-GRK (Local Government Mitigation Actions)
Format 2.3. Waste Sector
Proposal has been submitted to International Funding - Vertical Nationally Appropriate Mitigation Actions (V-NAMAs)

**Vertical NAMA Project**

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<tbody>
<tr>
<td><strong>1. Project Title</strong></td>
<td>Vertical Nationally Appropriate Mitigation Actions (V-NAMAs)</td>
</tr>
<tr>
<td><strong>2. Project Type</strong></td>
<td>Technical Assistance</td>
</tr>
<tr>
<td><strong>3. Executing Agency</strong></td>
<td>Ministry of National Development Planning/Bappenas</td>
</tr>
<tr>
<td><strong>5. Duration</strong></td>
<td>September 2012-April 2015</td>
</tr>
<tr>
<td><strong>6. Location</strong></td>
<td>Jakarta</td>
</tr>
</tbody>
</table>

**7. Background:**

Nationally Appropriate Mitigation Actions (NAMAs) are voluntary country engagement proposals aimed at reducing or limiting Green House Gas (GHG) emissions. They are expected to be the main vehicle for mitigation action in developing countries under a future climate agreement.

The governments of numerous developing countries have begun in recent years to define Nationally Appropriate Mitigation Actions (NAMAs). To plan and implement such actions, it is essential to combine horizontal integration (mainstreaming climate concerns in emission sectors) and vertical integration (mobilising potential at different policy levels: national, provincial and local). Therefore, it is important to actively involve subnational actors at province and municipal level, as these have key competences in a number of sectors such as waste management. Although the need to involve these actors is undisputed, there is as yet a lack of replicable experience with corresponding approaches embracing several levels of government and the suitable management, planning and monitoring instruments.

Horizontal integration (mainstreaming climate concerns in emission sectors) is by now a recognised principle of climate policy in developing countries as elsewhere, whereas vertical integration (mobilising potential at different policy levels) is still nascent. Purely bottom-up approaches addressing individual municipalities can provide impetus, but tend to remain restricted to such measures that reside exclusively within the sphere of responsibility of local decision-makers. Top-down approaches, on the other hand, suffer...
from the enforcement deficit at subnational level that can also be observed in other policy fields. In both cases the potential residing in a mobilisation of competences and resources that embraces all policy levels is wasted.

In order to develop a practicable vertically integrated approach in NAMA development, GIZ has initiative to implement the V-NAMA Project in two countries, Indonesia (waste sector) and South Africa (building sector). The expected result of the V-NAMA work will be the production of practical guidelines containing a menu of options and a menu of tools for the design of V-NAMAs that meet MRV and financing requirements. In parallel, it will be ensured by convening expert workshops and dialogue events that the proposals elaborated by the project are discussed and disseminated internationally.

8. Objectives

To develop a practicable approach for vertically integrated NAMAs (v-NAMAs) on urban solid waste management sector

9. Scope of Projects

a. To develop bankable V-NAMAs proposals that meet MRV requirements for the urban solid waste management sector;
b. To prepare practical guidelines of vertically integrated NAMAs development;
c. To enhance capacity of related actors and institutions for the vertically integrated NAMAs development on the urban solid waste management sector.

10. Activities

1. Discussion with partners in order to clarify the expectations upon the project (including roles and contributions of both sides), gain a shared understanding of the project approach (goals, type and extent of measures planned) and consolidate project ownership at national level;
2. Estimation of the potential and barriers to implementing v-NAMA approaches in the waste sector to define the scope of action (subsector, region, cities, participants) – both in dialogue with the knowledge holders, national and sub-national key stakeholders;
3. Selection of pilot project locations by considering the linkages with relevant activities and financing plan in the national solid waste management;
4. Organisation of planning workshops with the participating national and sub-national actors in order to agree on the approach, to define appropriate activities and their sequence, and to clarify responsibilities.
5. Elaboration of the individual elements of vertically integrated NAMAs (baseline, business-as-usual scenario, mitigation options, abatement costs, co-benefits,
risk assessment, incentives, plan of action, MRV) in cooperation with national and international experts.

6. Elaboration of implementation and financing approaches (financing sources and mechanisms, burden-sharing, etc.);

7. Organisation of multi-stakeholders dialogue, seminar, training and workshop as capacity building measures in NAMAs development on urban solid waste sector for sub-national and national actors;

8. Development of bankable NAMAs proposal in urban solid waste sector by implementing vertically integrated approach and other relevant documents to be submitted to policy makers;

9. Documentation of the course and results of v-NAMAs development and compilation of the lessons learned;

10. Preparation of practical guidelines in v-NAMAs development in the urban solid waste sector;

11. Dissemination of project result and lesson learned in the international climate change discussion forum.
Acknowledgements

The development of this paper was coordinated by the Ministry of National Development Planning (BAPPENAS) particularly under the Directorate for Environment, Deputy for Natural Resources and Environment. A series of discussions involving the working groups under the Climate Change National Coordination Team representing relevant line ministries/institutions, and experts have been carried out to prepare the paper. It is our pleasure to extend our gratitude to all parties involved in the paper development from the start to its completion.

The development of Indonesia’s framework for NAMAs paper was supported by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) through its Policy Advice for Environment and Climate Change Program (PAKLIM) in cooperation with Sustainable Urban Transport Improvement Project (SUTIP) and TRANSfer Project and their support is gratefully acknowledged.

In Cooperation with:  

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