



# PROJECT IDENTIFICATION FORM (PIF) <sup>1</sup>

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

## PART I: PROJECT IDENTIFICATION

Project Title:	Development of Renewable Energy, Energy Efficiency and Electrification of Suriname		
Country(ies):	Suriname	GEF Project ID: <sup>2</sup>	
GEF Agency(ies):	IADB (select) (select)	GEF Agency Project ID:	SU-T1056
Other Executing Partner(s):	The Ministry of Natural Resources (MNH) - Suriname	Submission Date:	2011-03-18
GEF Focal Area (s):	Climate Change	Project Duration (Months)	72
Name of parent program (if applicable): ➤ For SFM/REDD+ <input type="checkbox"/>		Agency Fee (\$):	440,000

### A. FOCAL AREA STRATEGY FRAMEWORK<sup>3</sup>:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
CCM-3 (select)	3.1 Favorable policy and regulatory environment created for renewable energy investments	Renewable energy policy and regulation in place	GEFTF	0	3,500,000
CCM-3 (select)	3.2 Investment in renewable energy technologies increased (solar, hydro, bioenergy)	Renewable energy capacity installed (3.7 MW)  Electricity and heat produced from RE sources (16,177 MWh/year)	GEFTF	4,300,000	12,775,000
CCM-2 (select)	2.1 Appropriate policy, legal and regulatory frameworks adopted and enforced	Energy efficiency policy and regulation in place  Energy savings achieved (8,011 MWh/year)	GEFTF	0	4,525,000
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)	Others		(select)		
Sub-Total				4,300,000	20,800,000
Project Management Cost <sup>4</sup>			GEFTF	<b>100,000</b>	700,000
<b>Total Project Cost</b>				4,400,000	21,500,000

### B. PROJECT FRAMEWORK

<sup>1</sup> It is very important to consult the PIF preparation guidelines when completing this template.

<sup>2</sup> Project ID number will be assigned by GEFSEC.

<sup>3</sup> Refer to the reference attached on the [Focal Area Results Framework](#) when filling up the table in item A.

<sup>4</sup> GEF will finance management cost that is solely linked to GEF financing of the project.

<b>Project Objective: This project will promote the use and development of renewable energy (RE) and energy efficiency (EE) in Suriname</b>						
<b>Project Component</b>	<b>Grant Type</b>	<b>Expected Outcomes</b>	<b>Expected Outputs</b>	<b>Trust Fund</b>	<b>Indicative Grant Amount (\$)</b>	<b>Indicative Cofinancing (\$)</b>
Component I: Technical, institutional and regulatory strengthening to promote the use of RE technologies and support for pilot project implementation	TA	Favorable policy and regulatory environment created for renewable energy investments	Proposals for the update/amendment of the legal, institutional and regulatory framework of the energy sector affecting the development of RE initiatives	GEFTF	0	3,500,000
	TA	Assesment of RE potential and development of a Wind Map of Suriname.	Suriname Wind Map At least 10 weather monitors installed to asses the potential for RE.	GEFTF	300,000	1,000,000
	Inv	On-grid solar PV systems demonstrated as a sustainable option for power generation. GHG emissions reduced	473 kW of on-grid solar PV systems installed in urban areas  (Specific targets for GEF funding and counterpart funds are attached in an Excel file)	GEFTF	750,000	1,850,000
	Inv	Power generation from bio-fuels demonstrated in Suriname. GHG emissions reduced.	A 300 kW pilot power generation plant installed	GEFTF	0	1,400,000
Component II: Technical, institutional and regulatory strengthening to promote the use of EE initiatives and support for pilot project implementation	TA	Favorable policy and regulatory environment created for energy efficiency investments	Proposals for the update/amendment of the legal, institutional and regulatory framework of the energy sector affecting the development of EE initiatives  Evaluation of the potential for EE and proposal of EE measures	GEFTF	0	1,000,000
	(select)			(select)		
	Inv	Energy consumption reduced, and EE practices demonstrated in Suriname	EE practices implemented and demonstrated, mainly by using efficient lighting (at least 50,000 CFLs, 875 street lighting lamps) and 1,250 m2 of Solar Water Heaters.  (Specific targets for GEF funding and counterpart funds are attached in an Excel file)	GEFTF	0	3,050,000
Component III:	Inv	Solar renewable energy	Off -grid renewable	GEFTF	600,000	1,200,000

Support for the rural electrification (off and on grid) of the hinterlands and the interior		technologies demonstrated as an option for the electrification of the Hinterlands. GHG emissions reduce	systems and hybrid (PV-diesel) systems installed. (at least 225 kW of PV panels)  (Specific targets for GEF funding and counterpart funds are attached in an Excel file)			
	Inv	Hydro energy technologies demonstrated as an option for sustainable development. GHG emissions reduced.	On-grid hydro power in the Hinterlands (At least 2,7 MW of micro hydro plants installed)  (Specific targets for GEF funding and counterpart funds are attached in an Excel file)	GEFTF	2,650,000	6,850,000
Component IV: Dissemination	TA	Results of the project are disseminated, and the institutional strengthening and capacity building of the government and local communities through the National Platform for Stakeholder Involvement are increased.	Public education and public awareness campaign Seminars. Workshops and training sessions to increase skills and capacities. Suriname's stakeholders such as Government, private sector entrepreneurs, and local communities are engaged with the project.	GEFTF	0	950,000
Sub-Total					4,300,000	20,800,000
Project Management Cost <sup>5</sup>				GEFTF	100,000	700,000
<b>Total Project Costs</b>					4,400,000	21,500,000

**C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)**

Sources of Cofinancing	Name of Cofinancier	Type of Cofinancing	Amount (\$)
GEF Agency	Inter-american Development Bank (IADB)	Soft Loan	18,200,000
GEF Agency	Inter-american Development Bank (IADB)	Grant	1,400,000
National Government	Ministry of Natural Resources	In-kind	400,000
GEF Agency	Inter-american Development Bank (IADB) Multilateral Investment Fund (MIF)	Grant	1,500,000
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
<b>Total Cofinancing</b>			21,500,000

**D. GEF/LDCF/SCCF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY<sup>1</sup>**

<sup>5</sup> Same as footnote #3.

<b>GEF Agency</b>	<b>Type of Trust Fund</b>	<b>Focal Area</b>	<b>Country Name/Global</b>	<b>Grant Amount (a)</b>	<b>Agency Fee (b)<sup>2</sup></b>	<b>Total c=a+b</b>
IADB	GEF TF	Climate Change	Suriname	4,400,000	440,000	4,840,000
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
<b>Total Grant Resources</b>				4,400,000	440,000	4,840,000

<sup>1</sup> In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table

<sup>2</sup> Please indicate fees related to this project.

## **PART II: PROJECT JUSTIFICATION**

### **A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:**

#### A.1.1 the [GEF focal area/LDCF/SCCF](#) strategies:

The proposed project is presented under the focal area of Climate Change, with a very strong impact on biodiversity and land use degradation, as the project reduces the pressure on tropical forests as a source of energy by promoting the use of renewable energies such as solar, wind and mini hydro power. The proposed project is presented under the Climate Change focal area and is consistent with GEF's Climate Change Mitigation Strategy for GEF-5 (2010-2014) consisting of the following objectives:

1. Promote the demonstration, deployment, and transfer of innovative low-carbon technologies.
2. Promote market transformation for energy efficiency (EE) in industry and the building sector.
3. Promote investment in renewable energy (RE) technologies.

In terms of biodiversity protection, the project will reduce the pressure on tropical forests, particularly of the Hinterlands, which houses thousands of species, therefore contributing to the protection of these ecosystems. This is also valid for the reduction of Land Degradation, as less forested land is clear-cut for wood as a source of energy.

#### A.1.2. For projects funded from LDCF/SCCF: the LDCF/SCCF eligibility criteria and priorities:

#### A.2. National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NIPs, PRSPs, NPFE, etc.:

The first National Communication (NC) under the United Nations Framework Convention on Climate Change (UNFCCC) identified that the main risks in Suriname are related to the flooding risks. Suriname is particularly vulnerable to the negative impacts of climate change due to its characteristic of low lying coastal zone. Although Suriname barely emits greenhouse gases, sea level rise may inundate large parts of the coastal zone. Some mitigation and adaptation measures were proposed, such as integrated coastal zone management, and dyke building. This NC also stated that "An increase in diversification and energy efficiency in all sectors of economic activity is needed" to reduce green-house-gas emissions. Moreover the NC identified that "*energy efficiency can be improved throughout the entire process of the energy generation to energy supply. By using cleaner energy and new technologies, especially in the Hinterlands, decrease of CO2 emissions will certainly be gained. Among these technologies are the Micro-Pico hydropower, photovoltaic systems and wind generators. In villages along the rivers in the hinterland, diesel generators could be (partly) replaced by establishing micro hydropower stations and/or in combination with photovoltaic*" The NC also identifies the need to improve the management of the energy in the demand sector (Energy Efficiency) and the potential for the use of thermo solar applications. This GEF project supports all of these initiatives, which are also in line with the Government Strategy towards 2020

### **B. PROJECT OVERVIEW:**

#### B.1. Describe the baseline project and the problem that it seeks to address:

**Need for a Sustainable Energy Framework, including RE and EE.** The Suriname power sector consists of a number of individual power systems. Some of these systems are interconnected while others operate as electrical islands. In the Paramaribo area, electric power is supplied by means of hydroelectric power (a 180 MW power plant that supplies around 75%

of the energy) and diesel generators (66 MW of diesel generation). Demand for electricity in Suriname is continuously rising as a direct effect of economic development. Between 1970 and 2009 the demand in the EPAR system has risen from 22 MW to 170 MW (from 123 GWh/year to around 1,000 GWh/year). Forecasts show that peak load for Suriname as a whole will grow to 503 MW in the year 2023 and load shedding is expected to continue due to the lack of adequate investments in power generation. Power generation costs of the Electricity Company of Suriname (EBS, acronym in Dutch) are estimated at 0.10US\$/kWh, while the average tariff is 0.07US\$/kWh, resulting in a direct government subsidy. EBS' low liquidity position requires financial support from the Government of Suriname (GSU). An assessment commissioned by the Ministry of Natural Resources (MNH, acronym in Dutch), and funded by the IDB, concluded that the existing regulatory framework has limitations to assure the attraction of large capital funds to finance new capacity. Moreover, **new demand is commonly covered by fossil fuel generation and there is no policy in place to support the development of hydro resources**, impacting the economic and environmental sustainability of the power sector. Therefore, appropriate measures need to be taken to accommodate future demand growth at a secure and reliable level, ensuring at the same time economical and environmental sustainability. Hence, a new energy framework that supports the use of Renewable energy and Energy Efficiency needs to be developed for Suriname. This new sustainable energy framework will be supported through an IDB's loan to the GOSU (SU-L1022).

**Rural Electrification.** Electrification level in Suriname is estimated at 85%: 79% of the population is connected to the EBS system. In the Hinterlands an estimated total of 111 villages (6% of the population) have a diesel unit installed by the Department for Rural Energy (DEV) of the MNH. About 93 villages are provided with diesel fuel by DEV on a monthly basis. The diesel is provided free of charge, and there is no tariff regime in place. Every month about 150,552 liters of diesel are transported to the villages; the total operating costs for DEV in 2007 was estimated to be \$0.63 per kWh. Moreover, the supply of power is limited to about 5 to 6 hours per day. The increasing costs of fuel prices put additional pressure on the security of supply and biomass (forest), and on government resources. Moreover, for villages that are located very far inland, the use of diesel generators also becomes unfeasible due to the cost of fuel transportation and the difficulty of maintenance.

**Base Project.** The base project will be part of a National Strategy to initiate the recovery of the energy sector and to shape the conditions for its sustainability. The initiative will receive IDB's support and will begin with the assessment of the energy regulatory framework in order to identify gaps and institutional weaknesses and recommend measures to ensure the sustainable development of the sector and the promotion of RE and EE projects to supply the new demand (IDB Technical Cooperation SU-T1055). The implementation of the identified recommendations will require Government commitments and IDB support. New financing from IDB in 2012-2013 will contribute to implement the set of institutional, legal and regulatory recommendations identified (IDB Loan SU-L1022). The promotion of new investments in generation, transmission and distribution of electricity using low carbon technologies will be part of IDB' intervention (IDB Loan SU-L1009). The GEF initiative will be part of the National Strategy and will add resources to secure the implementation of selected low carbon technologies with pilot projects at small and medium scale, where the latter, would be connected to the distribution grid. Through the dissemination of successful experiences the GEF project will encourage the scale-up of key projects using IDB's support and funding. In addition to GEF contribution, a Technical Cooperation funded by the IDB, will establish suitable schemes for rural electrification, empowering local communities with operation and maintenance of low carbon technologies (Technical Cooperation funded by IDB-MIF funds).

- B. 2. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF financing and the associated



[global environmental benefits](#) (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

The base project is focused on the development of a Sustainable Energy Framework for Suriname through the promotion of RE and EE. GEF funds will add resources to implement recommendations of the SEFS and pilot projects in RE and EE. IDB-GSU funds will contribute to the entire process: feasibility analysis, pilot and scale up of successful RE and EE projects, and the dissemination of main findings.

GEF funds are focused specially on those activities in which large investments are required and where most CO<sub>2</sub> emissions can be achieved. Hence, 94% of GEF funds will be used to finance Renewable Energy, especially in rural areas (74% of GEF funds), where successful pilot projects will displace diesel generation. These pilot projects are key to demonstrate the technology and facilitate the implementation of the co-financing from IDB. The other 6% will be used for weather monitor stations. In each activity, GEF funds represent about 30% of total funds.

Four main activities are envisaged (which include both the base project and the GEF project): (i) Technical, institutional and regulatory strengthening to promote the use of RE technologies and support for pilot projects; (ii) Technical, institutional and regulatory strengthening for the promotion and development of EE initiatives in urban areas; (iii) Support the use of RE for the electrification of the Hinterlands; and (iv) Dissemination of findings. The project will achieve its objectives through the following components:

**Component I: Technical, institutional and regulatory strengthening to promote the use of RE technologies and support for pilot project implementation (GEF US\$ 1,05 million, co-finance US\$ 7,75 million).** This component, will assist the Government to strengthen its technical, institutional and regulatory capacities by financing: (i) assessment of the legal, institutional and regulatory framework of the electricity sector affecting the development of RE initiatives; (ii) preparation of a set of proposals for improvement/amendments to the existing regulatory framework that would promote RE as a measure to reduce the pressure on wood for energy purposes, therefore contributing to conservation of forests and biodiversity in Suriname, particularly in the rural areas covered with large extension of forests and hence reducing the degradation of that land; (iii) installation of weather monitoring stations, that will be installed in (a) coastal areas to gather information over a number of years and complement existing wind and solar measurements, and to develop a Wind Map of Suriname; and (b) in the Hinterlands to quantify solar radiation as well as hydrological measurements to evaluate the potential for small (micro and/or pico) hydro power plants, in order to have meaningful data, measurements will also be performed over a number of years, and; (iv) installation of RE pilot projects in selected buildings in the coastline urban areas, initially PV systems are considered, however, small scale wind systems could also be considered for coastal areas if measurements indicate that this technology will enable larger CO<sub>2</sub> reductions; (v) assessment of the barriers and potential for the further deployment of Solar Water Heaters (SWH); (vi) assessment of the potential for the deployment of other solar thermal applications; (vii) assessment of the potential for bio-energy (BE); and (viii) installation of a BE pilot project.

**Component II: Technical, institutional and regulatory strengthening for the local promotion and development of EE initiatives in urban areas (GEF US\$ 0 million, co-finance US\$ 4,05 million):** Suriname's energy matrix is mostly based on hydro-energy, as there is a large hydro power plant installed. However, there is no formal policy to promote further hydro installations, and any additional energy demand is usually covered with diesel generators, which have a lower cost per capacity installed, and a shorter installation time, but a much higher operational cost. This project will support the deployment of EE to help to reduce the peak demand, and the overall energy consumption, without affecting the economic growth. The project will finance: (i) general EE assessment to analyze the energy consumption pattern in public or private commercial, residential and industrial buildings; (ii) Investment on pilot EE initiatives, such as the replacement of inefficient devices by energy-saving light bulbs (residential and public lighting, induction street lighting), and Solar Water Heaters; these EE

pilot projects are going to be carried on public buildings. The general assessment performed will permit to quantify and validate the energy savings obtained. The selected buildings will be committed to maintaining EE practices and if possible introduce RE generation to supply part of the upcoming demand.

**Component III: Support the use of RE for the electrification of the Hinterlands (GEF US\$ 3,25 million, co-finance US\$ 8,05 million).** In order to ensure a more sustainable development of the rural areas, this component will finance: (i) assessment for the potential of the use of PV panels or hybrid PV-diesel installations; (ii) determine the most feasible systems of supplying electricity to isolated villages and off-grid locations; and (iii) develop the most appropriate institutional arrangements for ownership and management of the operations of such systems; (iv) pilot solar-PV installations in off-grid and hybrid systems in the Hinterlands; (v) assessment of the potential for micro and pico hydros (run of river) in the Hinterlands; (vi) based on the results of (v) the GEF funds will co-finance the investment of micro and pico hydroelectric pilot projects (adding up to approximately 2,7 MW); the number of hydro plants installations will depend on the assessment and on the identification of potential initiatives with advanced studies previously financed in the country and the establishment of sustainable business models for the operation and maintenance of the systems. GEF funds will contribute to assess hydro resources to identify promising sites, fund part of the investments and will give support to materialize projects in advanced stage of feasibility having the adequate hydrology information. In this component, participation of indigenous communities will be essential, as they will be the main beneficiaries. The capacity and skill building as well as community acceptance of the project and ownership will be a key issue. The IDB-MIF will support this component by funding training, capacity building and structuring of business models that will ensure the operative and financial sustainability of the systems. Through the IDB-MIF project a National Platform for Stakeholder Involvement (NPSI) will be created to ensure the involvement of communities during the identification, development and implementation stages.

**Component IV: Capacity Building and Dissemination of findings (GEF US\$ 0 million, co-finance US\$ 0,95 million).** This component will finance a public education and awareness campaign to increase the understanding of RE and EE benefits. The component will foster the use of RE and EE policies and measures. This campaign will include seminars, workshops and also field visits to disseminate the impacts and results of the project as well as one regional workshop to review the results of each monitored project. Moreover, this component will promote the creation of the NPSI, which will ensure the participation of the rural communities, civil society organizations (CSO), NGOs and private sector entrepreneurs willing to work in the rural communities. The project, through the development of the NPSI, will contribute to disseminate findings, provide institutional strengthening and capacity building of the rural communities, particularly the indigenous communities of the Hinterlands, CSOs and NGOs, particularly for the implementation of RE projects in Hinterlands. The IDB-MIF funded project, through the NPSI, will also contribute to empower and train local monitors and local communities to install, operate and maintain RE equipment so that these systems are technical and operatively sustainable as well as locally accepted and used by the community.

The project executing unit (PEU) will be established in the MNH, which will be in charge of the development and monitoring of the project, and of the coordination with the NPSI. The PEU will coordinate its efforts with the local monitors (local project managers) trained through the NPSI, to monitor and evaluate the subprojects developed for their communities. The MNH is the executing agency of all the base projects considered, and has already experience working with the IDB in the execution of a technical cooperation; however, the success of the projects will strongly depend in the ability to engage local communities, therefore the NPSI will have a very important role as a catalyst for this engagement.

**Global Environmental Benefits.** The installation of RE generation is expected to displace



diesel generators, which would have otherwise been installed. It's expected that at least 473 kW of solar distributed generation is installed in urban areas, and 225-kW installed in rural areas, helping to reduce around 967-MWh/year of diesel generated energy (a 16% capacity factor is assumed for PVs), which translates to 775 tons of CO<sub>2</sub> per year (0,8 tCO<sub>2</sub>/MWh is assumed for displaced diesel generation). It is expected that the demonstration of this technology as a solution for urban and rural electrification, will prompt the deployment of an additional 700-kW of PV systems in the country. In addition, the installation of a 300-kW bio-energy generation plant, which will be connected to the main grid, is expected to displace 1,971-MWh/year (at 75% capacity factor) of diesel generation per year (1,044 tCO<sub>2</sub>/year, the emission factor for the Jathropa biodiesel is assumed 0,27 tonsCO<sub>2</sub>/MWh), and prompt the further investment of 500-kW of bioenergy. Finally the installation of 2,7 MW of pilot hydro projects will generate around 11,887 MWh/year (a conservative 50% capacity factor is assumed), and displace 9,510 tCO<sub>2</sub>/year, and it is expected to prompt the investment in another 2,7 MW of hydro schemes.

The installation of 1,250 m<sup>2</sup> of solar water heaters (SWH), which will be facilitated by the findings of this project, will permit to reduce the use of grid electricity to generate warm water (1,350-MWh/year, assuming 3 kWh/m<sup>2</sup>/day); it is expected that at least 6,075 tCO<sub>2</sub> will be reduced over 15 years, assuming that the displaced energy (grid electricity) has an emissions factor of 0,3 tonsCO<sub>2</sub>/MWh. EE measures will reduce the consumption of the mix of grid energy, which has a lower emission factor than diesel generation. The installation of at least 50,000 Compact Fluorescent Lamps in public, commercial and residential buildings with at least 7,500 MWh of energy savings per year (assumes 50W energy saved over 3000 hours per year), which translates to at least 2,250 tCO<sub>2</sub>eq/year reduced by efficient lighting systems (assumes average grid electricity emissions with 0,3 tonsCO<sub>2</sub>/MWh displaced). The induction street lights are expected to reduce 511 MWh/year (saving 50% over a 400W high pressure sodium HPS lamp), and reduce 153 tonsCO<sub>2</sub>/year.

The global environmental benefits of this project will be 244,681 tons of CO<sub>2</sub>eq emissions avoided directly by the project, and 276,770 tons of CO<sub>2</sub> avoided indirectly (521,425 tCO<sub>2</sub> in total).

The EE measures that will be put in place, after this project is concluded, are expected to have a large multiplying effect in the country. In a similar way, the RE policies and regulations are expected to promote the installation of further RE generation, helping to reduce over 2 million of tons of CO<sub>2</sub> (it is expected that at least 30 MW of RE will be installed in the country over the next 20 years, displacing diesel generators that would have been installed otherwise).

The main impact of this project is related to the focal area of Climate Change. Nonetheless, the use of RE sources in the interior will reduce the pressure on forests, as an alternative for energy. Hence the project improves the conditions for the sustainability of the environment, particularly the tropical forest of Suriname, which houses thousands of species, contributing to the conservation of biodiversity and reduces the incentives of clear cutting and land degradation. Moreover the project by providing access to energy in the rural areas will improve the conditions for the agricultural rural sector, reducing again the incentive for land degradation. (Please see the attached Excel file for detailed assumptions).

**B.3. Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF). As a background information, read [Mainstreaming Gender at the GEF.](#)":**

This GEF project will permit to demonstrate RE and EE technologies at a pilot scale. The demonstration of these technologies will prompt its deployment in Suriname, aided by a new sustainable energy framework (developed by SU-T1055), the IDB-MIF project and the

Investment Loan (SU-L1009) which will be developed with the support of the IDB.

The access to more reliable and affordable energy (due to the reduced use of fossil fuels) in rural areas combined with EE measures, particularly for the urban areas, will improve the income and development of communities. At a national level, the most important contribution will be the design and implementation of the Sustainable Energy Framework for Suriname which will foster the establishment of policy and regulatory proposals to facilitate the deployment of RE and EE. Suriname is growing at 10% per year and the requirements of additional energy in the residential, commercial and industrial sector represent an important challenge for the new Government. The development of additional power and the sustainable distribution of electricity by EBS is part of this challenge, along with the use of cost-effective low carbon technologies for the sustainable electrification of the interior. The analysis of the adequate tariff regime for the financial sustainability of EBS and the institutional and regulatory mechanisms for the adequate electrification of the interior will be addressed under IDB intervention.

GEF initiative will contribute to implement pilot projects to assess and disseminate the use of RE and EE under the Sustainable Energy Framework. These measures will contribute to improve energy access, energy conservation, and reduce the use of conventional fuel for power generation, and the associated cost and CO<sub>2</sub> emissions. In addition, a more reliable and sustainable energy supply will ensure economic development in key areas of the economy: tourism, ecotourism and mining.

In addition, this project will enable to provide a more reliable energy supply in rural areas, the introduction of clean sources of energy will provide much-needed electricity, reducing the cost of provision by diesel generators or incrementing the available time for family or other purposes by avoiding the collection of wood as sources of fuel for cooking, while also enabling the introduction of information and communication technologies, which are critical tools for women's education, empowerment, economic productivity, and participation in markets. Moreover, by implementing adequate management structures and dissemination policies for the PV systems, the project will have a positive effect on the population, which will appropriate the technology. Special attention will be paid to guarantee gender equality in the division of labor related to the operation and maintenance of the PV systems. Additionally, by reducing the need to collect wood because alternative renewable fuels are used, woman (and men) and children will have more available time to use for other purposes, therefore increasing their quality of life.

- B.4 Indicate risks, including climate change risks that might prevent the project objectives from being achieved, and if possible, propose measures that address these risks to be further developed during the project design:

Risks	Likelihood	Mitigation Measures
The renewable resource availability (hydro variables, solar radiation) can be influenced by changes in the climate patterns.	Low	RE assessment will have to take this fact into consideration, using: reliable historical data, gathering of new information using adequate equipments and monitoring devices and the necessary analysis to determine the feasibility of the projects. GEF intervention will further reduce this risk by giving support to materialize identified and advanced initiatives with adequate studies.
Lack of political commitment for the development and implementation of EE and RE.	Medium	Given the length of the project execution (6 years) a strong government commitment is required. This risk is mitigated since the use of RE technology is consistent with Suriname's Multipurpose Development Plan. Moreover, the Government is pursuing the development of a Sustainable energy Framework, with the support of the IDB, which includes new regulations for the support of EE and RE. Due to the sustained growth of the Country in the last years (10%), the supply of energy to reduce load shading is one of the main challenges of the new administration. Especial attention is made to the development of energy using low carbon technologies and the implementation of EE in the public and private sector. Due to the high hydrology potential of the country, hydropower for the supply of coastal areas and also for the interior is one of the main options for electrification.
Lack of effective RE data for the implementation of RE demonstration project.	Low	The demonstration project is based on preliminary satellite screening of solar and hydro resources which will be confirmed through an on-site monitoring evaluation of the potential.
Lack of local technical capacity and local governance for the implementation of the project.	High	The risk will be mitigated by hiring a project manager, establishing an executing unit in the MNH, and including training programs in the development and implementation of the project. Participation of local communities will be encouraged through the NPSI.
Lack of interest in the population for the deployment of EE initiatives.	Low	This risk will be mitigated first by pilot demonstrations of EE initiatives in public buildings, and also by a strong dissemination program of the advantages of EE, the potential energy and monetary savings and the results of the pilot initiatives.

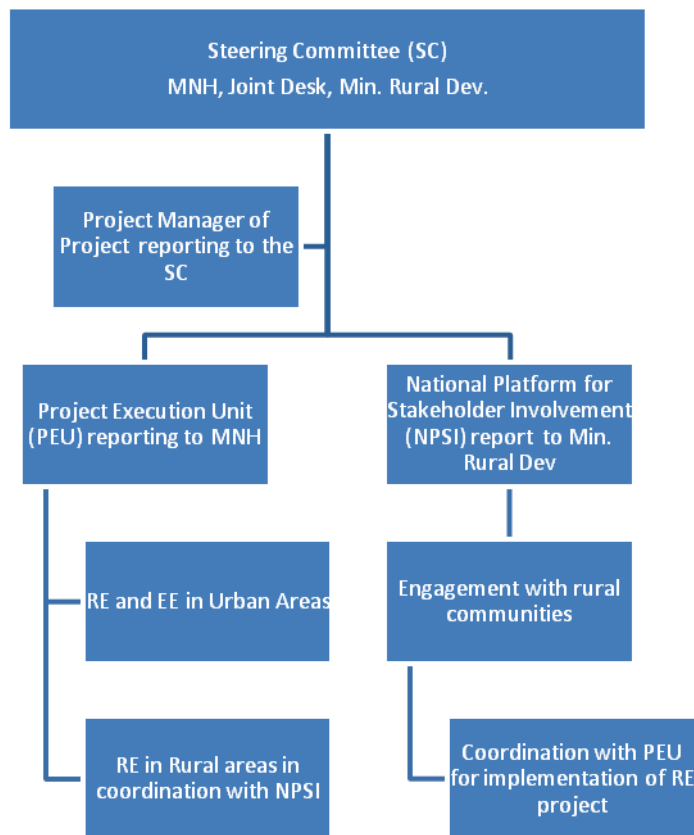
B.5. Identify key stakeholders involved in the project including the private sector, civil society organizations, local and indigenous communities, and their respective roles, as applicable:

A high level Steering Committee (SC) chaired by the Ministry of Natural Resources (MNH, acronym in Dutch) comprising of the Joint Desk (Central Bank and Ministry of Finance), Ministry of the Rural Development and the MNH has been proposed and agreed with GSU. The project manager of the project (reporting to MNH) will have to prepare quarterly presentations to SC showing the progress of the project. The MHN, which will be the local executing agency, will be in charge of the execution of the project and will also liaise with the other ministries through the SC.

Within the MNH, a Project Execution Unit (PEU) will be established to facilitate the implementation of the RE and EE projects in the urban and rural areas. The PEU will deal with the technical issues of the project: design, procurement, storage of equipment, installation, startup of the technologies used. In order to facilitate the engagement with the rural communities, the PEU will coordinate through the National Platform for Stakeholder Involvement (NPSI), who will be reporting to the Ministry of Rural Development. The NPSI will discuss and negotiate with the community the training required and the business model to be used in order to achieve financial and operational sustainability of the project. Therefore the PEU will only begin the technical part of the project when the NPSI has cleared the project with the local community. Through this methodology with an effective interaction between the PEU and the NPSI, the implementation of subprojects financed under the program will be expedited.

Through the NPSI, the project will also include the participation of indigenous communities, organized in their traditional structures, particularly in rural areas, which will be considered from the development stages of the project and trained to operate and maintain the systems. Figure 1, provides an overview of the organizational structure of the project.

Figure 1: Organizational Structure of the project



Other beneficiary entities are Staatsolie (Public oil company of Suriname) and EBS (Public electric utility in Suriname), particularly for the urban areas. Staatsolie created the RE Unit and has since then promoted the identification of potential sites for the development of RE initiatives; financed feasibility studies for Bioenergy with the support of IDB and new studies for additional hydropower. Currently Staatsolie under the direction of the MNH and support from the NGO, DRESS (Development of Renewable Energy in Suriname) is executing a technical cooperation to support the feasibility of bioethanol and a small hydropower in the interior, the Gran Krikri. The role of public utilities with regard RE in the new government, has not been pronounced; however the commitment of the country to continue moving the agenda of RE is clear and has been mentioned in public communications by the new government.

On the other hand, EBS is responsible for the distribution of electricity to coastal areas and the MNH for the generation and supply of electricity to the interior. Although it is expected that EBS will increase their role in rural electrification.

#### B.6. Outline the coordination with other related initiatives:

GEF initiative will be implemented as part of the Sustainable Energy Framework for Suriname (SEFS). The SEFS is proposed by the Government and will be developed with IDB intervention (SU-L1022). This initiative is expected to be approved in 2012. A Technical Cooperation (SU-T1055) will support the preparation of the SEFS. GEF intervention will be part of the strategy for the implementation of the SEFS facilitating the promotion and penetration of RE and EE practices.

In addition, it is expected that IDB/SU-L1009 facilitates the scale up of successful RE and EE initiatives piloted by GEF program. MIF funded technical cooperation will explore and develop the most appropriate institutional arrangements for ownership and management of the operations of solar-PV technologies in rural areas. Lastly, the technical cooperation SU-T1042 will provide

baseline information and prefeasibility assessment of potential RE initiatives. These operations are listed in the co-financing table in this document.

**C. DESCRIBE THE GEF AGENCY’S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:**

The IDB is one of the major multilateral lending agencies in the region. In the last ten years the IDB has approved 13 loan operations and 61 technical cooperations for Suriname, supporting a diversity of areas, including education, health, government modernization and energy. In the area of energy, the IDB is currently executing one technical cooperation (described in C.2.), and preparing the operations described in the previous paragraph, in close coordination with the government and the MNH.

**C.1 Indicate the co-financing amount the GEF agency is bringing to the project:**

The following table presents the proposed IDB co-financing for this project:

<b>Co Financing IDB</b>	<b>Total Co-Financing Available</b>	<b>Total Co-Financing for the project</b>
SU-L1022- Development of a Sustainable Energy Framework (PBL)	10,000,000	-----
SU-L1009 – Implementation of the Sustainable energy Framework (Investment)	20,000,000	18,200,000
SU-T1042 - Support to energy: renewable energy and bio-energy (TC in execution)	400,000	400,000
SU-T1055 - Support for the Development of a Sustainable Energy Framework (OI)	1,000,000	1,000,000
SU-Mxxx - Electrification of Remote Hinterland Villages and Supply of Small-scale Off-grid Energy	1,619,200	1,500,000
<b>TOTAL</b>	<b>32,019,200</b>	<b>21,100,000</b>

**C.2 How does the project fit into the GEF agency’s program (reflected in documents such as UNDAF, CAS, etc.) and staff capacity in the country to follow up project implementation:**

The project is fully coherent with the IDB country strategy of Suriname (2007-2010) for the energy sector, as the project provides technical support to improve Suriname’ energy infrastructure, and also to foster the development of the Hinterlands. IDB is currently executing a Technical Cooperation (TC) in Suriname. The executing agency of this TC is the MNH. The objectives of the TC are to asses, promote and support the use of RE. The results of the TC aim to ensure a sustainable development of Hinterlands, providing alternatives to reduce the dependency on fossil fuels and supporting the adequate use of Suriname’s natural resources. The beneficiaries of this TC are Staatsolie, National Institute for Environment and Development in Suriname (NIMOS), Development of Renewable Energy Sources in Suriname (DRESS) and the MNH. In addition, IDB administers a retainer consultancy to support Staatsolie explore the potential for bio-fuel production in Suriname, particularly focusing in assessing and improving existing initiatives of Staatsolie. The results from these studies will contribute to enhance the components of this project.

The IDB has a permanent office in Paramaribo, with a dozen permanent employees. The Energy Division has an Energy Specialists based in Guyana, who supervises Suriname’s energy project trough frequent visits and permanent coordination with local liaisons in Suriname. Moreover, the Energy Division of the IDB has experts in the different areas in which this project is focused, with vast experience in all countries of the region.




**PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**

**A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):** (Please attach the [Operational Focal Point endorsement letter\(s\)](#) with this template. For SGP, use this [OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Ms. Ivette PATTERZON	Environmental Policy Officer	MINISTRY OF LABOUR, TECHNOLOGICAL DEVELOPMENT AND ENVIRONMENT	02/23/2011

**B. GEF AGENCY(IES) CERTIFICATION**

<b>This request has been prepared in accordance with GEF/LDCF/SCCF policies and procedures and meets the GEF/LDCF/SCCF criteria for project identification and preparation.</b>					
Agency Coordinator, Agency name	Signature	DATE (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Michael Collins IDB GEF Executive Coordinator		07/28/2011	Jesus Tejada and Christiaan Gischler	(202) 623-3411	<a href="mailto:jesust@iadb.org">jesust@iadb.org</a> and <a href="mailto:christiaang@iadb.org">christiaang@iadb.org</a>