2016

Project Implementation Review (PIR)

of

PIMS 5232

Appropriate Mitigation Actions in Energy Generation and End-Use Sectors in Sri Lanka

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A. Basic Project and Finance Data

Project Implementing Partner:	Sri Lanka Sustainable Energy Authority
GEF Focal Area:	Climate Change - Mitigation
Country(ies)	(SRL) Sri Lanka
Project Start Date:	10-Jun-2015
Planned Project Closing Date:	16-Aug-2016
Total GEF Grant (U$S)	$ 1,890,411
GEF Grant Disbursed as of 30 June (U$S):	$ 99,224.86
Total Co-financing (as planned in CEO endorsement request):	$ 25,880,000.00
Overall Risk Rating	
Overall DO Rating	
Overall IP Rating	

B. Project Contacts and Links

Partner	Contact Name	Email Address
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UNDP Country Office Programme Officer	Tharuka Dissanaiyake	tharuka.dissanaiyake@undp.org
Project Implementing Partner	Mr.Harsha Wickramasinghe	harsha@energy.gov.lk
GEF Operational Focal Point		
Other Partners	Dr.Sunimal Jayathunga of Climate Change Secretariat	sunimal68@hotmail.com
UNDP Technical Adviser	Rakshya Thapa	rakshya.thapa@undp.org
UNDP Programme Associate	Ms. Karakate Bhamornbutr	karakate.bhamornbutr@undp.org

Project website, etc.	Some project promotional leaflets/flyers/newsletters are being drafted will be available in the near future.
Links to media coverage	

C. Project Summary

Brief Project Description

Sri Lanka is highly dependent on imported oil to meet its energy needs with 49% of the primary energy supply coming from imported fuel, where 12% of the total government budget is used for electricity generation alone. This is leading to a heavy reliance on imported fossil fuels and increased GHG emissions. The National Energy Policy of Sri Lanka seeks to diversify supply mix with renewable energy resources whilst seeking to reduce energy demand through demand side management. The Renewable Energy

Resources Development Plan seeks to achieve 20% from renewable energy resources by 2020 and 30% by 2030 as part of the national strategy to reduce GHG emissions through appropriate mitigation actions (NAMA). Energy Management Plan (EnMAP) seeks to achieve energy savings from the promotion of EE measures. Often the GHG savings and the cost-benefits of these low carbon interventions are not systematically quantified and their benefits remain obscure and done on ad-hoc basis. It is difficult for sub-national entities to assess the impact of their NAMA interventions at the sectors and sub-sectors level.

In order to fill these gaps, the development of a robust, transparent and functional NAMA framework along with clear inventory and MRV system with supporting governance and oversight (NAMA Secretariat, NAMA Coordinating Entity, NAMA Implementing Entity, MRV Committee, and NAMA Registry) is needed. Such framework will systematically quantify GHG savings and benefits of the mitigation interventions using a bottom up approach to aggregate from the provincial and sub-sector levels to the national and sectors level. Furthermore, such a transparent framework will open up opportunity to access regional and international climate funding. In order to achieve this, the project will 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

To test and verify the framework, this project will seek to overcome the regulatory, institutional, technical, financial and social barriers for the scaling up of RE and EE NAMA through the dissemination of 1,000 bio-digesters, 1,300 high efficiency motors in tea factories, and 205 solar PV net metering systems with battery storage. Furthermore, the project will:

1. Develop a robust provincial inventory system that could be updated periodically and aggregated at the national level using web-based EnerGIS database management system
2. Develop a decision making tools such as MACC tools for analyzing and prioritizing a pipeline of bankable NAMA that could be implemented
3. Leverage public, private and CSOs resources through the NAMA Implementing Entity for the implementation of bankable RE and EE NAMAs based on viable and cost effective business models to incentivize value chain actors to reduce supply risks and create demand and
4. Develop a robust and transparent MRV system that are accurate, reliable and credible and avoid double accounting.

During the implementation, in addition to GEF fund of USD 1,790,411 and UNDP fund of USD 250,000; the project will be supported by in-kind contribution and parallel activities from the government (SLSEA, MERE) to an amount of USD 3,400,000 and USD 230,000 and from private sector with an amount of USD 22,000,000. Thus, total resource for project implementation is USD 27,670,411.

D. Progress toward Development Objective

Objective/Outcome	Description	Description of Indicator	Baseline Level	Target Level at end of project	Level at 30 June 2016
Objective	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	No. of implemented NAMAs in the energy generation and end use sectors by EOP	0	3	The Project is too early in the implementation process to be reported against the final objective. However, two Renewable Energy (RE) and one Energy Efficiency (EE) technology applications have been identified, and these three technologies will be implemented as Nationally Appropriate Mitigations Action (NAMAs) under the Project in next few years (2016-2018). These technology applications are; 1. Technology: Solar PV net-metering with Battery Storage Sector: Renewable Energy power generation Focus group/beneficiaries: Domestic consumers Locations: Two green zones of the country;

					Kotte and Kurunegala 2. Technology: Biogas as a solution for waste management Sector: Renewable Energy power generation Focus group/beneficiaries: Domestic consumers, small and medium scale commercial establishments, institutional establishments Locations: Northwestern, Uva, Sourthern and Central province 3. Technology: High Efficiency Motors Sector: Energy Efficiency in industrial end-users Focus group/beneficiaries: The tea industry/plantation sector (mainly private sector) Locations: Uva, Central, Sabaragamuwa and Sourthern provinces The detailed implementation arrangements and activities completed to date in the implementation of

					NAMAs are detailed under outcome No.03
Oucome 1	Established and regular update of renewable energy utilization baseline & energy intensity reference baselines for the energy generation and end-use sectors	No. of provinces that regularly conduct sub-sectoral GHG emission inventories of their energy generation and end-use sectors by Year 4	0	3	The Project exploring the possibility of storing the provincial, sectoral and national inventory and proposed MRV system (outcome No.04) into the existing EnerGIS system (of Sri Lanka Sustainable Energy Authority) with the required upgradation. The possibility of linking this energy data management system with the future Green House Gas (GHG) inventory mechanism of the Third National Communication is also under consideration. Once developed this will be a web-based system that is efficient, reliable and can be updated with easy access and sharing of information via intranet/internet from sub-national or sectoral level to national level. The Project team has conceptualized how to

					capture energy intensities and GHG saving data of the three selected technology application for piloting (i.e. Solar PV net-metering, HEMs and biogas). Key progress to date can be detailed as follows; A review of the existing EnerGIS database management system of Sri Lanka Sustainable Energy Authority (SLSEA) is underway. It has been identified that the existing EnerGIS database is only being used for resource assessment, resource allocation and related development activities of New Renewable Energy resources. Recently, this EnerGIS, has been upgraded to ArcGIS 10.3 by the SLSEA, and it will facilitate multi-criteria analysis, spatial techniques, 3D and statistical analysis, network analysis, image analysis and has the provision to

					accommodate energy supply and demand spatial analysis as well as the possibility to incorporate other sector applications like transport planning. The Project team had an initial discussion with the local service provider of this ArcGIS software during this EnerGIS upgradation process. The discussion is based on how to customize this ArcGIS software and available system to accommodate the project requirements. This discussion will be extended under the advice of the Energy/GHG data inventory expert. Based on this review the Energy/GHG inventory expert will recommend how to further improve the existing data management system based on international accepted best-practices and guidelines on

					Energy/GHG inventorying.
		No. of provinces that have established and operational sub-sectoral GHG emission inventory system by Year 4	0	3	Work has not fully commenced. Northwestern, Uva, Southern and Central provinces are the four provinces that have been identified to establish and operationalize sub-sectoral GHG emission inventory systems by Year 4. The project has planned the sub-national/provincial and sectorial level initial capacity building on data gathering and inventorizing of energy data, and 5 training workshop are scheduled to be conducted between Sept, 2016 and March, 2017 in five different locations (Colombo, Galle, Badulla, Kurunegala and Kandy) in the four provinces. The Project team has identified potential personnel that could be utilized for the data collection, verifying

					and reporting process at provincial and sectoral level (in particularly, for these selected three NAMAs). They are; At provincial level: Livestock Development Inspectors, Economic Development Officers, Agricultural Inspectors of respective provinces. Sectorial level: Energy managers (trained on energy efficiency and energy management in industrial sector by SLSEA). Meter readers of the electricity utility (Ceylon Electricity Board and The Lanka Electrify Company) covering the power generation sector. These personnel will be provided with necessary training and capacity building requirements on this specific subject.
		No. of provinces that utilize the functioning web-based EnerGIS GHG inventory system by year 1	0	1	Work is in the initial planning stages. The Project has identified the North western province where both

					solar Net-metering (in Kurunegala Green Zone) and biogas pilot technologies are being implemented as the potential starting province for this functional web-based EnerGIS GHG inventory.
Outcome 2	Prioritized Nationally Appropriate Mitigation Actions (NAMAs) in the energy generation and end-use sectors are identified and designed	No. of provinces that established MAC curves for energy sector by year 1	0	3	Work has not fully commenced. However, the following key activities have been completed. The project has recruited and International Consultancy(IC) team to provide advisory service to the Project team on Energy/GHG inventory (outcome 1), MACC analysis (outcome 2) and MRV (outcome 4) of NAMA. The concept GHG inventorying, MRV establishments, MACC analysis and related NAMA governance are relatively novel concept to the IP, and the necessity of external assistance requirement was clearly identified]. The

					first mission is planned for Aug, 2016. The Project team has planned to conduct one-day workshop programme on MACC analysis in Colombo during the ICs first mission in Aug, 2016.. The Project is to extend the results of this workshop as a comprehensive MACC analysis using reliable primary and secondary data (from provincial, sectorial level). The project has planned to explore further any other Multi-Criteria Decision Making tools which will incorporate socio-economic development and environmental aspects for the prioritization of appropriate mitigation cations. This will be done on the advices and the guidance of the selected IC.
		No. of NAMA EE/RE projects that are designed based on the prioritized NAMA projects and the detailed MAC curves for the energy	0	3	Three RE & EE NAMA projects has been identified after project stakeholder

		generation and end-use sector by Year 4			consultations. These three RE and EE NAMA technologies will test and verify the overall NAMA framework (i.e.Solar PV net-metering with battery storage, biogas as solution for waste management and High Efficiency Motors). A comparative analysis for the pre-selection of these three technologies is expected during the MACC analysis above. These three RE & EE NAMA projects have been designed in detail and are being implemented, and further information and progress of these implementations are provided under outcome 3.
Outcome 3	Identified private and public sector entities implemented prioritized appropriate mitigation actions for the achievement of Sri Lanka voluntary mitigation target	No. of identified fully capable and qualified private and public sector entities that are interested in funding prioritized NAMA projects by Year 2	0	2	The project has identified two capable and qualified private and public sector entities which are the Sri Lanka Sustainable Energy Authority (public sector entity which is

					also the project implementing partner) and the Planters Association of Ceylon (PAC) which is the private tea producers/industry collaboration. The Sustainable Energy Authority has confirmed their interest to extend their RE & EE programmes in selected (Project) provinces of Sri Lanka, and these programmes include establishment of energy baseline, concessionary financing for establishment of biogas units and technical support to the selection of appropriate technologies for RE and EE promotions. Similarly, tea industry companies of PAC are actively looking for solutions to reduce their electricity consumption to improve productivity and competitiveness whilst reducing their

					carbon footprint. Initial commitment of USD 4 million from the PAC as cost share to demonstrate the benefits of installing High Efficient Motors (HEMs) in tea factories has been secured. Initially the project will assist these tea factories to invest in HEMs and achieve financial viability through matching re-bate scheme (50% gradually reducing to 20%). These companies will invest in HEMs their own after project co-financing is gradually removed in the future. The Project will leverage these financing partnerships to deliver expected project outcomes.
		No. of NAMA EE/RE projects that are designed and implemented based on detailed MAC curves for the energy generation and end-use sector by Year 2	0	3	Detailed implementing plans are available for the selected three NAMA projects (i.e., Solar PV net-metering with battery storage, biogas as solution for waste management

					and High Efficiency Motors). Business and financial models involving public private partnership have been developed for the implementation of these NAMA projects. These three RE & EE NAMA projects has been identified after project stakeholder consultations, and will be used to test and verify the overall NAMA framework. A validation for the pre-selection of these three technologies is expected during the MACC analysis in which above three NAMA projects are included.
		No. of individual projects that constitute the countrys NAMAs by Year 4	0	1,000 biogas systems 1,300 tea factories 205 solar systems	Solar PV: The Project/pilot demonstration will be conducted in two phases. In the first phase, 20 solar PV net-metering systems are installed as a trial to verify technical feasibility of the selected technology. The project is in the

					planning phase of installing 20 solar PV system, and will be completed in Aug-Sept, 2016. Further information on the progress can be summarized as follows; Some R&D aspects has been incorporated in to the first phase where rebound effect of beneficiaries, battery technologies (introducing Li-ion battery technology) and grid-independent operation during peak hours. The Project has been in collaboration with the utility (CEB & LECO) for proposed R&D activities. Moreover, strong emphasize to look a way to reduce the financial burden of low-end consumers on the government (and the utility) from the grid were made by the Ministry of Power and Renewable Energy (MoPRE). The Project is looking at the technical feasibility and corresponding

					financial viability of this request, and will be verified during the Trial phase. The Project has called for application from beneficiaries, and they will be short-listed during the month of July, 2016. In parallel, the Project has called for Request for Proposals from shortlisted technology suppliers, and they will also be selected for the trial phase in July, 2016. Biogas: A rapid assessment of current SLSEA biogas programme in two provinces (North-western and Southern) including successes, issues and barriers and causes of failure if any is being conducted. The results will be used for further strengthening the project implementation mechanism and approach. Beneficiary selection for biogas piloting is underway, and the project has received

					approximately 300 applications to date. 54 beneficiaries of NWP and SP have been short-listed, and their applications have been sent for the regional biogas committees verification. It is expected that these units will be installed in these two provinces in July-Sept period. High Efficiency Motors (HEMs): Installation of HEMs is being carried out in two phase. The trial phase is where 24 HEMs will be installed in five selected tea factories to test and field verifying of different types and brands of motors which are available market. The Project expects this trial phase to be a showcase to the same industry promoting scaling up actions. The trial phase has been planned in a way to facilitate further EE improvements in the same industry like the application of Variable

					Speed Drives (VFDs) and applications of efficient fans/blowers. In the full scale implementations, individual tea factory has to come up with own financing while the Project assist them reaching financial sustainability of their investment by providing the proposed matching rebate (up to 50%, 30%, and 20% in 3 stages gradually reducing available project financial assistance). The Project has pre-selected 2 tea factories of Tea Research Institute (TRI) based on their full courtesy, commitment and available resource for the trial phase and related R&D activities. TRI is a semi-government organization, and acts as the focal point for disseminating new technologies related to tea cultivation and processing. 18 HEMs

					(for withering process units) capacities ranging from 3.0 -7.5 kW and 6 HEMs (for rolling process) capacities ranging from 11.0-15.0kW are being procured and will be installed in five tea factories in Aug/July 2016. In parallel, 5 VFDs (capacities ranging from 3.0-7.5 kW) will also be installed in these five tea factories.
		No. of operational Private-funded NAMA projects by EOP	0	1 (high efficient motors in tea factories)	Private-funded NAMA project (High Efficient Motors in the tea industry) implementation has started, and the progress can be summarized as; HEMs trial piloting are planned in five tea factories of which three tea factories are privately owned. In these tea factories, 14 HEMs and 3 VFDs will be installed in Aug/Sept 2016. The project is to select beneficiaries for the full scale

					implementation from factories of private tea plantation. sector where co-financing for the promotion of HEMs is provided In support of this, the tea industry (i.e. companies under the Planters Association of Ceylon) have agreed to commitment USD 4 million as co-financing to demonstrate the benefits of installing high efficient motors in tea factories.
Outcome 4	Accurate measurement and accounting of actual GHG emission reduction from mitigation actions in the energy generation and end-use sectors	No. of NAMA projects with GHG ERs correctly verified by the established and operational MRV systems for mitigation actions by Year 4	0	3	Work has not commenced.
		No. of projects in the energy generation and end use sectors that are registered in the National NAMA registry by EOP	0	3	Work is limited to one stakeholder discussion which was held in Dec, 2015 conceptualizing probable NAMA governing structure and Monitoring, Reporting and Verifying(MRV) frame work for Sri Lanka NAMAs which is being implemented under the project and for future NAMAs. These

					framework will be presented for the IC team in Aug, 2016 and the project team expects to get their advisory and international experience from best practices around the world.

E. Annual Project Quality Assurance Assessment

Project Governance	
Are at least 40 percent of the personnel hired by the project, regardless of contract type, female?	N
Dates of Project Steering Committee/Board meetings during reporting period (30 June 2015 to 1 July 2016)	October 2015 February 2016
Did the Project Board function as intended this reporting period?	Y
Please add any comments on project governance.	The executive partner of the project is Ministry of Power & Energy (MoPRE), Sri Lanka. The responsible parties for the implementation of the project are Sri Lanka Sustainable Energy Authority(SLSEA) of MoPRE and the Climate Change Secretariat (CCS) of the Ministry of Mahaweli Development & Environment (MoMDE) where the component 1, 2 and 3 are executed by SLSEA and the component 4 is under CCS. The core project team was originally comprised of two sector specialists to handle solar PV and High Efficiency Motors (HEM) implementations and one project coordinator who was also handling the biogas implementation in the beginning. This was different from 4 full-time members arrangement proposed for 4 main components. The project coordinator left the project in Feb-2016, and solar PV sector specialist became the project coordinator in April-2016. In May-2016, a national technical consultant was hired to engage full-time with the project team, and a biogas consultant on part-time, was hired in June 2016 to handle the biogas implementation. A joint project coordinator will manage the MRV component of the project and support the CCS Third National

	Communication(TNC), is currently being recruited. Another national technical advisor part-time has been involved from the inception of the project.
Annual Work Planning	
Have project inputs been procured and delivered on time and budget this reporting period?	N
Will the project be able to close on time as planned?	Y
Please add any comments on annual work planning.	The actual delivery is running behind the annual work planning targets due to the delays executions and recruitments. With regard to component 1, works executed has been limited to reviewing of existing energy data platforms, and resources. The work on provincial, sectorial and national inventorying is yet to commence. Energy baseline establishment can be done only after this inventory system is in function. Similarly, component 2 which the International Consultancy(IC) team is expected to assist, also has a slight delay despite their selection was completed in February, 2016. The IC were delayed until the full team members are on board and operating. The first mission of IC is schedule on August 2016. However, under project component 3, all the implementation works of 3 selected technologies are under way in spite of slight delays and fluctuations. For biogas, a MoU was signed with Northwestern Province whist Southern and Central province MoUs are scheduled to be signed in July. A previously signed MoU is available with Uva province and it will be renewed in August. It has been decided to carry out pilot trials for both solar PV and HEM NAMA projects to identify the realistic emission reductions and to optimize full-scale implementation. The potential HEM suppliers have been selected and installation is scheduled to be carried out in August. The solar PV system installation is scheduled in August/ September as the supplier selection process is on the verge of completion. With regard to the component 4, the responsibilities of CCS and SLSEA has been identified and the execution will be carried out once the IC team in on board, in parallel with technology implementations.
Stakeholder engagement and target groups	
Please discuss how stakeholders and target groups were directly engaged in the decision-making, implementation and monitoring of the project this reporting period.	Stakeholder involvement for decision-making was given high priority. The project team met SEA officials regularly and more specifically when decision-making was needed. Apart from that stakeholder engagement during NAMA piloting can be detailed as follows; Officers of PMU and SEA visited the four provincial councils and consulted the chief secretaries, secretaries of relevant ministries and other officials to discuss a detail implementation plan for piloting bio gas installations (May-June, 2016). Further it was

	discussed how this work could be incorporated in to the provincial energy plan and utilize their existing field officers for implementation and monitoring of the project component .Finally implementation methodology was developed and agreed upon through an MOU. Two provincial councils have appointed a special committee for the implementation and M&E of biogas piloting. Similarly, the project team visited the Tea Research Institute (TRI) and their factories in Feb, 2016 and a detailed plan was discussed for HEM pilot trials. In parallel, three private sector tea producers were selected (after calling applications) and visits were made to their factories for the planning of HEM piloting. The project team also met and discussed various aspects of the electricity utility company (CEB and LECO) for solar PV piloting.
Monitoring & Evaluation (M&E)	
Please discuss how the project M&E Plan was implemented and used to support effective project management this reporting period (e.g. please consider whether progress data against the indicators in the project results framework was reported using credible data sources and collected according to the M&E plan, including sex disaggregated data as relevant; whether lesson learned were used to take corrective actions as necessary; whether evaluations were conducted following the UNDP-GEF guidance available at www.undp.erc.org; and other issues as relevant).	Project process are presented to the project executing agency at the Project Board Meeting (PBM), and issues discussed at the PBM are being implemented. PBMs were held in Oct, 2015 and Feb, 2016. Similarly, the Project Management Meetings are quarterly held, and project progress is reviewed against Annual Work Plan and the results framework. Core members of the project regularly meet the project implementing partner Sustainable Energy Authority on the same purpose. The project team frequently contacts the National Technical Advisor who reviews the project progress against the technical requirements of the project. Biogas NAMA piloting specific M&E framework will be performed by the provincial biogas committees.
Social & Environmental Standards	
Were any new social and environmental impacts and risks identified this reporting period?	N
Please discuss how social and environmental impacts and risks were managed this reporting period, as relevant.	N/A

F. Ratings and Comments on Project Progress

Project Progress toward Development Objective

Role	2016 Rating	2016 Comments
Project Manager/Coordinator	Moderately Satisfactory	The DO are broadly defined (many of the set targets toward the end-of the project) and the cumulative progress (within the first 9 months from the actual start) are not significant against the EOP targets. However, Overall project implementation is positively progressing and a firm groundwork for a successful project implementation has been able to be established during this short period. The project has identified few gaps and challenges hindering the initial implementation of the project. Limited in-house and institutional capacities available on the overall NAMA concepts has been a key challenge. Lack of commitment from some of initially identified stakeholders, the project implanting partnersâ internal human resource availability and commitment towards the project are noticeable barriers for the successful implementation of the project. The project needs to effectively manage these gaps and challenges in order to achieve the project development objectives and targets in the next year. The activities under the component 1, which is business-asâusual energy generation and end-use sector baselines at national and sub-national level, have initiated with reviewing process of Sri Lank Sustainable Energy Authority (SEA)âs existing energy database, resources and internal capacities. The usage of SEAâs existing energy database âEnerGISâ has been limited to Renewable Energy (RE) resource allocation process. The Project requirement to upgrade and update the same platform to be used as a comprehensive energy & Green House Gas (GHG) saving inventory. Similarly, some provisions to improve and enhance âSri Lanka Energy Balanceâ, which is web-based platform on aggregated energy statistics, have been identified. Sri Lanka Energy Balance is being complied in ad hoc manner to some extent and gathers aggregated energy data only. The SEA has already upgraded âEnerGISâ to ArcGIS 10.3 in Feb, 2016, and possible link between EnerGIS and Sri Lanka Energy Balance will be established. Energy intensity and GHG saving baselines for energy sector technology applications will be established after above improvements are completed. The project is about to select a local service provider for this requirement in particularly for Information and Communications Technology (ICT) requirements. In parallel, SEA continues energy benchmarking in commercial & industrial sectors and technology applications (In particular, energy appliances). SEA has published the energy benchmarks (both electrical and thermal) for tea sector which is one of the end-user sector of the NAMA project in 2015. Many of the planned activities under the component 2, mitigation options for the energy generation and end-use sectors has not commenced yet as this component is partly dependent on the progress of component 1 (mainly energy & GHG saving intensities of RE & EE activities). Lack of in-house capacities and resource (eg. knowledge and primary & secondary data requirement) for the prioritization of RE & EE activities (supported vs volunteer appropriate mitigation actions) by using available tools (Marginal Abatement Cost Curves [MACC], Multi-Criteria Decision Making process) will be managed through external resources and advisory service. An International Consultancy (IC) team which consists of a senior energy expert, climate finance expert, energy/GHG inventory expert and MRV expert, has been appointed for this task, and they will start groundwork of the project in Aug, 2016. The same IC team will assist in component 1 & 2 of the project. A local service provider team will act as the local counterpart of this IC team, and few activities have been scheduled to Aug, 2016 which include conducting one-day capacity building workshop on MAAC analysis. The implementation of the component 3, implementation of appropriate mitigation actions in the energy generation and end-use sectors is progressively moving ahead. The project has identified two Renewable Energy (RE) and one Energy Efficiency (EE) technology applications which are now being implemented as NAMA projects. These

		selected NAMA pilot projects are High Efficiency Motors in the tea industry (1,300 unit implementations in 130 tea factories), solar PV net-metering with battery storage for domestic consumers (150 units) and biogas as a solution for waste management (1000 units). The detailed implementation plans for these three pilot NAMA projects and implementation mechanisms are now in place with some initial start-up delay for successful project delivery. The Project has a list of qualified technology suppliers for supply and installation of solar PV net-metering systems and HEMs. The project has identified these NAMA pilot project implementations of significance important on which other main project components/frameworks are established and demonstrated (project component #1, #2 and #3). Thus, few trial implementations of HEMs and Solar PV systems are being carried out firstly. 20 solar PV systems are in the procurement stage whereas 24 HEMs are being installed in five selected tea factories. Biogas NAMA piloting has been planned in four provinces (Northwestern, Uva, Southern and Central) under the SEAâ□□s existing implementation mechanism. The Project has make a significant effort to coordinate between SEA and provincial level authorities for this task, and lack of institutional and political commitment has been noticed from the Central province. Some technical advisory requirements for Southern and Uva province have been identified and they are to facility these requirement through biogas technology specialist recruited very recently. A total of short-listed 54 biogas unit requests are being thoroughly evaluated in Northwestern and Southern provinces, and will be implemented within the next quarter. Comparatively lower levels of activities have been carried out under the project component 4, MRV system and NAMA registry of energy generation and end-user sectors. One stakeholder discussion was held in Dec, 2015 conceptualizing probable NAMA governing structure and Monitoring, Reporting and Verifying(MRV) frame work for Sri Lanka NAMAs which is being implemented under the project and for future NAMAs. These framework will be presented for the IC team in Aug, 2016 and the project team expects to get their advisory and international experience from best practices around the world. Overall, the project implementation mechanisms are being formalized whereas necessary & crucial partnerships have been established. This includes key project stakeholder which are government (project implementing agency itself, provincial level authorities, ministries and officials), and non-government, private investors (mainly tea industry), general public (direct and indirect beneficiaries), private sector service providers (Renewable Energy and Energy Efficiency related services and suppliers) and R&D partners (Tea Research Institute). These have been detailed under the Development Objective Progress. New partnerships and opportunities are being continuously explored and some provision has been allocated to accommodate such initiatives such as expansion of on-going pilot demonstration to other provinces, accommodating some of R&D recommendation suggested by the project implementing partner, policy recommendation based on some pilot demonstration in future. The structure of the Project Management Unit (PMU) has had some changes and drawbacks over the short duration. The PMU which was established in Oct, 2015 with 2 sector specialist (for HEMs and Solar PV NAMA projects) and one project coordinator who was also responsible for biogas piloting management structure. The project coordinate left the team in Jan, 2016 delaying some of the planned activities, and the Solar PV sector specialist took over tis post in April, 2016. A new position was created as National Technical Consultant at the same time. Lack of commitment from few project stakeholders (political willingness for the biogas piloting programme from Central province, and the Climate Change Secretariat in the involvement of implementation of component 4 of the project due to lack of internal resource within them) has been noticed, and recover up strategy is in place (alternative province for biogas piloting is being considered, and a new recruitment facilitating work at CCS). The core team of the project frequently discusses similar and related matters with the implementing partner(s) and takes necessary action and follow alternative strategies. Long-term sustainability aspects after project life cycle are being considered and will be integrated into the project. Few key initiatives like gradually phasing out of subsidy scheme introduced for the promotion of the selected appropriate mitigations actions

		(i.e. three pilot technologies; biogas, solar PV net-metering with battery storages, and High Efficiency Motors) under project component 3, NAMA governing structure and MRV mechanism which is to be introduced and financially assisted by the project in first few years gradually transferring to the implementing partner(s) and responsible entities with related costs with long-term sustainable financing plan under project component 4. The overall implementation of the project components are delayed against the Annual Work Plan timeline (too early in the implementation process to report against the EOP), but the Project has some focus on the final project outcome. The project team intends to achieve the projects major relevant global environmental objectives and benefits with fast tracked implementation over the next year. Effort is needed to avoid any shortcoming of stated objectives and expected outcome as stipulated in the project document in coming years.
UNDP Country Office Programme Officer	Moderately Satisfactory	The project is currently in the initial phase of implementation. The technical cadre has implemented various activities in relation to the project outputs and has developed contacts with government provincial agencies that have agreed to implement the project activities within their provinces. Baseline scenarios have been studied thoroughly. In addition, SLSEA already conducted many activities that are relevant to the mitigation of green house gases in the world. The core areas of the organization are development of renewable energy implementing energy efficiency and creating a knowledge society in energy. Furthermore, later version of Geographic Information Systems were established at the SLSEA which would enable to achieve the development goals in the NAMA project. Procurement processes have been initiated for all three demonstration technologies. Solar technology, High efficiency motors and biogas related procurement were advertised and responses are being analysed for the selection of the beneficiaries. After technical evaluation, rapid financial and physical progress would be seen. However, some implementation problems occurred during project implementation in 2016. The major problem faced by SLSEA was that the project inception was held in September, and the budget allocations through a government vote by Treasury has not been received yet. Therefore, difficulties were faced as the implementing agency to operate the project. Therefore, actions are being taken to obtain the Cabinet approval for the project in addition to the approval obtained from the External Resources Department. The relevant stakeholders are having hopes with the new project, and the institutional capacities and commitments for the project have also increased within the 9 months passed. More focus should be given to implement proper mechanisms within the Provincial level set-up and the Project Management Unit and the Implementing agency. Furthermore, increasing the institutional capacities through technology transfer should be a key requirement in the project success. Since the project has already established proper network with the stakeholders, required capacities are available with the implementing agency, facilities and equipment are available for the project implementation, it is assumed that the project will function in the next years well. However, there are limitations with the human resource allocation for the project with the limited cadre of SEA. The issue should be immediately taken care of to function the project smoothly and efficiently.
Project Implementing Partner	Satisfactory	The project is currently in the initial phase of implementation. The technical cadre has implemented various activities in relation to the project outputs and has developed contacts with government provincial agencies that have agreed to implement the project activities within their provinces. Baseline scenarios have been studied thouroughly. In addition, SLSEA already conduct many activities that are relevant to the mitigation of green house gases in the world. The core areas of the organization are development of renewable energy implementing energy efficiency and creating a knowledge society in energy. Furthermore, later version of Geographic Information Systems were established at the SLSEA which would enable to achieve the development goals in the NAMA project. Procurement processes have been initiated for all three demonstration technologies. Solar technology, High efficiency motors and biogas related procurement were advertised and responses are being analysed for the

		selection of the beneficiaries. After technical evaluation, rapid financial and physical progress would be seen. However, some implementation problems occurred during project implementation in 2016. The major problem faced by SLSEA was that the project inception was held in September, and the budget allocations through a government vote by Treasury has not been received yet. Therefore, difficulties were faced as the implementing agency to function the project. Therefore, actions are being taken to obtain the Cabinet approval for the project in addition to the approval obtained from the External Resources Department. The relevant stakeholders are having hopes with the new project, and the institutional capacities and commitments for the project have also increased within the 9 months passed. More focus should be given to implement proper mechanisms within the Provincial level set-up and the Project Management Unit and the Implementing agency. Furthermore, increasing the institutional capacities through technology transfer should be a key requirement in the project success. Since the project has already established proper network with the stakeholders, required capacities are available with the implementing agency, facilities and equipment are available for the project implementation, it is assumed that the project will function in the next years well. However, there are limitations with the human resource allocation for the project with the limited cadre of SEA. The issue should be immediately taken care of to function the project smoothly and efficiently.
GEF Operational Focal point		
Other Partners		
UNDP Technical Advisor		

Project Progress in Project Implementation

Role	2016 Rating	2016 Comments
Project Manager/Coordinator	Moderately Satisfactory	General: Some of the activities of the Annual Work Plan are being implemented & delivered with some delays. In particular, design and implementation of prioritized mitigation actions (Renewable Energy and Energy Efficiency pilot demonstrations) on which other main project components/frameworks (energy/emission inventory and database, proposed MRV mechanism) are established and demonstrated. However, the establishment of crucial and necessary links with relevant stakeholders have been established, and major procurement requirements which include local and international technical consultancy services, technology suppliers have been completed. These would fast track and facilitate the remaining annual deliverable and project mid-term target. Project governance and management: During the reporting year, two project board meetings were held, and critical issues were discussed. Among them few main concern are the financial viability of selected technologies for demonstration purpose after project lifecycle, disbursement of project financing (through the implementing agency) and actual mechanism. Recommendations of these project board meetings and regularly held project management meetings are being implemented. Financial Progress: Financial progress of the project can be summarized as 10% of actual expenditure (of allocated budget for 2016) for the first six months of the year, and 45% (of allocated budget for 2016) including short term commitments. The major share of this yearâ??s budget has been allocated for pilot project implementations which will start from August, 2016 and significant financial progress towards the end of this year is expected though this is not compliant with the original plan. Risk & Risk Management: Project risk log is being maintained. Few notable project risks have been identified, and risk mitigation or management is being

		followed. For example; â¢ Lack of commitment from some of project stakeholders â managed/mitigation by frequent engagement with them/follow alternative strategies to get them involved/assist them with required resources. â¢ Initial project/organizational structure issues mainly employee leaving the project (i.e. project coordinator)- new recruitment(s) Timely implementation of some components of the project is affected by the above risks, and effective management responses and mitigatory actions are being undertaken to avoid further delays in the project. During the reporting period no social or environmental safeguard risks or grievance was reported. Adaptive Management: The project team came across several implementation issues at project activity levels ranging from technical to organizational set-up at national/subnational level, and necessary actions to address these issues were executed. Monitoring and Evaluation: Existing Monitoring and Evaluation framework/plan is being followed. For the overall project management, a comprehensive Monitoring and Evaluation Plan is being finalized with fine-tuning of indicators, and means of verification. Necessary financial allocations have been made to accommodate this.
UNDP Country Office Programme Officer	Moderately Satisfactory	The Project was signed in June 2015 and was fully operational in October 2016. As such, up to the first reporting period which ended on June 30 2016 the progress has been moderate and even a little below expectations. The team has had personnel changes even in the first quarter of implementation, with the recruited Project Manager migrating at the beinging of 2016 and another technical specialist position also falling vacant right at the turn of July. There were some additional delays in clearing the technical specifications for the pilot demonstrations and signing the MOUs with Provincial Governments for the implementation of the biogas related pilot demonstrations that have also negatively impacted delivery of the project during the first two quarters of 2016. The project is also being managed by the same team from the Sustainable Energy Authority who are national focal points for the biomass energy project, and hence there has been more government attention on the biomass project which scored a negative mid-term review last year and has required extra effort to put on track. However on the positive side, the project has procured the services of an international consultancy company to advise on the establishment of the NAMA framework and local service companies to support this effort. It is expected that delivery in the next two quarters will commensurate with the planning carried out thus far on the pilot demonstrations and the inventory building, MRV system establishment etc. The project has also managed to catalyse a South-South grant from China of around USD 1 million for support to modern biogas systems for SMEs and small agro-industries.
Project Implementing Partner	Moderately Satisfactory	The project is in line with the annual work targets. Physical assets are already acquired for the project and technically competent staff is available at SEA to function the project. However, there are difficulties is assigning full time staff for the project due that SEA already lack in the quantity of human resources and the wide range of responsibilities SEA has to focus currently. For example, the same cadre of the project 'Promoting Sustainable Biomass Energy Production and Modern Bio-Energy Technologies in Sri Lanka' (PIMS 4226) is allocated as the key project cadre in the NAMA project dure to limited number of professional staff in SLSEA. Furthermore, one full time postion of the UNDP cadre is also vacant. Therefore, immediate action should be taken to approve the project cadre suggeted by the Project Document by the Department of Management Services, Sri Lanka and function the project as a collaborative team. Risk is associated with time to time variance of the interest in the Provincial officials due to change of Ministerial portfolios, change of staff, etc. Therefore, proper short and medium term output based fund release should take place.
GEF Operational Focal point		

Other Partners		
UNDP Technical Advisor		

G. Project Planning

Key project milestone	Status	Original Planned Date (Month/Year)	Actual or Expected Date (Month/Year)	Comments
Inception Workshop	**delayed/completed**	**-**	**September - 2015**	**Though the CEO endorsement came in jan 2015, the signing of the project document was delayed to June 2015, due to the government change and resulting in the renewable energy subject being moved from Ministry of Environment to Ministry of Power.**
Mid-term Review	on schedule	6 - 2017	-	N/A
Terminal Evaluation	on schedule	June - 2018	-	N/A
Project Closure	on schedule	December - 2018	-	N/A

H. Critical Risk Management

Critical Risks Type(s)	Critical Risk Management Measures Undertaken in 2016
Operational	Risk - The leaving of project coordinator who was managing the project and biogas implementation in January 2016 created an instability to the project structure. It created an imbalance of work scope of other project members with imposed extra responsibilities. Impact â€“ Project implementation delay Mitigation/Management â€“ A national technical consultant was hired full-time to support the team.
Operational	Risk â€“ Climate Change Secretariat responsible for the fourth component of the project has found it difficult to fully support the project implementation mainly due to the lack of relevant and qualified personnel especially to be assigned to this project. Impact - Delay in project implementation. The project component 4 has a comparatively lower level of progress to date. Mitigation/Managementâ€“ A project coordinator will be recruited who will jointly manage the NAMA 4th component and the TNC.

I. Environmental and Social Grievances

Related environmental or social issue	
Status	

Significance	
Detailed description	

J. Communicating Impact

Tell us the story of the project focusing on how the project has helped to improve people's lives.
"Sri Lanka Sustainable Energy Authority, is the apex government institution promoting Renewable Energy (RE), Energy Efficiency (EE) and related policies, has identified this Project as a great opportunity to facilitate the market transformation for the adoption of Renewable Energy and Energy Efficiency technology applications. The project will reduce risks associated with promoting novel technology applications. For example, we had identified that the tea industry sector had a lot of potential for energy saving by introducing modern technologies and equipment. So we believe that introduction of High Efficient Motors retrofitting old units under the Project as a NAMA intervention is very important and timely requirement. There is an up-scale potential within the industry. The success can be replicated to other industrial sectors, and SEA will actively promote such initiatives. These initiatives have multiple direct and indirect benefits like saving energy, sustainable production and consumption, reducing countryâ€ ™s dependency on imported fossil fuel (and related economic return), getting the involvement of the private sector in the sustainable development etc. The ultimate beneficiaries would be the general public at the end." A quote from Mr. M. M. R, Pathmasiri, Director General of Sri Lanka Sustainable Energy Authority
What is the most significant change that has resulted from the project this reporting period?
N/A
Describe how the project supported South-South Cooperation and Triangular Cooperation efforts in the reporting year.
N/A

K. Partnerships

Partners	Innovation and Work with Partners
Civil Society Organisations/NGOs	N/A
Indigenous Peoples	N/A
Private Sector	The contribution and partnership with the private sector is mainly highlighted in HEM piloting. In HEM, private sector tea industry is a key stakeholder where the majority of the implementation will be carried out and the HEMs are procured from private listed companies of Sri Lanka. The involvement and contribution of both parties is inevitable to see the success. The trial projects have opened the gate to two new supplier to enter the market with newly introduced motors. The project is expected to create long-term connections and business relationships between motor suppliers and tea factories. Even though it has not been finalized the private sector partnerships can be accommodated in the biogas implementations as well. Janathakshan (GTE) Limited promoting sustainable and green solutions including biogas has approaches the project for possible future partnership in biogas promotion. An initial discussion was held on developing a sustainable market mechanism for biogas, sharing of past lessons in biogas promotion, capacity building and resource sharing (trained masons, S&M sector biogas installer registered under them).
GEF Small Grants Programme	N/A

Other Partners	Provincial Authorities and entities under them: Four Provincial Councils (PCs) namely Northwestern, Southern, Central and Uva, are involved in the pilot project of biogas technology dissemination which is identified as one of the NAMA technologies. The project has also established partnership with entities under these PCs like the Local Government Departments, Ministries of Fisheries, Energy and Power etc, and Department of Agriculture, Department of Animal Production and Health, Department of Livestock Development etc. in these provinces. Ceylon Electricity Board and Lanka Electric Company are also partners for the pilot NAMA project on Solar PV net-metering. These two entities will involve in pilot implementation of Solar net metering systems with battery storage which is an innovative aspect to the present system. They have allowed pilot activity to be implemented in their green energy zones.

L. Progress toward Gender Equality

Has a gender or social assessment been carried out this reporting period?	No
If a gender or social assessment has been carried out what where the findings?	N/A
Does this project specifically target woman or girls as direct beneficiaries?	No
Please specify results achieved this reporting period that focus on increasing gender equality and improving the empowerment of women.	N/A

M. Annex 1 - Ratings Definitions

Development Objective Progress Ratings Definitions

Highly Satisfactory (HS): Project is expected to achieve or exceed all its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. The project can be presented as 'good practice'.

Satisfactory (S): Project is expected to achieve most of its major global environmental objectives, and yield satisfactory global environmental benefits, with only minor shortcomings.

Moderately Satisfactory (MS): Project is expected to achieve most of its major relevant objectives but with either significant shortcomings or modest overall relevance. Project is expected not to achieve some of its major global environmental objectives or yield some of the expected global environment benefits.

Moderately Unsatisfactory (MU): Project is expected to achieve of its major global environmental objectives with major shortcomings or is expected to achieve only some of its major global environmental objectives.

Unsatisfactory (U): Project is expected not to achieve most of its major global environment objectives or to yield any satisfactory global environmental benefits.

Highly Unsatisfactory (HU): The project has failed to achieve, and is not expected to achieve, any of its major global environment objectives with no worthwhile benefits.

Implementation Progress Ratings Definitions

Highly Satisfactory (HS): Implementation of all components is in substantial compliance with the original/formally revised implementation plan for the project. The project can be presented as 'good practice'.

Satisfactory (S): Implementation of most components is in substantial compliance with the original/formally revised plan except for only few that are subject to remedial action.

Moderately Satisfactory (MS): Implementation of some components is in substantial compliance with the original/formally revised plan with some components requiring remedial action.

Moderately Unsatisfactory (MU): Implementation of some components is not in substantial compliance with the original/formally revised plan with most components requiring remedial action.

Unsatisfactory (U): Implementation of most components is not in substantial compliance with the original/formally revised plan.

Highly Unsatisfactory (HU): Implementation of none of the components is in substantial compliance with the original/formally revised plan.