

NS-336 - Off-grid Renewable Energy Solutions in Rural Suriname

Suriname

NAMA Seeking Support for Implementation

A Overview	
A.1 Party	Suriname
A.2 Title of Mitigation Action	Off-grid Renewable Energy Solutions in Rural Suriname
A.3 Description of mitigation action	The overall purpose of the NAMA is to contribute in combating the effects of climate change through mitigating GHG-emissions from fossil fuel burning, as well as to sustainable development benefits such as poverty alleviation, access to clean and sustainable energy and income generation. This will be done by establishing energy electrification solutions in the interior enabling income-generating activities and thus leading to sustainable development in rural Suriname. The Government of Suriname is committed to tackle the significant disparity between the coastal zone and the interior in Suriname -where the interior faces significant levels of deprivation, including access to services such as electricity - by bringing renewable energy solutions to the interior, such as PV mini-grids as they are able to stabilize sustainable development in rural Suriname and at the same time contribute in combating the effects of climate change through mitigating GHG-emissions from fossil fuel burning. The NAMA area consists of two villages in the interior along the eastern border of Suriname which are projected as model townships, named Sarama and Stoelmanseiland. Together with small communities living on the nearby low lying scattered small islands which are also part of the NAMA area, the total population is 6000-8000 people. These two main villages and most of the small communities on the low lying scattered small islands have an existing fossil-fuel based off-grid electricity supply. The NAMA covers a Readiness component and an Implementation component. The Readiness component aims at measures to strengthen the country's regulatory and policy framework as well as building national capacities and skills for the NAMA programme. The second component, focuses on the implementation of the NAMA through two interventions A and B, supplemented with building capacity and awareness programs. Under intervention A, two hybrid mini-grids (solar-diesel), and two Rural Productivity Zones (RPZ) will be established. The hybrid mini-grids will provide electricity for lighting, cooling (fridge), phone charging, and TV/ radio as well as for services and activities in the RPZ. The RPZ will be supported by rural women organizations. In the NAMA area, rural women are the backbone of the sustainable community livelihoods. Intervention B comprises of four ground mounted solar plants connected to the existing mini grid creating a hybrid system based on diesel-solar serving facilities such as schools, medical centers and churches. In addition, solar systems are established on small islands with no facilities and very small communities, providing household energy access services (phone charging, battery charging and swapping, portable light charging) and information and communication services (internet, printing, TV, phone, etc.). The NAMA will enhance the socio-economic development in the interior of Suriname through both interventions which allow for income-generating activities and create business opportunities for the population in the targeted area. The NAMA will stimulate participation of the private sector by creating a regulatory, policy and market environment that enables public-private-partnership (PPP) in the renewable energy (RE) sector.
A.4 Sector	☒ Energy supply ☐ Transport and its Infrastructure ☐ Residential and Commercial buildings ☐ Industry ☐ Agriculture ☐ Forestry ☐ Waste management ☐ Other
A.5 Technology	☐ Bioenergy ☐ Cleaner Fuels ☐ Energy Efficiency ☐ Geothermal energy ☐ Hydropower ☒ Solar energy ☐ Wind energy ☐ Ocean energy ☐ Carbon Capture and Storage ☐ Low till / No till ☐ Land fill gas collection ☐ Other
A.6 Type of action	☒ National/ Sectoral goal ☐ Project: Investment in machinery ☐ Strategy ☐ Project: Investment in infrastructure ☒ National/Sectoral policy or program ☐ Project: Other ☐ Other
A.7 Greenhouse gases covered by the action	☒ CO2 ☐ CH4 ☐ N2O ☐ HFCs ☐ PFCs ☐ SF6 ☐ Other
B National Implementing Entity	

B.1.0	Name	Ministry of Natural Resources. Ministry of Spatial Planning and Environment Ministry of Regional Planning.
B.1.1	Contact Person 1	Ministry of Natural Resources, Senior Policy Officer, Mr. Rene Pika
B.1.2	Address	Mr. Dr. J. C. de Mirandastraat 13-15, Paramaribo
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B.1.5	Contact Person 2	Ministry of Spatial Planning and Environment, Legal and Policy Advisor Ms. Ivette Patterson
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B.1.7	Phone	+597 472610 ext.234
B.1.8	Email	Secretariaat.minrom@gov.sr
B.1.9	Contact Person 3	Ministry of Regional Development and Sport, Permanent Secretary, Mr. Mavrick Boejojoe
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B.1.13	Comments	

[Add Additional Entity](#)

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	2021

D Currency

D.1	Used Currency	USD ▼
Conversion to USD: 1		

E Cost

E.1.1	Estimated full cost of implementation	12,988,000
Conversion to USD: 12,988,000		
E.1.2	Comments on full cost of implementation	The NAMA finance model is designed to be sustainable and affordable, accepted by the private sector, and to leverage as much private sector investment as possible with limited donor resources. Hence, the full cost of implementation includes not only extensive capacity development, but also a Rural Electrification Fund to catalyze the national and international finance to result in project implementation in the public/private sector.
E.2.1	Estimated incremental cost of implementation	
Conversion to USD: 0		
E.2.2	Comments on estimated incremental cost of implementation	NA

F Support required for the implementation the mitigation action

F.1.1	Amount of Financial support	9,988,000
Conversion to USD: 9,988,000		
F.1.2	Type of required Financial support	☒ Grant ☐ Loan (sovereign) ☐ Loan (Private) ☐ Concessional loan ☐ Other ☐ Guarantee ☐ Equity ☐ Carbon finance
F.1.3	Comments on Financial support	Total amount of Financial support is expected to be US\$9,988,000 . Support is required to cover the total cost for policy development and capacity building as well as for the full implementation of both international contribution is expected to be US\$ US\$ 9,988,000.
F.2.1	Amount of Technological support	
F.2.2	Comments on Technological support	Technical support is included in both the Readiness component as well as the Implementation component.
F.3.1	Amount of capacity building support	1,600,000
Conversion to USD: 1,600,000		
F.3.2	Type of required capacity building support	☒ Individual level ☒ Institutional level ☒ Systemic level ☐ Other
F.3.3	Comments on Capacity Building support	The Readiness Component includes measures such as technical assistance activities requiring external expertise and assistance, and capacity-building activities to build national capacities and skills for the NAMA programme. The Readiness Component will be undertaken during the first three years of implementing the NAMA programme.

aimed at beginning the process of strengthening the country's regulatory and policy framework. These activities will promote credibility and viability instrument donor funding.

The capacity development needs in the Readiness Component are to ensure a smooth implementation of the interventions A + B and their activities. Thus, capacity technical assistance and awareness trainings for the institutions involved, including government ministries and the private sector, are needed. Campaigns, awareness trainings will be conducted to create awareness among stakeholders (including local people) about clean energy in rural Suriname.

Capacity building is also a key component in the implementation of the NAMA in addition to technical assistance, as the aim is to implement technically sound

G Estimated emission reductions

G.1 Amount	The NAMA will achieve 0.02457 Mt CO ₂ eq in avoided CO ₂ eq emissions over its total lifetime.
G.2 Unit	MtCO ₂ e v
G.3 Additional information (e.g. if available, information on the methodological approach followed)	The GHG emission reductions which will be achieved by the NAMA interventions are calculated by comparing actual (project) emissions with the emissions in the baseline scenario. The system boundary of the project activity is defined by the intervention of hybrid mini grids; thus the project boundary encompasses the hybrid mini grids electricity generation and the consumer of the electricity. The total GHG emission reductions of this NAMA in a given year y (ER_y) are the sum of the emissions reductions achieved through implementation of both interventions (A + B). The determination of the GHG emission baseline is based on the UNFCCC "Small-scale Methodology AMS-III.B.L: Integrated methodology for electrification of small-scale version 01.0 (UNFCCC, 2015). This methodology is applicable in situations where consumers that were supplied with electricity from a fossil based individual or fossil fuel based mini-grid prior to the implementation of the project are supplied with electricity from the project activity (e.g. moving from carbon intensive fossil fuel based mini-grid or mini grid). The NAMA Implementation phase represents such a situation and project activity. This methodology is applicable to electrification of a community of consumers which is achieved through the following technology/measure that is applicable activity, namely 'Hybridization of existing fossil fuel powered mini-grids using renewable energy systems'. Within this methodology, the issue of 'suppressed demand' is taken into consideration. To take account of suppressed demand, the parties to the UNFCCC Executive Board of the Clean Development Mechanism to explore the possibility of including in the baseline a scenario where future anthropogenic emissions 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 method III.B.L. In this case, basic human needs are not met, as the households within the NAMA area only have access to electricity for short time periods, thereby meeting the basic lighting demands of the household (UNFCCC, 2012). In the case of Suriname, the application of suppressed demand translates into the baseline scenario assuming that all people's basic human needs are met through the fossil fuel technologies as previously mentioned. The baseline emissions are calculated through classification of the consumers, determining the consumption of each consumer type and baseline emissions per consumer type and sub-group. Taken into account that the villages/ communities within the NAMA area have different load factors, an average emission factor of 1.0 is calculated based on the diesel generators in these communities.

H Other indicators

H.1 Other indicators of implementation	The indicators below will be used to monitor the targets and estimate the NAMA's impacts on electricity access, renewable energy/GHG emission reductions and SD indicators. Both Ministries of Regional Development and Natural Resources are responsible for the monitoring of the indicators. The total impact of the interventions A + B is the sum of all implemented mini grids. Monitoring Indicators for NAMA impact are: • Installed Capacity for each hybrid mini grid system • Proxy RE technology • Annual electricity production from each plant • Annual GHG saving- avoidance • Number of public buildings electrified • Number of households electrified • Number of people with access to RE electricity • Number of educational institutions electrified • Number of new income/generating activities (enterprises) • Number of new jobs (total) • Number of new jobs for women The coordination and management of the NAMA requires an institutional structure which will be embedded in national and sectoral policies and the institutional arrangement for this NAMA will be effective in order to avoid conflicts between institutions and to ensure all important aspects, such as responsibilities, are addressed. The institutional structure for the NAMA in Suriname will coordinate and manage the process of implementation and existing organizational systems which are already in place, making a smooth implementation of the NAMA possible. 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).
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I Other relevant information

I.1 Other relevant information including co-benefits for local sustainable development	Sustainable Development (SD) indicators are also present in the MRV of the NAMA. The selection of the SD indicators was done using the Sustainable Development Indicators Evaluation Tool (SD Tool) developed by UNDP (UNDP MDG Carbon, 2014). The SD Tool divides the SD indicators into four different domains: social, growth and economic, and institutional. For 'Social (Environment)' the indicators 'Livelihood', 'Poverty alleviation' and 'Peace' are used. For 'Growth' the following indicators are used: 'Access to clean energy', 'Health', and 'Education and Empowerment of women'. For 'Economic' the following indicators are used: 'Income generation/expenditure reduction/ balance of payments' and 'Job creation (number of men and women employed)'. For 'Institution' the indicator 'Policy and planning' and 'Land and regulation' are used. Monitored SD parameters are: ■ Number of households with access to RE ■ Number of health clinics electrified ■ Number of schools electrified ■ Number of new jobs for women ■ Share of household income spent on electricity ■ Number of new jobs per household ■ Number of capacity development workshops and awareness raising campaigns ■ National Coordinating Authority (NCA) organisation structure ■ Overall operation management system NCA ■ NAMA Implementing Entity (NIE) operation management system ■ NAMA executing entities (NEE) operation management system
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The monitoring period is defined for 15 years from starting after implementation of both interventions. With this NAMA, the GoS will initiate a transformational change in the rural energy sector, but monitoring the major impacts of scaling-up and replicating good practice whole of rural Suriname is only possible over a medium and long-term perspective.

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

J.1 Relevant National Policies Suriname's NDC 2020 - 2030

The NDC includes mitigation actions in four out of six emitting sectors: forests, electricity, agriculture, and transport. Together they cover an estimated 70 % of the country's emissions. In the energy-sector, the conditional measures are: 1) Share of electricity from renewable sources is above 35 % by 2030. 2) Adoption of a Renewable Energy Act to provide the legal, economic and institutional basis for the promotion of the use of renewable energy resources, including as part of rural electrification and the connection of off-grid systems to the national grid, and in the form of solar PV systems, mini-grids, and micro- and small-scale hydropower plants.

Policy Development Plan 2017-2021

With regards to energy, the OP aims at the following:

- Energy access for everyone in the country.
- Promoting energy efficiency.
- Stimulating the use of renewable energy.

The longer-term goal is that the electricity sector functions within the legal framework as set and in line with the national electricity strategy and national generation sources identified therein, supplies sustainable electricity to families, companies and other buyers at the lowest possible prices.

Suriname's Energy Policy Plan 2013 – 2033

The National Energy Policy enables Suriname to develop a green and sustainable economy through wide-scale renewable energy penetration. The Policy also details the strategies implemented to ensure effective promotion of conservation and efficiency in the use of energy resources amongst all sectors of the society, thereby creating a more sustainable Suriname. Implementation of the National Energy Policy would ensure that, by 2033, all citizens have access to energy and there is energy security advancing the economy of the country, international competitiveness and a marked reduction in poverty.

Integrated Rural Development Program 2017-2021

The Integrated Rural Development Program is primarily focused on rural development and decentralization. Rural development encompasses important aspects such as : agribusiness, infrastructure, eco-tourism, small- and medium enterprises, microfinancing, energy & potable water, waste management, education & healthcare. The ultimate Program are ending poverty, securing food security and safety, promoting inclusive and sustainable economic growth and combating climate change. With the development of Town centers in 4 areas including Stoelmanseiland and Snesi Kondre, the Government of Suriname aims at improving the living conditions of the local community by core productivity spurring economic growth and creating job opportunities.

J.2 Link to other NAMAs (none)

K Attachments

K Attachments	
Title	Description
<u>Suriname Second NDC 2020.pdf</u>	Suriname's NDC 2020 - 2030 The NDC includes mitigation actions in four out of six emitting sectors: forests, electricity, agriculture, and transport. Together they cover an estimated 70 % of the country's emissions. For the energy-sector, the conditional measures are: 1) Share of electricity from renewable sources is above 35 % by 2030. 2) Adoption of a Renewable Energy Act to provide the legal, economic and institutional basis for the promotion of the use of renewable energy resources, including as part of rural electrification and the connection of off-grid systems to the national grid, and in the form of solar PV systems, mini-grids, and micro- and small-scale hydropower plants.
<u>SurinamePolicy-Development-Plan2017-2021-PartI.pdf</u>	Policy Development Plan 2017-2021 With regards to energy, the OP aims at the following: -Energy access for everyone in the country. -Promoting energy efficiency. -Stimulating the use of renewable energy. The longer-term goal is that the electricity sector functions within the legal framework as is set and in line with the national electricity strategy and national generation sources identified therein supplies sustainable electricity to families, companies, and other buyers at the lowest possible prices.

K.1 Attachment description

K.2 File No file chosen

L Support received

L.1 Outside the Registry

L.2 Within the Registry

Support provided	SupportType	Amount	Comment	Date
No records to display.				