

NS-197 - Rural Development in Namibia through Electrification with Renewable Energies

Namibia

NAMA Seeking Support for Implementation

A Overview

A.1 Party

Namibia

A.2 Title of Mitigation Action

Rural Development in Namibia through Electrification with Renewable Energies

A.3 Description of mitigation action

The overall target of the NAMA is to support Namibia in achieving the goal defined in the Off-Grid Energy Master Plan(OGEMP), namely to provide access to electricity for regions, households and companies which are currently without access to electricity, as well as improving the share of re-newable energies(mainly using solar energy). The NAMA will reduce GHG emissions through the replacement of fossil fuels with renewable energies and will provide the conditions for income generations and new business opportunities.

The NAMA covers two interventions. Under Intervention A, mini grids will be established in rural communities. These mini grids will preferably be in the vicinity of schools and potential future tourism projects, such as Eco lodges. The mini grids will use renewable energy sources (solar, wind, hydro) and will provide electricity for lighting, radio and phone charging for households, for service and production activities in Rural Production Zones (RPZs), and for lighting and internet for public buildings. The mini grids to be financed will be selected using the approach of “reversed auctioning”. Under reversed auctioning, offers are accepted, starting from the cheapest, until the budget available for the specific auction is used up. In the case of the mini grids, auctioning on value for money. Proposals will be ranked by their standing in the Value for Money Index (VMI), calculated as “grant support requested (in N\$) per one OGEMP Point Score”.

Intervention B will support the installation of Energy Zones (EZs). Currently, so-called Energy Shops sell suitable, approved energy products and compatible appliances to consumers. These will be developed into the concept of Energy Zones, by adding a Rural Productivity Zone component.

In its first phase, the NAMA aims to establish 10 mini grids and 13 Energy Zones. This will provide electricity to around 1,400 households and around 8,500 people. Over the 15-year lifetime of the NAMA, emission reductions will reach around 20,000 tons of CO₂. Around 80 new enterprises will be established through these two interventions.

Capacity-building will be a key component in the implementation of the NAMA. Special emphasis will be given to identifying and supporting the

development of income-generating activities in the Rural Productivity Zones (RPZs), as this is the key to positive rural development. Another important component will be technical support during the identification and implementation of the different projects under the two interventions, as the aim is to implement technically sound projects with low operating costs.

The baseline scenario for this NAMA consists of two components, a GHG baseline and a sustainable development (SD) baseline. Setting the baseline scenario in this way allows all effects to be properly assessed and quantified through the monitoring activities described in the Measurement, Reporting and Verification (MRV) system. In the MRV, the UN Framework Convention on Climate Change's (UNFCCC) "Small-scale Methodology: AMS-I.L Electrification of rural communities using renewable energy, Version 03.0" will be used to monitor GHG emission reductions.

Total costs of the NAMA are estimated at around US\$13 million. This includes support to cover the investment costs of the two interventions as well as extensive capacity-building efforts. The Namibian Government is committed to providing around 30 per cent of the required funding, while the private sector is expected to contribute around 15 per cent. The remaining 55 per cent is expected to come from NAMA donors.

Implementation of the NAMA will be led by the Ministry of Environment as the NAMA Coordinating Authority (NCA). The Ministry of Environment has already been appointed as NAMA Approver/Focal Point to the UNFCCC and as the National Designated Authority (NDA) to the Green Climate Fund (GCF). The Environmental Investment Fund (EIF) will take on the role of NAMA Implementing Entity (NIE) and will be supported in technical issues by the Namibia Energy Institute (NEI). The Namibia Climate Change Committee (NCCC) will act as the supervisory board for the NAMA.

The two interventions of the NAMA will be implemented over a period of three and a half years, the NAMA will be supported by capacity building over a period of 5 years. Initial efforts will focus on securing national and international funding as well as establishing the institutional structure. Implementation of both interventions will take around two and a half years and will be supported by extensive capacity-building efforts. After the implementation of the interventions, the NAMA will operate over a period of 15 years.

A.4 Sector

<input checked="" type="checkbox"/> Energy supply	<input type="checkbox"/> Transport and its Infrastructure
<input type="checkbox"/> Residential and Commercial buildings	<input type="checkbox"/> Industry
<input type="checkbox"/> Agriculture	<input type="checkbox"/> Forestry
<input type="checkbox"/> Waste management	
<input type="checkbox"/> Other <input type="text"/>	

A.5 Technology

<input type="checkbox"/> Bioenergy	<input type="checkbox"/> Cleaner Fuels
<input type="checkbox"/> Energy Efficiency	<input type="checkbox"/> Geothermal energy
<input checked="" type="checkbox"/> Hydropower	<input checked="" type="checkbox"/> Solar energy

A.6 Type of action	<input checked="" type="checkbox"/> Wind energy <input type="checkbox"/> Carbon Capture and Storage <input type="checkbox"/> Land fill gas collection <input type="checkbox"/> Other <input type="text"/>	<input type="checkbox"/> Ocean energy <input type="checkbox"/> Low till / No till
	<input checked="" type="checkbox"/> National/ Sectoral goal <input type="checkbox"/> Strategy <input type="checkbox"/> National/Sectoral policy or program <input type="checkbox"/> Other <input type="text"/>	<input type="checkbox"/> Project: Investment in machinery <input type="checkbox"/> Project: Investment in infrastructure <input type="checkbox"/> Project: Other
A.7 Greenhouse gases covered by the action	<input checked="" type="checkbox"/> CO2 <input type="checkbox"/> N2O <input type="checkbox"/> PFCs <input type="checkbox"/> Other <input type="text"/>	<input type="checkbox"/> CH4 <input type="checkbox"/> HFCs <input type="checkbox"/> SF6

B National Implementing Entity

B.1.0	Name	Environmental Investment Fund (EIF)
B.1.1	Contact Person 1	Benedict Libanda
B.1.2	Address	
B.1.3	Phone	+264 61 431 7700
B.1.4	Email	blibanda@eifnamibia.com
B.1.5	Contact Person 2	Petrus Muteyauli
B.1.6	Address	
B.1.7	Phone	+264 811491944
B.1.8	Email	pmuteyauli@yahoo.co.uk
B.1.9	Contact Person 3	Paulus Ashili
B.1.10	Address	
B.1.11	Phone	
B.1.12	Email	Paulusashili80@gmail.com
B.1.13	Comments	

C Expected timeframe for the implementation of the mitigation action

C.1	Number of years for completion	5
C.2	Expected start year of implementation	2015

D Currency

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

E.1.1	Estimated full cost of implementation	14000000
E.1.2	Comments on full cost of implementation	The full cost of implementation include extensive capacity development support and capital investment for interventions A and B. The NAMA will be financed through national and international public funds and private sector contributions. See attachment in section "K" for further information.
E.2.1	Estimated incremental cost of implementation 0	
E.2.2	Comments on estimated incremental cost of implementation	

F Support required for the implementation the mitigation action

F.1.1 Amount of Financial support	8000000										
F.1.2 Type of required Financial support	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td><input checked="" type="checkbox"/> Grant</td> <td><input type="checkbox"/> Guarantee</td> </tr> <tr> <td><input type="checkbox"/> Loan (sovereign)</td> <td><input type="checkbox"/> Equity</td> </tr> <tr> <td><input type="checkbox"/> Loan (Private)</td> <td><input type="checkbox"/> Carbon finance</td> </tr> <tr> <td><input type="checkbox"/> Concessional loan</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other <input style="width: 150px;" type="text"/></td> <td></td> </tr> </table>	<input checked="" type="checkbox"/> Grant	<input type="checkbox"/> Guarantee	<input type="checkbox"/> Loan (sovereign)	<input type="checkbox"/> Equity	<input type="checkbox"/> Loan (Private)	<input type="checkbox"/> Carbon finance	<input type="checkbox"/> Concessional loan		<input type="checkbox"/> Other <input style="width: 150px;" type="text"/>	
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<input type="checkbox"/> Other <input style="width: 150px;" type="text"/>											
F.1.3 Comments on Financial support	It is expected that international support will be provided for the implementation of the NAMA. The international contribution is expected to be US\$ 8 million.										
F.2.1 Amount of Technological support	0										
F.2.2 Comments on Technological support	Technical support is included in the capacity development cost.										
F.3.1 Amount of capacity building support	2900000										
F.3.2 Type of required capacity building support	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td><input checked="" type="checkbox"/> Individual level</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional level</td> </tr> <tr> <td><input type="checkbox"/> Systemic level</td> </tr> <tr> <td><input type="checkbox"/> Other <input style="width: 150px;" type="text"/></td> </tr> </table>	<input checked="" type="checkbox"/> Individual level	<input checked="" type="checkbox"/> Institutional level	<input type="checkbox"/> Systemic level	<input type="checkbox"/> Other <input style="width: 150px;" type="text"/>						
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F.3.3 Comments on Capacity Building support	<p>The CapDev programme for implementation will support:</p> <ul style="list-style-type: none"> (i) implementing a NAMA working network and processes (technical and financial project cycle), including staff training; (ii) implementing NAMA related regulations and designing the contractual conditions; (iii) preparing NAMA project documentation (application forms, call and tender documents, pro-curement rules, monitoring, evaluation and reporting forms, etc.); 										
F.4 Financial support for implementation required	<input type="checkbox"/>										
F.5 Technological support for implementation required	<input type="checkbox"/>										
F.6 Capacity Building support for implementation required	<input type="checkbox"/>										

G Estimated emission reductions

G.1 Amount	
G.2 Unit	<input style="width: 100px;" type="text" value="MtCO2e"/>
G.3 Additional information (e.g. if available, information on the methodological approach followed)	<p>To take account of suppressed demand the parties to the UNFCCC asked the Executive Board of the Clean Development Mechanism to explore the possibility of including in the baseline a scenario where future anthropogenic emissions by sources are projected to rise above current levels, due to the specific circumstances of the host party (UNFCCC, 2012). This principle can be specifically applied to the methodology AMS-I.L: “A suppressed demand situation is applicable when a minimum service level²¹ to meet basic human needs²² was unavailable to the end user of the service prior to the implementation of the project activity. Hence, these guidelines are applicable when basic human needs were not met.</p> <p>In the Namibian situation, the application of suppressed demand translates into the baseline scenario assuming that all people’s basic human needs are met through the use of the fossil fuel</p>

technologies previously mentioned.

Significant GHG emissions arise from the use of fossil fuels in the baseline scenario. The emission factors included in the CDM methodology AMS-I.L. were determined in a conservative manner through the application of emissions factors gathered from a variety of sources such as information from CDM projects, research, and the Intergovernmental Panel on Climate Change (IPCC) (Pöyry, 2010).

As per AMS-I.L., the following are the baseline emission factors for each tranche of the annual amount of renewable electricity consumed per consumer during the crediting period:

- a. For the first 55 kWh of renewable electricity consumed by each consumer the baseline emission factor is 6.8 tons of carbon dioxide per MWh (tCO₂/MWh);
- b. For the facility consumption more than 55 kWh but equal to or less than 250 kWh, the baseline emission factor is 1.3 (tCO₂/MWh);
- c. For the facility consumption beyond 250 kWh, the baseline emission factor is 1.0 (t CO₂/MWh).

The distinct emission factors for three levels of energy consumption take into consideration the baseline technologies used to meet basic household lighting energy needs (i.e. 15W bulbs x 5 hrs/day x 365 days = 55 kWh) (Pöyry, 2010); more extended household energy needs/micro enterprise needs (i.e. 100W fan or TV x 5 hrs/day x 365 days = 183 kWh) (Pöyry, 2010), or public buildings and/or small, medium and micro enterprises (SMMEs).

In light of the challenges for the NAMA actors of monitoring electricity generation per facility, a simplified and conservative baseline emission factor is chosen. For both interventions this will be 1.0 tCO₂/MWh.

H Other indicators

H.1 Other indicators of implementation

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

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

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

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

See attachment in section "K" for the NAMA organizational diagram

I Other relevant information

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

In addition to GHG emissions, the MRV system for this NAMA will monitor the impact of the NAMA interventions on selected Sustainable Development (SD) indicators. The selection of the SD indicators was done using the Sustainable Development Evaluation Tool (SD Tool) developed by UNDP (UNDP, 2014d). The SD Tool divides the SD indicators into four different domains: environment; social; growth and development; and economic.

See the attachment in section "K" for further information on the SD tool.

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

J.1 Relevant National Policies
J.2 Link to other NAMAs

K Attachments

K Attachments	Title	Description
K.1 Attachment description K.2 File	Contributions to NAMA Financing by Year and Activity.pdf NAMA organizational diagram.pdf Sustainable Development tool.pdf	
	<input type="text"/>	<input type="button" value="Browse..."/>

L Support received

L.1 Outside the Registry
L.2 Within the Registry

Support provided	SupportType	Amount	Comment	Date
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