PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Medium-sized Project
TYPE OF TRUST FUND:GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title:	Appropriate Mitigation Actions in the Energy Generation and End-Use Sectors in Sri Lanka		
Country(ies):	Sri Lanka	GEF Project ID:[1]	5586
GEF Agency(ies):	UNDP	GEF Agency Project ID:	5232
Executing Partner(s):	Ministry of Environment and Renewable Energy	Submission Date: Resubmission date:	06 September 2013 11 November 2013
GEF Focal Area (s):	Climate Change	Project Duration (Months)	48
Name of parent program (if applicable): • For SFM/REDD+ ☐ • For SGP ☐		Agency Fee ($):	170,089

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK[2]:

Focal Area Objectives	Trust Fund	Indicative Grant Amount ($)	Indicative Co-financing ($)
CCM-2	GEFTF	566,165	4,700,000
CCM-3	GEFTF	924,246	7,300,000
CCM-6	GEFTF	300,000	1,000,000
Total Project Cost		1,790,411	13,000,000

B. INDICATIVE PROJECT FRAMEWORK

Project Objective: To support appropriate climate change mitigation actions in the energy generation and end-use sectors as part of the initiatives to achieve the voluntary GHG mitigation targets of Sri Lanka

Project Component	Grant Type[3]	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount ($)	Indicative Co-financing ($)
1. Business-as-usual energy generation and end-use sector baselines at national and sub-national pact.	TA	Established and regular update of renewable energy utilization baseline & energy intensity reference baselines[4] for the energy generation and end-use sectors	- Completed provincial level energy generation and end-use sectors inventories - Completed sub-sectoral inventories of the energy generation and end-use sectors - Defined and established sectoral and sub-sectoral reference baselines for the energy generation and end-use sectors - Established and operational national and provincial GHG emission inventory system for energy generation and end-use	GEFTF	$225,000	$1,300,000

[1] Project ID number will be assigned by GEFSEC.
[2] Refer to the reference attached on the Focal Area Results Framework when completing Table A.
[3] TA includes capacity building, and research and development.
[4] There are different parameters whose baselines can be set, e.g., generated energy utilization performance and emissions of the energy generation and end-use sectors. The most suitable and appropriate parameters will be determined during project design and preparation stage.

			sectors.			
2. Mitigation options for the energy generation and end-use sectors	TA	Prioritized Appropriate Mitigation Actions (AMAs) in the energy generation and end-use sectors are identified and designed	- Developed and published detailed marginal GHG abatement cost curves for the energy generation and end-use sector - Completed comprehensive barrier analysis for mitigation options in the energy generation and end-use sector - Identified and analyzed priority appropriate mitigation actions of Energy Sector in Sri Lanka -Categorized the Identified mitigation actions as supported and voluntary. - Approved appropriate national policies in line with meeting the national voluntary GHG emission reduction targets - Identified fully capable and qualified private and public sector entities in the implementation of climate change mitigation programs and sourcing of funds - Two programs or projects designed for the implementation of selected prioritized feasible appropriate mitigation actions in the energy generation and end-use sub-sectors and possibility for other interventions	GEFTF	$450,000	$3,200,000
3. Implementation of appropriate mitigation actions in the energy generation and end-use sectors	TA	Identified private and public sector entities to implement prioritized appropriate mitigation actions for the achievement of Sri Lanka voluntary mitigation target	- Updated financial tools that support the implementation of the mitigation program in the energy generation and end-use sectors, including sustainable energy guarantee fund, fiscal incentives, feed in tariffs and other options available in Sri Lanka - Established public-private partnerships for the implementation of appropriate mitigation actions - Implemented and operational private sector; and/or PPP-funded AMAs projects	GEFTF	$300,000	$4,000,000
	Inv.		- Established and operationalized mechanisms for the implementation of two appropriate mitigation actions, one in the energy generation and the other in end-use sector, with at least one appropriate mitigations action utilizing new market mechanisms such as PoA.	GEFTF	$430,153	$3,000,000
4. MRV system and national registry for mitigation actions in the energy generation and	TA	Accurate measurement and accounting of actual GHG emission reductions from mitigation	- Established and operational national registry mechanism for mitigation actions in the energy end-use sector - Defined key parameters (quantitative and qualitative) to be monitored for the selected	GEFTF	$300,000	$1,000,000

end-use sectors		actions in the energy generation and end-use sectors	appropriate mitigation actions - Established MRV Committee for the selected appropriate mitigation actions - Developed national MRV guideline and standard methodologies for the selected sub-sectors - Designed and implemented MRV system for the selected appropriate mitigation actions - Designed and implemented monitoring plan for the selected appropriate mitigation actions			
Subtotal					$1,705,153	$12,500,000
Project Management Cost (PMC)[5]				GEFTF	$85,258	$500,000
Total Project Cost					**$1,790,411**	**$13,000,000**

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

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount ($)
National Government	Ministry of Environment and Renewable Energy	In-kind	300,000
National Government	Sri Lanka Sustainable Energy Authority (SLSEA)	Grant	3,200,000
Private Sector	Private project developers	Hard Loan	3,000,000
Private Sector	Private project developers	Investment	1,000,000
National Government	Sri Lanka Sustainable Energy Authority (SLSEA)	Soft Loan	5,400,000
GEF Agency	UNDP	Grant	30,000
GEF Agency	UNDP	Grant	20,000
GEF Agency	UNDP	In kind	50,000
Total Co-financing			13,000,000

D. INDICATIVE TRUST FUND RESOURCES ($) REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY: NA

E. PROJECT PREPARATION GRANT (PPG)[6]

Please check on the appropriate box for PPG as needed for the project according to the GEF Project Grant:

	Amount Requested ($)	Agency Fee for PPG ($)[7]
• No PPG required.	-- 0--	--0--
• (Up to) $50k for projects up to & including $1 million		
• (Up to)$100k for projects up to & including $3 million	100,000	9,500
• (Up to)$150k for projects up to & including $6 million		
• (Up to)$200k for projects up to & including $10 million		

PPG AMOUNT REQUESTED BY AGENCY(IES), FOCAL AREA(S) AND COUNTRY(IES) FOR MFA AND/OR MTF PROJECT ONLY: N.A.

[5] This includes Direct Project Services (services such as procurement, human resources management, organization of training activities, conferences, and workshops etc.) which UNDP provides at the request of government and itemize against a schedule of costs set out in UNDP's Universal Price List (UPL) or local price list. An initial analysis indicates that these costs will not exceed US$ 10,000 over the four years of project duration.

[6] On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

[7] PPG fee percentage follows the percentage of the GEF Project Grant amount requested.

PART II: PROJECT JUSTIFICATION[8]

A. Project Overview

A.1. Project Description:

Global environmental problems, root causes and barriers that need to be addressed:

Problem that the proposed project will address: The problem that needs to be addressed through the proposed project is the absence of a systematic approach for: (1) performing provincial level GHG emissions inventory; (2) establishing and updating sectoral and sub-sectoral reference baselines including specific energy consumption data; and (3) measuring, reporting and verifying the impacts and contribution of individual appropriate mitigation action in the energy generation and end-use sectors to the voluntary emission reductions targets of the country. To address this problem, the proposed project will support the Government of Sri Lanka's plan and intention to conduct GHG inventories at the provincial level and come up with more comprehensive energy end-use sub-sector reference baselines. Using the information that will be obtained from such inventories, relevant marginal abatement cost curves (MACCs) will be developed for various energy generation technology options and for various end-use sector energy efficiency and energy conservation measures. The selection and prioritization of the technologies and measures will be based on the technology cost effectiveness identified through MACCs and implemented on a demonstration/pilot basis. The process will also demonstrate the application, and usefulness of a monitoring, reporting and verification (MRV) system. The information that will be generated from such an approach is very useful in the energy policy design and energy policy impact assessments of the government. Considering the current limited work under National Energy Management Plan (EnMAP) on this area, most of the envisioned project activities, starting from the demonstration of the assessment and establishment of reference baselines up to the verification of the results and impacts of the implemented appropriate mitigation actions, are considered as incremental. This systematic approach that will be promoted and whose application will be demonstrated under the proposed project will have an impact on the national policy planning, its implementation and other appropriate mitigation actions initiated in the near future by Sri Lanka Sustainable Energy Authority (SLSEA) or ministries that are concerned with climate change.

Although there are various projects and programs (albeit fragmented and non-coordinated) that are being implemented in the energy generation and end-use sectors of the country to mitigate climate change, both the individual and collective impacts of such initiatives are not known. This is because a consistent nationally accepted and established methodology for assessing the results of the climate change mitigation interventions in these sectors, and their contribution to the achievement of the national GHG emission targets is non-existent. The prioritization of some of these interventions is not done in a systematic manner, especially the end-use sectors at the sub-national level due to the lack of data. The major barriers to establishing and updating sectoral and sub-sectoral reference baselines; and for the monitoring, reporting and verification of the results and impacts of implemented appropriate mitigation actions are as follows:

a) There are no sub-national (or provincial) level GHG emissions inventories that can provide useful data for the establishment of sectoral and sub-sectoral reference baselines for the energy generation and end-use sectors. Although there are efforts at the national level towards creating a GHG emissions inventory management system, as part of the national communications to the UNFCCC, initiatives toward the establishment of such system for the energy generation and end-use sectors and sub-sectors simply do not exist. The understanding of the importance and purpose of such system by the government was never realized. In the past, the government simply didn't think this is important.
b) The purpose of MAC curves was never recognized apart from unavailability of the data. Therefore, combining these two factors, no existing analysis of marginal abatement cost curves of CCM technologies and measures for the energy generation and end-use sectors. The Second National Communications to the UNFCCC detail only some of the potential mitigation options.

[8] Part II should not be longer than 5 pages.

c) The importance and purpose of MRV system was never acknowledged. Because of this, the assessment of various implemented climate change mitigation programs and projects contribution against voluntary emission reduction targets is not happening. This is missing at the moment in the evaluation of the actions taken (i.e., CCM projects) to contribute to the achievement of voluntary emission reduction targets. This was also identified as a major barrier for the effective implementation of the EnMAP.
d) Continuous non-availability of financing for energy efficiency improvement projects - There are already funding schemes that are operational but some of these have to be refocused or be appropriately redesigned to support CCM interventions in the energy generation and end-use sectors. For example, legal and financial frameworks are non-existent to support ESCOs to operate successfully through performance based contracts.
e) Majority of current activities, projects and programs of the SLSEA are ad-hoc in nature with short-term perspective. This is further aggravated by the inadequacy of technical manpower both at the management and operational levels of the organization.

Baseline Scenario and Baseline Project(s):

In the area of climate change mitigation in the energy generation and energy end-use sectors in Sri Lanka, the various currently implemented projects and programs are those that are in support of the existing energy policies/plans/programs such as the: (1) National Energy Policy and Strategies (NEPS) (October 2006); (2) National Action Plan for the Haritha Lanka Programme (January 2009); and, (3) Mahinda Chintana (National Development Framework, Vision for the Future) (2010). There is also the Renewable Energy Resource Development Plan – RERDP (1/2012) that specifically provides targets for the promotion of renewable energy and the EnMAP for the promotion of energy efficiency. National voluntary emissions reduction targets set under different policies, are primarily guided by the following: (a) National Energy Concession Plan (NECP), (b) Renewable Energy Road Map (RERM)-2042, and (c) the *Haritha* Lanka (Green Lanka) Strategy and Action Plan (HLSAP). There are also a number of plans, initiatives and projects that are under implementation to meet the energy targets that were set through the various established relevant plans, policies and programs. The proposed project builds on the ongoing and planned initiatives that are in line with the **EnMAP** for the promotion of energy efficiency and energy conservation measures in the end-use sectors; and also those that are in line with the **RERDP** for renewable energy generation.

These current initiatives are expected to generate energy savings (from fossil fuel consumption reductions) and consequently bring about GHG emission reductions, and will contribute in the realization of the targets set by, among others, the EnMAP and the RERDP. Nonetheless, because of the absence of a systematic approach of: (1) Ascertaining the appropriate, feasible and cost-effective EE and RE interventions that will be planned, designed, funded/invested in and carried out in an integrated manner; (2) Establishing the most probable potential energy savings that can be realized based on reliable baseline data; (3) Accounting and monitoring actual energy savings and GHG emission reductions achieved from appropriate EE and RE programs/projects that will be implemented; and, (4) Reporting and verifying the actual energy savings and GHG emission reductions; there is no assurance of the effectiveness of the actions that will be funded and implemented, and how these contribute to the country's set targets for the energy generation and energy end-use sectors. Future energy policy making and forward looking development planning in the areas of energy and environment half a decade from now (2020) will not be effective, useful nor meaningful if data/information from whatever activities will be carried out under the EnMAP and RERDP will not be properly done. All the necessary elements for such systematic approach are not currently in place, and in its absence the planning, funding, and implementation of the various fragmented climate change mitigation initiatives (EE and RE) that are in line with the EnMAP and RERDP are not expected to bring about synergistic collective impacts to the achievement of Sri Lanka's voluntary energy-based emission reduction targets in 2020 and beyond. This in a nutshell is the expected **baseline scenario** in the absence of this proposed project.

- National Energy Management Plan (EnMAP) of Sri Lanka: The SLSEA is currently implementing a nationwide program covering all the energy end-use sectors, namely industrial, commercial, public, and domestic sectors to carry out various projects designed to realize the targets set in this plan. The program includes regulatory interventions such as: energy labeling program (for CFLs, CFL models and appliances), Code of Practice for Energy Efficient Buildings (Building Code), and Energy Manager Scheme. The relevant programs following these regulatory interventions are Energy Efficiency Improvement in Tea Industry and Greening Sri Lanka Hotels project. "Greening Sri Lanka Hotels" project is a collaborative effort to achieve

energy, water and environment conservation in hotels, specially focusing the SME sector. The target of this project is 20% reduction in energy and water consumption and 20% reduction of waste in 360 hotels. The project is carried out under the Switch Asia Program. Apart from this, SLSEA is working on energy consumption benchmarks for industries including commercial buildings introducing the mandatory monitoring of the energy performance of industries and buildings, and mandating the appointment of energy managers for establishments consuming energy in amounts beyond certain set threshold. This activity was originally initiated under a completed JICA project "Promoting Energy Efficiency Improvement in Sri Lanka". EnMAP allocated funds to monitor compliance with benchmarks and continue this activity. The monitoring and evaluation of compliance, and benchmarking activities under this program are among the baseline activities of the proposed GEF project. The EnMAP has about US$ 100 million allocated financing, of which about US$ 5.4 million is considered as co-financing towards monitoring and evaluation of compliance, and benchmarking activities.

SLSEA established the Sustainable Guarantee Facility (SGF) (earlier known as the Sri Lanka Sustainable Energy Fund) to address technical and financial guarantees for the promotion of energy efficiency and allocated an annual budget of US$ 1.5 million to support implementation of projects and programs on the ground. This annual budget will be used for the implementation of energy efficiency demonstrations under the proposed GEF project and will be part of the co-financing for four years totaling US$ 6.5 million. Participating financial institutes for SGF are Hatton National Bank, Sampath Bank, Commercial Bank, NDB Bank, DFCC Bank, Seylan Bank, Bank of Ceylon.

- Renewable Energy Resource Development Plan 1/2012: The NEPS of Sri Lanka places renewable energy development as a high priority and considers it to be one among the nine main elements of the country's national energy policy. In this Plan, the target for renewable energy share in the grid electricity generation mix is 20% by 2020, from 10% by 2015. The guiding principle in implementing the government policy will be the offering of incentives to developers/investors of RE-based power generation projects at the early stages of project development and to evolve the power generation industry to work through market based instruments. This will be done continuously until RE-based power generation reaches grid parity, making it a worthy competition to conventional power generation options that are mainly fossil fuel based. Although there is an incentive mechanism offered to renewable energy projects, the required financing for EE/RE projects to help achieve the country's energy targets is not proportional to the financing made available through the existing financial tools and incentives to de-risk investment in the country. Also there is no MRV system in place to verify the benefits that can be attributed to such projects.

The private sector has committed its participation in the implementation of energy generation (IPPs and captive power generators to employ RE-based power generation technologies) and end-use pilot projects (tourism, apparel, and health industry). These to-be-enhanced systems will form part of the proposed project as demonstrations/pilots. The committed investments totaling about US$ 4 million for these subsumed projects are considered as co-financing to the proposed project.

Proposed alternative scenario with Incremental /Additional cost reasoning:

The basis for the proposed project is Sri Lanka's voluntary emission reductions commitment to reduce GHG emissions in the energy generation and end-use sectors and enabling the country to meet their national goals and strategies through a holistic framework as well as gear towards new market mechanisms. In the **alternative scenario** that will be facilitated by the proposed project, will have the following features:

In order to bring about the above described **alternative scenario**, the project will carry out relevant activities that will address and remove the barriers to establishing and updating sectoral and sub-sectoral reference baselines; and for the monitoring, reporting and verification of the results and impacts of implemented appropriate mitigation actions. Activities that will involve the setting up of the system (and the necessary support policy, regulatory and institutional frameworks) for GHG inventory analysis at the provincial level and come up with more comprehensive sectoral and sub-sectoral reference baselines for the energy generation and end-use sectors will be carried out. Such reference baselines, which will also be updated regularly after the project, will be used to properly assess the contribution of individual policies, programs, strategies and funds. A functional national registry mechanism for climate change mitigation actions to assess and monitor the contribution of individual policies, programs, strategies

and funds towards meeting the policy goals will also be established. Through developing GHG emission abatement cost curves, the proposed project will enhance the design and deployment of viable and cost-effective interventions in order to meet the individual policies goal and incorporate national MRV guideline and standard methodologies for the monitoring, reporting and verification of the appropriate mitigation actions that will be carried out in selected end use sub-sectors. The required financing for EE and RE initiatives is made available through the existing financial tools and incentives to de-risk investment, the impacts of which will be analyzed extensively using the developed MRV methodologies. These are the direct incremental benefits accrued through the utilization of GEF resources. The proposed project shall integrate demonstration of the assessment and establishment of reference baselines, functional national registry and the MRV of the results and the assessment of impacts of the implemented appropriate mitigation actions, under a framework that focuses explicitly on developing and implementing these appropriate mitigation actions in energy generation and end-use sectors. The proposed GEF project will demonstrate the development, establishment and implementation of this framework through pilot demonstrations of the selected appropriate mitigation actions, and the application of the relevant supportive regulatory and market based policy instruments. The proposed project is structured into four components that are necessary.

Component 1: Business-as-usual energy generation and end-use sector baselines at national and sub-national level

The expected outcome of this component is the regular update of renewable energy utilization baseline & energy intensity reference baselines for the energy generation and end-use sectors. This outcome is achieved through the realization of following outputs.

- Completed provincial level energy generation and end-use sectors inventories
- Completed sub-sectoral inventories of the energy generation and end-use sectors
- Defined and established sectoral and sub-sectoral reference baseline specific energy consumptions for the energy generation and end-use sector and sub-sectors
- Established and operational national and provincial GHG emission inventory system based on energy generation and end-use sectors inventories

The energy consumption benchmarking activity in EnMAP is a baseline activity under Component 1. These proposed project outputs are delivered by such benchmarking work in EnMAP supplemented by incremental activities, which among others include the conduct of GHG emission inventories at the provincial level that would also generate information/data that will be used for the establishment of sectoral and sub-sectoral reference specific energy consumption baselines for the energy generation and end-use sectors[9].

Component 2: Mitigation options for the energy generation and end-use sectors[9]

The expected outcome of this component is that projects on the implementation of prioritized appropriate mitigation actions in the energy generation and energy end-use sectors are identified and designed. This outcome is achieved through the delivery of the following outputs.

- Developed and published detailed marginal GHG abatement cost curves for the energy generation and end-use sector

[9] Currently, there are very limited studies that have been carried out on the energy demand and consumption trends in specific sectors, let alone sub-sectors. The efforts to reduce energy consumption and GHG emissions from energy using activities in the country will have to be carried out at the sectoral and even sub-sectoral levels. Although the SLSEA has conducted some sectoral analyses, for example identifying Specific Energy Consumption (SEC) in existing commercial buildings, these were mostly general and cursory. In the case of the building sector study, indeed the building SEC varies depending on the climatic zone. Similarly, there are also no estimates of SEC details for some sectors, let alone each sub-sector. The resulting suggested actions are more or less just the potentials, without the benefit of thorough analysis of their techno-economic viability. This is the reason why specific analyses have to be done to establish the sectoral and sub-sectoral SECs, which have to be periodically be checked and updated to take into account the improvements that will be done. The additional NAMA-related analyses will identify and analyze appropriate renewable energy and energy efficiency applications and other low carbon measures that each sub-sector can implement.

- Completed comprehensive barrier analysis for mitigation options in the energy generation and end-use sector
- Identified and analyzed priority appropriate mitigation actions in the energy sector in Sri Lanka
- Categorized identified mitigation actions as supported and voluntary
- Approved appropriate national policies in line with meeting the national voluntary GHG emission reduction target
- Identified fully capable and qualified private and public sector entities in the implementation of climate change mitigation programs and sourcing of funds
- Two programs or projects designed for the implementation of selected prioritized feasible appropriate mitigation actions in the energy generation and end-use sub-sectors and possibility for other interventions

These proposed project outputs are delivered by baseline and incremental activities that will support the development of marginal abatement cost curves for various energy generation technology options and energy efficiency and energy conservation measures in the end-use sectors.

Component 3: Implementation of appropriate mitigation actions in the energy generation and end-use sectors

The expected outcome of this component is "identified private and public sector entities implement prioritized appropriate mitigation actions for the achievement of Sri Lanka voluntary mitigation target". This outcome is achieved through the delivery of the following outputs.

- Updated financial tools that support the implementation of the mitigation actions program in the energy generation and end-use sectors, including sustainable energy guarantee fund, fiscal incentives, feed in tariffs and other options available in Sri Lanka
- Established public-private partnerships for the implementation of appropriate mitigation actions (AMAs)
- Implemented and operational private sector-funded; and/or PPP-funded AMA projects
- Established and operational mechanisms for the implementation of two appropriate mitigation actions in the energy generation and end-use sector, with at least one appropriate mitigation action utilizing existing carbon market mechanisms such as program of activities (PoA).

The proposed project integrates baseline policies with existing financial instruments, and incentives to de-risk investment apart from MRV methodology. Some of the possible avenues the project will explore are (1) commercial loans (either by the mediation of Energy Mangers or by ESCOs), (2) reactivation of SGF through renewed focus and awareness raising events, (3) awareness to Participatory Financial Institutions (PFIs) in SGF, and (4) utilization of funds accumulated in revolving funds (E-friends, RERED, etc.). It is essential to focus on the optimal use and expected effectiveness of financial instruments, considering the mutual effects of financial instruments on the one hand, and national sectoral investments and official development assistance on the other. Increasingly, project based approach under CDM is moving towards Programme of Activities (PoA). Though Sri Lanka hasn't acceded Nationally Appropriate Mitigation Actions (NAMA), the domestic policy very much focuses of the NAMA methodology especially can be related with unilateral NAMAs. The proposed approach will involve measurement, reporting and assessment of the contribution of identified and prioritized climate change mitigation actions towards the realization of the national climate change targets and goals. Most of the CO_2 emission reductions that would accrue from these efforts are expected to contribute towards the achievement of the country's voluntary targets. Apart from reactivation of the SGF for supporting energy efficiency initiatives, feed in tariff scheme will be implemented with renewed focus on renewable energy without impacting related ongoing activities. More details on the selection of appropriate mechanism and design details will be determined during the project preparation stage.

Projects with prioritized investments will be selected on the basis of abatement costs, and their potential for scaling-up based on the preliminary analysis and consultation with partners. Possible sectors that the proposed project may target are:

- Tourism sector (hotels) is a potential candidate for energy efficiency and renewable energy interventions
- Commercial buildings for energy efficiency interventions, i.e. part of end-use sector
- Other industrial sectors that may be focused under the proposed project are: Apparel, food processing, dairy,

and other small industries could implement concentrated solar technology as a replacement to the use of fossil fuel for thermal energy needs.

Component 4: MRV system and national registry for mitigation actions in the energy generation and end-use sectors

The expected outcome of this component is "accurate measurement and accounting of actual GHG emission reductions from mitigation actions in the energy generation and end-use sectors". This outcome is achieved through the delivery of the following outputs.

- Established and operational national registry mechanism for mitigation actions in the energy end-use sector
- Defined key parameters (quantitative/qualitative) to be monitored for the selected appropriate mitigation actions
- Established and operational MRV Committee for the selected appropriate mitigation actions
- Developed national MRV guideline and standard methodologies for the selected subsectors
- Designed and implemented MRV system for the selected appropriate mitigation actions
- Designed and implemented monitoring plan for the selected appropriate mitigation actions

The current policy design and planning processes do not consider the importance and the advantages of a measurement, reporting and Verification (MRV) methodology for ongoing projects and programs and how useful and beneficial such procedure can be in assessing the contribution of AMA implementation to the overall national voluntary GHG emission reduction targets. The proposed project outputs will be delivered by both baseline and incremental activities which will ensure these elements are included as part of the planning process of appropriate mitigation actions.

Global environmental benefits:

To come up with a conservative estimate of the probable "order-of-magnitude" estimate of GHG emission reductions, attributable to the proposed project it will be assumed that the main sources of direct lifetime GHG emission reductions are from two SLSEA projects on (a) solar PV systems for energy generation in commercial and industrial establishments that are supported through market-based policy instruments such as net metering and accelerated depreciation; and, (b) energy efficiency in commercial buildings through the implementation of code of practice on energy efficient buildings (Building Code).

The project aims to install a total cumulative capacity of 10 MW of solar PV systems during the four years of project implementation period. It is aimed to achieve a total of 9.1 MW installed capacity in industrial and commercial establishments, with individual units of various sizes from 10 kW to 50 kW and considering an average of 30 kW per installation, about 300 industrial and commercial establishments are targeted. In addition, a total installed capacity of 0.9 MW is planned in residential and household units. Considering that each household may install an average system size of 3 kW solar PV, about 300 households are also targeted. It is estimated that the potential GHG emission reductions from this 10 MW targeted capacity is about 13,490 tCO_2/y assuming a capacity factor of 22% and grid emission factor of 0.7 tCO_2/MWh. When it comes to energy efficiency in commercial buildings, the baseline Specific Energy Consumption (SEC) in existing commercial buildings (including hotels and tourist resorts) is about 180 kWh/m^2. SLSEA is targeting to bring this down to the 100 kWh/m^2 level through the implementation of a building code. The proposed project targets 25 buildings each with a minimum of air conditioned floor area of 500 m^2.The potential GHG emission reductions are about 700 tCO_2/y. Overall, the project is expected to achieve a potential cumulative direct CO_2 emission reductions of about 411,712 tCO_2 during the economic lifetime of the demonstrations that will be carried out under the project. Considering the US$ 1,873,200 contribution of the GEF for this project, the estimated unit abatement cost is about US$ 4.55/tonne CO_2.

The abovementioned figures are rough estimates based on a conservative notion of the possible interventions that will be implemented under the proposed project as suggested by the SLSEA. However, the process of technology selection entirely depends on the marginal abatement cost curves, stakeholder consultation process, and priorities identified based on the GHG emission inventory and marginal abatement cost curves, all of which would be studied and analyzed in detail during the project preparation phase.

Innovativeness, sustainability and potential for scaling up:

The proposed project will produce key bottom up knowledge on the requirements for effective implementation of appropriate mitigation actions through the regular conduct of GHG emission inventories; establishment and updating of reference sectoral and sub-sectoral specific energy consumption baselines and marginal abatement cost curves for energy technologies, energy efficiency & energy conservation measures; testing the potential financing and market mechanisms; and, implementation of MRV process for these interventions. These aspects of the proposed project are considered innovative when compared to other possible approaches to promoting and implementing appropriate mitigation actions in the country.

The proposed project aims to enable the de-risking of investments on climate change mitigation projects through actions that would facilitate or influence the provision of financial incentives, and development and implementation of supportive financing schemes using commercial loans, reactivation of SGF, and existing revolving funds.

A.2. Stakeholders: Identify key stakeholders (including civil society organizations, indigenous people, gender groups, and others as relevant) and describe how they will be engaged in project preparation:

Stakeholder	Role
Ministry of Environment and Renewable Energy (MoE&RE)	MoE & RE is the National Focal point for UNFCCC and its Kyoto protocol. Therefore, MoE & RE is the executive agency for the overall supervision and management of the project. MoE&RE will provide the strategic directive for the project design; oversee the accomplishment of project preparation and tasks, lead and realize co-finance commitments.
Ministry of Power and Energy (MoPE)	MoPE will be involved in the project preparation as one of the stakeholders, provide required inputs to the project design, CEO endorsement request documentation and its review.
United Nations Development Programme (UNDP)	UNDP will lead the process of project preparation during the PPG phase by involving all the relevant stakeholders in the project design, preparation of required documentation for CEO endorsement and its review. UNDP will serve as the GEF implementing agency for the proposed project. It will carry out monitoring & evaluation of the project preparation activities, facilitating the budgetary provisions and support in implementing the project preparation activities.
SLSEA	SLSEA will be involved in the project preparation as one of the main stakeholders, provide required inputs to the project design, CEO endorsement request documentation and its review.
ADB	ADB will be involved in the project preparation as one of the stakeholders, provide required inputs to the project design, and CEO endorsement request documentation. It is expected that, some of the projects being supported under EnMAP can be considered as potential demonstration projects when it comes to establishing baselines, and integrating the elements of MRV.
Financial institutions[10]	Financial institutions will be involved in the project preparation as one of the stakeholders, provide required inputs to the project design, and CEO endorsement request documentation.
Civil Society Organizations (CSO)	CSOs will be involved in the project preparation as stakeholders, provide required inputs to the project design, and CEO endorsement request documentation.
Academic Institutions	Academic institutions will be involved in the project preparation as stakeholders, provide required inputs to the project design, and CEO endorsement request documentation. There are three technical universities that are active when it comes to project focus i.e. Moratuwa, Peradeniya, and Ruhuna Universities. Their role in the project is expert opinion and technical support in the identification of potential appropriate mitigation actions in the energy generation and end-use sectors that can be supported under the project.
Ministry of Environment also function as DNA	MoE will be involved in the project preparation as one of the stakeholders, provide required inputs to the project design, and CEO endorsement request documentation.

[10] About 10 in all - development banks and commercial banks,

A.3 Risk:

The following table summarizes the anticipated risks that might prevent the successful implementation of the project and achieving the project objectives, including the proposed mitigation measures:

Risks	Risk Rating	Mitigation Measure
Lack of active involvement of the relevant private sector entities	Low	The policies and action plans of the energy generation sector has clearly indicated the promotion of renewable energy and energy efficiency. Similarly energy efficiency in end-use sectors is also given high priority through EnMAP. Institutional framework in place for the implementation of renewable energy and energy efficiency projects. The SLSEA has planned to encourage the private sector through incentive scheme to promote renewable energy and energy efficiency applications. There are existing incentives for the end-users, for example net metering policy, which needs to be fine-tuned in the context of the end-user.
Inability to maintain co – financing and the finances required for a sustained continuation of project outputs.	Low	MoPE also ensured their co-financing since the project outputs come directly under their development objectives. This is part of ongoing support channeled through SLSEA. Involvement of private sector and other beneficiaries would be helpful in arranging for local co-financing. Involvement of bilateral and multilateral institutions in the sustainable energy sector as a whole.
Limited institutional capacities to support project implementation and program continuity.	Low	The project will adopt integrated approach and strengthen institutional capacities of designated agencies for promotion of renewable energy and energy efficiency.
Lack of manpower capacity at SLSEA and other utilities, specifically CEB	Medium	Assess and support capacity building of these institutions through a planned approach in a phased manner.
Lack of financial institutions sustained commitment for sustainable energy investments	Medium	The on-going efforts or initiatives of SLSEA will be further strengthened to build capacities of the financial institutions.

A.4. Coordination:

The following are ongoing and proposed projects and programs that are closely linked with proposed GEF project.

The government is implementing Sustainable Power Sector Support (SPSS) project for improving the electricity distribution network for the uptake of electricity from large scale wind energy systems promoted through private sector investments. The initial focus includes development of renewable energy road map followed by investments in transmission network. ADB is providing the required loan support to government. ADB is also supporting the government in energy efficiency, and planned to establish a series of laboratories for appliance and equipment testing in the country as part of EnMAP. As part of this project, SLSEA is providing training for energy auditors. The project development team will closely coordinate with the SPSS project management office on the subsumed baseline activities on monitoring compliance with benchmarks, and capacity building for energy managers. Further ADB will be an invited member in the project board meetings so as to maximize the project impact.

In the past JICA implemented the project “Promoting Energy Efficiency Improvement in Sri Lanka” to achieve high efficiency in energy consumption by energy efficiency improvements. With the success of the project, JICA is in dialogue with government to provide loan combined with technical assistance to promote investments in renewable energy, large-scale solar energy systems development, hybrid systems for isolated islands off-grid systems and energy efficiency. Korea International Cooperation Agency (KOICA) is also discussing with the government to provide loan combined with technical assistance in the similar areas. Since the discussions are under progress at the moment, during the project preparation stage (particularly during the LFA), coordination

arrangements will be set up with relevant entities that have ongoing and/or planned projects/programs that have clear links to the project.

B. Description of the consistency of the project with:

B.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NCSAs, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.:

The *Haritha* (Green) Lanka Strategy and Action Plan (HLSAP) was prepared through a national consultative process that focused on management of environment and conservation of natural resources to ensure sustainable development. As relevant strategies the HLSAP emphasizes "optimize energy consumption through energy efficiency in enterprises and promoting substitution of fossil fuels by renewable energies in economic and production sectors" and "Promote supply side & end use energy efficiency." Energy efficiency and demand side management was placed on high priority in Sri Lankan since 1982. In keeping with the global concern on sustainable development, the Government of Sri Lanka has taken a number of policy and program initiatives towards sustainable development which in turn help to mitigate the adverse impacts of climate change. Climate change mitigation measures have been promoted in all the sectors including energy (power, transport, industry, household and commercial), land use, forestry, waste etc.

The Government of Sri Lanka is striving to achieve energy saving equivalent to 20% of the total energy consumption of year 2010, by 2020. The ninth mission of the HLSAP is aiming at "Greening the Industries" and it is expected to bring the majority of industries under the green regime by the year 2016. This plan proposes to phase-out the GHG emissions from industries periodically 10% during 2009 – 2010, 30% during 2009 – 2013, and 50% during 2009 – 2016. It is further estimated that percentages of fuel switching from non- renewable to renewable energy sources from 10% (during 2009-2010) to 75% by 2009 – 2016 (75%). EnMAP of Sri Lanka Sustainable Energy Authority (SLSEA) from 2012 to 2016 serves as a national guide to embark on an integrated and cohesive program of work with a long-term perspective to realize better energy efficiency in energy consuming sectors (state enterprises, industrial sector, commercial sector, health sector (private), domestic sector and street lighting) of Sri Lanka and retain the energy intensity of the economy at 500toe/SDR (million) even in 2017. The proposed project is consistent with these national priorities as it also aims to reduce the energy consumption in different sectors of economy, increase energy efficiency and use renewable energy for electricity generation. The achieved GHG emissions reductions through the implementation of pilot demonstrations under the propose project will contribute to the national voluntary emissions reduction target.

Sri Lanka submitted its Second National Communication (SNC) Report to UNFCCC on 16th March 2012 (http://unfccc.int/resource/docs/natc/lkanc2.pdf). The report very much recognizes nine missions of the HLSAP and government's efforts in its implementation. For example, emissions reduction through emphasizing energy efficiency of end-use sectors and shift to renewable energy when it comes to energy generation. The sectors covered by the SNC are different from what the proposed project is intended to cover and also to the level of inventories at sub-national level. The SNC categorizes sectors as (a) Energy (sub-sectors are per energy carrier), (b) Industrial Processes (sub-sectors are specific to those generating GHG emissions from the production process), (c) Agriculture (sub-sectors are on crop production, livestock emissions etc.), (d) Forests and LUCF; and (e) wastes. The proposed project specifically focuses only on electricity generation in the energy sector, certainly contributing the methodology and GHG inventory data produced at the sub-national and sub-sectoral level which are missing at the moment in the development of GHG inventory for the upcoming Third National Communication (TNC) and Biennial Update Reports (BUR) as part of country obligation under UNFCCC. The proposed project will also contribute to scale up and expand the scope of the GHG inventory to all the sectors across and provinces of Sri Lanka under TNC. This activity will be carried out in close coordination with the Ministry of Environment (MoE), which is responsible institution for National Communication process in the country.

B.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities:

The project objective is to support appropriate mitigation actions in energy generation and end-use sectors towards meeting voluntary mitigation targets in Sri Lanka. The expected outcomes from the various components of the

project that will contribute to the realization of this objective are in line with the GEF-5 climate change mitigation focal area strategic objective CCM-2 (Outcome 2.2: Sustainable financing and delivery mechanisms established and operational); and CCM-3 (Outcome 3.2: Investment in renewable energy technologies increased).

B.3 The GEF Agency's comparative advantage for implementing this project:

UNDP will provide US$ 100,000 as co-financing in-kind towards the personnel cost in monitoring and supervising the project. UNDP has extensive experience in renewable energy and energy efficiency projects aimed at technology identification, piloting decentralized generation and distribution, and designing revenue models. The UNDP Country Office in Sri Lanka (Colombo) is sufficiently well resourced to provide the necessary oversight to support the Government of Sri Lanka in implementing this proposed project. UNDP's assistance in climate change falls under the responsibility of the Environment and Energy Unit (EEU). A professional staff from the country office will be responsible for oversight, project assurance and will represent UNDP in the project board meetings. There is substantial in-house technical expertise within UNDP that can be deployed as required to support the Government. This is backed up also with the technical expertise of the Regional Technical Adviser available in the UNDP Asia-Pacific Regional Centre (APRC) based in Bangkok, Thailand. Also, UNDP's network of global Senior and Principal Technical Advisors provide additional technical oversight and leadership helping to ensure that programs on the ground achieve maximum policy impact. The proposed project is aligned with UNDP-GEF Energy, Infrastructure, Transport and Technology (EITT) Team's Signature Programme 1 (SP 1) i.e. "Promoting access to clean and affordable energy systems and services" and SP 2 "Promoting low emission and climate resilient urban and transport infrastructure".

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):

NAME	POSITION	MINISTRY	DATE
Mr. Basnayake Mudiyanselage Uthpala Dayananda BASNAYAKE	GEF Operational Focal Point	Ministry of Environment, Sri Lanka	29/08/2013

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for project identification and preparation.					
Agency Coordinator, Agency name	**Signature**	**DATE** *(MM/dd/yyyy)*	**Project Contact Person**	**Telephone**	**Email Address**
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