

#### **REQUEST FOR CEO ENDORSEMENT** PROJECT TYPE: Full-sized Project TYPE OF TRUST FUND:GEF Trust Fund

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#### PART I: PROJECT INFORMATION

Project Title: Market Transformation and Removal of Barriers for Effective Implementation of the State-			
Level Climate Change Action	Plans		
Country(ies):	India	GEF Project ID: <sup>1</sup>	5361
GEF Agency(ies):	UNDP	GEF Agency Project ID:	4606
Other Executing Partner(s):	Ministry of Environment and Forests, Climate Change (MoEFCC), GOI	Submission Date:	September 1, 2015
GEF Focal Area (s):	Climate Change	Project Duration (Months)	48
Name of Parent Program (if applicable):For SFM/REDD+For SGPFor PPP		Project Agency Fee (\$):	355,728

#### A. FOCAL AREA STRATEGY FRAMEWORK<sup>2</sup>

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount (\$)	Co-financing (\$)
CCM-2	2.2. Sustainable financing and delivery mechanisms established and operational	Investment mobilized	GEF TF	2,509,747	17,697,652
CCM-3	3.2. Investment in renewable energy technologies increased	Renewable energy capacity installed	GEF TF	1,234,753	7,302,348
	-	Total project costs		3,744,500	25,000,000

#### **B. PROJECT FRAMEWORK**

Project Objective: To support the effective implementation of specific energy efficiency and renewable energy climate change mitigation actions identified in the SAPCCs for Manipur and Jharkhand

change integration actions identified in the SAT CCS for Manpur and Sharkhand						
Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount (\$)	Confirmed Co- financing (\$)
Component 1:	TA	Outcome 1:	Output 1.1: Regularly updated	GEF TF	1,213,500	7,132,331
Framework for the		Successful and	GHG abatement cost curves			
implementation of		sustainable	at state level			
climate change		implementation	Output 1.2: Selected			
mitigation options		of priority CCM	prioritized RE and EE actions			
in the selected		actions on	listed in Manipur and			
states SAPCCs		energy	Jharkhand Action Plans on			
		generation and	Climate Change for			
		application of	implementation			
		EE & RE	Output 1.3: Designed and			
		technologies in	implemented common			
		the major energy	monitoring, reporting, and			

<sup>&</sup>lt;sup>1</sup> Project ID number will be assigned by GEFSEC.

<sup>&</sup>lt;sup>2</sup> Refer to the Focal Area Results Framework and LDCF/SCCF Framework when completing Table A.

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		end-use sectors in selected states	verification (MRV) system for the selected RE and EE actions of the Manipur and Jharkhand APCC, in a way to feedback into the SAPCC process			
Component 2: Catalyzing investments for implementation of selected RE and EE mitigation action	ТА	Outcome 2: Enhanced states capability and capacity for identifying, designing, planning, financing and implementing selected RE and EE mitigation actions from their SAPCC	ProtectsOutput 2.1: Completedevaluation of existingavailable loan mechanisms forprojects developed as part ofSAPCC targetsOutput 2.2: Implemented non-grant financing instrumentssuch as flexible debt finance(including long tenure low-interest loans)Output 2.3: Mobilized publicand private sector fundingOutput 2.4: Established publicprivate partnerships (PPP) forimplementation and scalingup of selected RE and EEactions in Manipur andJharkhandOutput 2.6: Completedimplementation manual andworkshops for supporting theimplementation of selectedpublic private partnershipDutput 2.6: Completed	GEF TF	1,234,753	7,302, 348
<b>Component 3:</b> Capacity development of concerned state level officials for implementation of respective SAPCCs	ТА	Outcome 3: Enhanced technical capability of state government in integrating climate change concerns within state sectoral development plans and budgets and undertaking MRVs efficiently for SAPCC actions, facilitated inter- state learning and coordination for SAPCCs	Output 3.1: Aligned state sectoral budgets for development plans to include climate change mitigation actions related expenses Output 3.2: Completed training and capacity building programs on the developed MRV systems for the State officials Output 3.3: Established institutional mechanism for inter-state exchange of information and technology dissemination for Manipur and Jharkhand for	GEF TF	1,118,000	6,726,130

	implementation of SAPCC mitigation actions Output 3.4: Conducted inter- state study trips and stakeholder interaction workshops			
	Output 3.5: Established and operational information dissemination system on lessons learnt from investment projects undertaken on priority RE and EE actions.			
Subtotal			3,566,253	21,160,809
Project Management Cost (PMC) <sup>3</sup> GEF TF			178,247	3,839,191
	Total project costs         3,744,500         25,000,00			25,000,000

#### C. SOURCES OF CONFIRMED CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME (\$)

Sources of Co- financing	Name of Co-financier	Type of Co- financing	Amount (\$)
GEF Agency	United Nations Development Programme (UNDP)	Cash	500,000
National Government	Ministry of Environment, Forests and Climate Change (MoEFCC)	Cash	2,000,000
National Government	MoEFCC	In-kind	10,588,745
State Government	Department of Environment, Government of Jharkhand	Cash	5,242,300
State Government	Department of Environment, Government of Manipur	Cash	6,668,955
Total Co-financing			25,000,000

#### **D.** TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY<sup>1</sup>: N.A.

<sup>1</sup>In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table. PMC amount from Table B should be included proportionately to the focal area amount in this table. <sup>2</sup> Indicate fees related to this project.

#### E. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Grant Amount (\$)	Co-financing (\$)	Project Total (\$)
International Consultants	951,500	6,331,246	7,282,746
National/Local Consultants	665,000	4,403,565	5,068,565

#### F. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? NO

(If non-grant instruments are used, provide in Annex D an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund).

<sup>&</sup>lt;sup>3</sup> PMC should be charged proportionately to focal areas based on focal area project grant amount in Table D below.

#### PART II: PROJECT JUSTIFICATION

### A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL $\mathbf{PIF}^4$

## A.1 <u>National strategies and plans</u> or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NCSA, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.

The applicable national strategies and plans (or reports or assessments under relevant conventions) build on those described at the project's PIF stage. A wide range of Government of India (GoI) policies and schemes<sup>5</sup> have sought to support the expansion of renewable energy, as follows:

- Electricity Act 2003: Mandates that each State Electricity Regulatory Commission (SERC) must establish minimum renewable power purchases; allows for the Central Electricity Regulatory Commission (CERC) to set a preferential tariff for electricity generated from renewable energy technologies; and provides open access of the electricity transmission and distribution system to licensed renewable power generators.
- **National Electricity Policy 2005:** Allows SERCs to establish preferential tariffs for electricity generated from renewable sources.
- **National Tariff Policy 2006**: Mandates that each SERC must specify a RPO with distribution companies in a time-bound manner with purchases to be made through a competitive bidding process.
- **Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) 2005**: Supports extension of electricity to all rural and below poverty line (BPL) households through a 90% subsidy of capital equipment costs for renewable and non-renewable energy systems.
- **Twelfth Five Year Plan (2012-2017):** the 11<sup>th</sup> Five Year Plan established a target that 10% of power generating capacity should be based on renewable sources by 2012 (a goal that has already been reached); it also supported the phasing out of investment-related subsidies in favour of performance-oriented incentives. GOI set up a goal of renewable energy capacity addition to 29.8 GW for the 12<sup>th</sup> Year Plan (2012-2017). This meant that taking RE total capacity almost to the 55 GW by the end of FY17. This includes 15 GW of wind, 10 GW of solar, and 2.7 GW of biomass, as well as 2.1 GW of small hydro. Investment in RE is expected to almost quadruple to INR 3,186 billion in the 12 FYP from INR 892 in the 11<sup>th</sup> FYP.
- Jawarharlal Nehru National Solar Mission has a target for the deployment of 20,000 MW of solar power, 20 million m<sup>2</sup> of solar thermal collector area and 20 million solar lighting systems by 2022. The Mission has adopted a 3-phased approach, at the end of each plan, and mid-term during the 12<sup>th</sup> and 13<sup>th</sup> Plans, there will be an evaluation of progress and a review of capacity and targets for subsequent phases to be based on emerging cost and technology trends, both domestic and global.

Many states have introduced state-level renewable energy policies with their own schemes and tax incentives for renewable energy. Various states have implemented provisional measures such as concessional open access charges for captive renewable energy projects and waivers on cross-subsidy surcharges. These measures are meant to reduce the burden resulting from the generally lower plant load factors of renewable energy projects. SERCs also set state-specific targets for distribution companies to purchase a certain percentage of their total power requirement from renewable energy sources through targets set in the form of Renewable Purchase Obligations (RPOs). As part of its policy to promote renewable energy, India launched the Renewable Energy Certificate (REC) Mechanism in 2010. Under this scheme, generators of renewable energy are granted an REC

<sup>&</sup>lt;sup>4</sup> For questions A.1 –A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter "NA" after the respective question.

<sup>&</sup>lt;sup>5</sup> Indian Renewable Energy Status Report. Background paper for DIREC 2010. NREL/TP-6A20-48948 October 2010

per unit of green energy that they contribute to the grid. RECs have begun to be traded on the power exchanges, with the RECs being purchased by states / agencies that are otherwise unable to meet their RPOs.

The National Clean Energy Fund was created in 2011 as a funding mechanism for research and development in the field of clean energy technologies. The fund was created by levying a nominal cost on coal, which has been increased further. Though the fund is large (expected to grow to INR 100 billion) the guidelines for utilization of this Fund have been found to be very broad-based with the result that the Fund is now being used for routine energy projects including those in the new and renewable energy sector.

In addition, GOI has designed various financial instruments and initiatives to engage private industry to participate in this renewable energy promotion and implementation. These initiatives include:

- Tax incentives: income tax exemptions, accelerated depreciation
- Feed-In Tariffs
- RPOs and RECs
- Subsidies for grid connected RE, rural electrification programs, for biomass projects, solar projects
- Generation based incentives (GBI) for wind and solar projects

Similarly, In the last decade, the GOI has developed and implemented several policy and institutional initiatives to encourage adoption of EE in the country. These include enacting laws and amendments to legislations, announcing the NAPCC and the NMEEE, and developing green rating systems. All of these initiatives are aimed at achieving EE potential of the country. Some of the key GOI policies and regulations for EE include:

- The Energy Conservation Act, 2001: was enacted in October 2001 (effective from March 1, 2002). The EC Act requires large energy consumers to adhere to energy consumption norms, and also directs new buildings to follow an Energy Conservation Building Code (ECBC). Electrical appliances need to meet minimum energy performance standards (MEPS) and display energy consumption labels. The EC Act, 2001 led to the formation of the BEE under the MOP, as a statutory body entrusted with regulatory powers for enforcement of various recommendation of the Act.
- The Electricity Act, 2003: came into force in June 2003, with the key aim of consolidating laws relating to generation, transmission, distribution, trading and use of electricity; and to reform legislation by "promotion of efficient and environmentally benign policies". The Act mandates efficiency in all aspects of power sector -- generation, transmission and distribution of electricity. In 2005, under Section 3(1) of this Act, the central government notified the National Electricity Policy (NEP) for the development of country's power sector based on optimal utilization of resources. NEP puts additional emphasis on higher efficiency levels of power generating plants, stringent measures against electricity theft, promoting energy conservation measures, and boosting renewable energy sources. NEP has accorded high priority to demand-side management (DSM) and has made periodic energy audits compulsory for energy intensive industries. The focus is also on labelling of appliances and high efficiency pumps in agriculture. NEP has also made suggestions for load management and differential tariffs and emphasized encouraging and promoting ESCOs. These initiatives are being implemented by BEE.
- The Energy Conservation Building Code (ECBC): The ECBC was launched by the MOP in May 2007 as a first step towards promoting EE in the country's building sector. ECBC not only addresses the design of new, large commercial buildings, but also aims at optimizing the buildings' energy demand based on their location in different climatic zones of India. It sets minimum EE standards for design and construction. Nearly 100 buildings across the country are already following this code. Compliance with ECBC has been incorporated into the mandatory Environmental Impact Assessment (EIA) requirements for large buildings. While ECBC norms started as a voluntary initiative, a few states have already made it mandatory and several others are in the process of doing the same.
- National Mission on Enhanced Energy Efficiency (NMEEE): The NMEEE was launched in June 2008. NMEEE promotes innovative policy and regulatory regimes, financing mechanisms and business models for achieving EE in the national economy. NMEEE has put in place four new initiatives to enhance EE in

the country. One of the four initiatives is the Perform, Achieve and Trade (PAT) scheme, which is a national market mechanism where each designated consumer (defined as per EC Act 2001) will be given a specific energy consumption (SEC) target to meet over a period of three years. Any additional saving will qualify for issuance of energy saving certificates, which can be traded internally with other designated consumers (short of targets) or through exchanges. In the future, the scope of this scheme may be extended to cover prioritized cities, towns and municipalities.

- National Mission on Sustainable Habitat (NMSH): The National Mission on Sustainable Habitat was approved by Government of India in February 2010. The Sustainable Habitat Mission aims to make the habitat (i.e. the living environment of humans) sustainable through enhancement of EE in buildings, effective solid waste management, and modal shift to public transport. The NMSH objectives will be achieved via two initiatives: (i) extending the application of ECBC (at present applicable to only new and large commercial buildings) to retrofitting buildings; and (ii) conducting research and development on bio-chemical conversion, wastewater use, sewage utilization, and waste recycling option.
- **12th FYP (2012-2017):** The 12<sup>th</sup> FYP strives for faster and more inclusive growth along with a vision for promoting sustainability. According to the 12 FYP, India will require new energy efficient practices in urban housing and transport to achieve environmental sustainability. This Plan also calls for the use of energy efficient technologies in coal-based electricity generation such as the introduction of super critical and ultra-super critical boilers. The Plan aims to promote EE in industries, farms and offices in order to limit growing energy demand. Also, highly energy-efficient appliances are to be promoted through labelling and mandatory standards. The 12 FYP identifies the need to develop and adopt transport policies and related technologies for more energy efficient vehicles in India

In addition, last few years have also seen development of green building rating tools in the country, which provide green building certifications to new and retrofit building construction. The BEE developed a rating system based on the "Star Labelling Program". It is meant for use in the Business Process Outsourcing (BPO) and office buildings; but does not apply to residential buildings. However, BEE is now working on benchmarking standards for residential buildings. In addition, the Indian Green Building Council (IGBC) and The Energy and Resources Institute (TERI) have introduced green building rating systems, which have been designed keeping in mind the Indian building requirements and the different climatic zones of the country.

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

The project aims to support the effective implementation of specific energy efficiency and renewable energy climate change mitigation actions identified in the SAPCCs for the states of Jharkhand and Manipur in India. The project is in line with the GEF strategic priorities - specifically, CCM-2 (promote market transformation for energy efficiency in major sectors) and CCM-3 (promote investment in renewable energy technologies).

The applicable GEF Strategic Objective of CCM 2 has the applicable GEF Expected Outcomes as Outcome 2.1: Appropriate policy, legal and regulatory frameworks adopted and enforced and Outcome 2.2: Sustainable financing and delivery mechanisms established and operational which could be gauged by monitoring the extent to which EE policies and regulations are adopted and enforced (score of 1 to 5) and. The achievement of Outcome 2.2 can be determined by tracking the volume of investment mobilized in energy efficient technologies and measures.

Similarly, for GEF Strategic Objective of CCM-3- promote investment in renewable energy technologies, the applicable GEF Expected Outcomes are Outcome 3.1: Favourable policy and regulatory environment created for renewable energy investments, which could be gauged by the extent to which RE policies and regulations are adopted and enforced (score of 1 to 5). The achievement of Outcome 3.2: Investment in renewable energy technologies increased can be determined by tracking the volume of investment mobilized. The applicable GEF Outcome Indicators are:

- a. Extent to which EE and RE policies and regulations are adopted and enforced
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- b. Volume of investment mobilized in EE and RE
- c. Tonnes of CO2 equivalent avoided

#### A.3 The GEF Agency's comparative advantage:

UNDP is supporting the Government of India for the preparation of the SAPCCs in Andaman and Nicobar Islands, Bihar, Chandigarh, Chhattisgarh, Jharkhand, Kerala, Lakshadweep, Madhya Pradesh, Uttarakhand. UNDP facilitated the development of a Common Framework for the Preparation of the SAPCCs, and also provided technical support to ten state governments directly in preparation of their plans. UNDP's strong partnerships with specific state governments and close involvement with nodal agencies at the state level will enable effective implementation of the current project. Following the successful involvement in the preparation of the SAPCCs, UNDP will bring an additional co-financing amount of US\$500,000 to the current project.

UNDP has also facilitated the NATCOM preparation process, which has led to enhancement of the knowledge base on emission sources and climate vulnerabilities. UNDP is supporting the Government of India, as well as the state governments, in several initiatives aimed at removal of market barriers to energy efficiency improvements in selected energy intensive sectors, including SMEs (such as steel-re-rolling, brick making and tea processing), buildings, transport (including urban transportation and in the railways sector), and adoption of renewable energy technologies, particularly biomass, solar (solar water heaters and solar concentrators) and hydro. The experience and lessons from these initiatives will directly feed into the state-level approach envisaged in this project. For instance, the GOI-GEF-UNDP initiative on energy efficiency improvements in the commercial buildings sector is aimed at removal of barriers for the adoption of the ECBC (energy conservation building codes), the actual implementation of which will be dependent on actions at the state level.

The current project will directly contribute to the realization of the goals of reducing the impact of climate change, increasing access to clean energy and adoption of energy efficient measures under the new CPAP for the period 2013-2017. Under the new CPAP period, UNDP will also specifically support the Government in implementation of the SAPCCs.

The Energy and Environment Unit (EEU) of the UNDP CO has a Head, a Climate Change Advisor and seven programme officers who support implementation of projects related to the different GEF focal areas, including climate change, biodiversity, land degradation and chemical management. Backed up by technical expertise available in the UNDP Bangkok Regional Hub (BRH) based in Bangkok, Thailand, the India Country Office has sufficient staff to effectively supervise the implementation of this project. A professional staff member from the Country Office (EEU) will be responsible for oversight and project assurance, and will represent UNDP in the NSC. Expertise of other professional staff in EEU in climate change renewable energy and energy efficiency will also be utilized, when necessary, to support implementation of the project.

#### A.4. The baseline project and the problem that it seeks to address:

The National Action Plan on Climate Change (NAPCC) along with its National Mission on Enhanced Energy Efficiency and National Solar Mission continue to be the most relevant policy baseline for the GEF purposes, in continuation with the PIF. At the sub-national level, the State Action Plan for Climate Change continues to be the relevant policy document, from PIF. While several states have completed preparation of their SAPCCs moving from development of a plan/strategy to implementation remains to a challenge for state governments. The barriers as specified and identified in PIF in the implementation of the SAPCC continue to be relevant till date.

The Government of India realizes the importance of SAPCC implementation and in this context is seeking GEF support to quick start and showcases the actual implementation select high level priorities of SAPCCs in the states. The current GEF project will help revisit the existing regulatory and policy frameworks at the national and state levels, including the directives under the national missions.

Considering that the states require GEF support for removal of barriers in effective implementation of mitigation measures in energy efficiency and renewable energy sectors, the design team in consultation with MoEFCC, UNDP and State Governments have selected two states to demonstrate that how the mitigations measures can be implemented effectively in partnership with private sector, financing institutions, research institutions, international agencies, SERCs, ESCOs and local EE and RE experts.

The detailed exercise resulted in the selection of Jharkhand and Manipur as the states for GEF project interventions with the consideration that moving from development of a plan/strategy to implementation is a challenge for both Jharkhand and Manipur state governments because of a number of barriers like (a) limited institutional capacities, (b) absence of synergies between policies and incentive structures, and (c) limited technical capabilities to design relevant programs and catalyse private sector investments. In Jharkhand and Manipur, implementation of the SAPCCs has not yet started. Effective implementation of the SAPCCs is important and delays can jeopardize the achievement of NAPCC goals.

The proposed project will support the implementation of SAPCC strategies in Jharkhand and Manipur. These two states are among the most vulnerable states in India. They have been selected as pilot states in the proposed project so as to (a) build on their approved SAPCCs, which are now ready for implementation, (b) achieve geographical balance in project coverage, and (c) cover diverse climatic conditions, so as to link diverse aspects and cross-learning between neighbouring states. The two states also represent different techno-economic profiles in terms of technology cost, availability and energy mix. The collective indicative budget of the SAPCCs of the two state governments of Jharkhand and Manipur amounts to US\$ 1,183 million (INR 7,093.35 Crores).

One of the finalized states is different from the one proposed in PIF, namely Madhya Pradesh, in place of which Jharkhand has been selected. The reason for this change was largely on account of institutional changes at the state government level in Madhya Pradesh for the renewable energy sector. By the beginning of the PPG phase, there were two separate departments of on-grid and off-grid RE created at the state level in Madhya Pradesh. Lack of clear support from the concerned agencies and greater institutional coordination hurdles that may be created, led to replacement of Madhya Pradesh in the PPG phase.

A brief description of the two finalized states and the need for RE and EE interventions for implementation of the SAPCC is highlighted below.

#### Jharkhand

The state of Jharkhand realizes the importance of energy for industrialization and also for providing a better quality of life to its people. It is laying lot of emphasis on setting up policies and procedures to encourage setting up of conventional and renewable power generating units, so as to achieve uninterrupted power supply in the entire state, while also meeting its environmental objectives. The per capita energy consumption of the State is at a low of 350 kWh as compared to the national average consumption of 600 kWh. Continuous development of the state both industrially and commercially has resulted in continuously increasing demand for power and a per capita demand of 500 kWh is estimated within 5 years.

In view of this, the state is in the process of developing ambitious plans to accelerate the urban and rural electrification. An urgent need exists to augment installed capacity from the existing level of 1,320 MW. A major issue with the state electricity distribution utility has been their failure to provide quality power with non-fluctuating voltage and frequency. The state has not yet developed any concrete plan for the design and implementation of energy efficiency measures in sectors like buildings, domestic, industry, municipal and agriculture. To improve the supply of electricity, there is a need for the implementation of demand side management programs.

The State Government in its energy and industrial policies has highlighted the need to encourage private sector participation in generation, transmission and distribution of power. But the private sector is still to be encouraged to have captive power plants, to generate power from conventional and renewable sources (solar, wind, waste heat recovery), and to wheel power to state. As per the state industrial policy, a power plant generating power from non-conventional sources shall be deemed to be a new industrial unit and will be entitled to all the GEF5 CEO Endorsement Template-April 2015.doc

incentives provided to a new industrial unit. New or existing industrial units setting up captive power plant shall be exempted from the payment of 50% of electricity duty for a period of five years for self - consumption or captive use (i.e. in respect of power being used by the plant) from the date of its commissioning.

The state has to go a long way to develop non-conventional sources of energy using clean technology through private participation. The State proposes to promote increasing use of renewable and environmental friendly sources of energy. There is substantial biomass availability in Jharkhand due to its large agricultural base. The state can explore setting up the energy units based on paddy-waste, rice straw / husk, bush leaves, twigs, geothermal, solar, etc. Further, due to day long sunshine hours for almost 300 days in a year the State has a potential to harness considerable amount of solar power. It is roughly estimated that the potential of Jharkhand to generate energy from these non-conventional sources is about 400-500 MW. Also, keeping in view the guidelines of Central Electricity Regulatory Commission the state proposes to purchase at least 3% of the state's total power purchases from these sources.

The state can achieve the capacity addition goals to get over the power supply deficit issues in coming years' time. The renewable energy sources like grid connected solar and wind, roof-top solar, biomass and micro hydro will also contribute to the generation of power and meet the state requirements for achieving RPO targets. But in the process of focusing only on bridging the demand and supply gap, the state may lose the opportunity to plan and implement energy efficiency and the renewable energy projects with the active participation of stakeholders like financing institutions, private sector, vendors, technology providers, Energy Service Companies and research institutions. The state has prepared the SAPCC. There is a need for the integration of SAPCC in to the on-going state level energy sector activities to promote the implementation of renewable energy and energy efficiency programs using innovative approaches. The project on 'Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans' intends to focus on promoting the investment in renewable energy and energy efficiency technologies through effective implementation of SAPCC. The framework for program design and implementation developed under the project and the cost share committed by both public and private sector institutions is expected to remove the investment barriers and transform the market for the uptake of energy efficiency and renewable energy technologies and achieve the targets for GHG emission reductions in the state.

#### Manipur

The Electricity Act 2003 envisages "Power for All" by 2012 with 5% reserve capacity. According to the National Electricity Policy, 2006, the per capita consumption of electricity is around 600 kWh at the national level (as against the envisioned level of 1000 units by 2015) while that of the state of Manipur is about 140 kWh only.

Of the three sources of getting power – own generation, allocated share from Central Sector Generating Stations (CSGS) and purchase from other sources, Manipur depends almost 99% on CSGS. The allocated share of Manipur from CSGS is 132 MW against the peak demand of 180 MW. But in reality, the average availability is around 80 MW only. Out of this 80 MW supply of power, more than 70% is lost as AT&C (Aggregate Technical and Commercial) losses (as per the data provided by the Joint Electricity Regulatory Commission for Manipur and Mizoram). Thus only 37 MW power is practically available to the consumers (including unauthorized consumers) against the peak demand of 180 MW.

Manipur has prepared its Solar Policy and is encouraging the private sector to invest in solar. The state has limited potential for wind. The potential for hydro is high but it has its own limitations. The Manipur Renewable Development Agency (MANIREDA) is the Nodal Agency for MNRE and also the Designated Agency for Bureau of Energy Efficiency (BEE). The MANIREDA is working towards the development of renewable energy but the activities for the design and implementation of energy efficiency programs are limited. The greatest achievement in the state is the installation of pre-paid meters in some key market places. Pre-paid meters have saved good amount of electricity in supply to commercial consumers. There is a need to plan for state level demand side management programs for street lighting, municipal water pumping, building energy efficiency and energy efficiency in industries and agriculture sector. The decreasing availability of rainfall and surface water sources, the energy consumption in water pumping in agriculture sector is bound to increase. Thus this is the

best time to introduce solar powered pumps. Manipur being the hilly state, the cost for implementation of renewable energy and energy efficiency measures is higher in comparison to other states. The state therefore, needs carefully designed innovative financing mechanisms to encourage the public and private sector to implement clean energy projects.

Considering that the state has limited potential for generation of its own power using the conventional sources, the generation of power using renewable sources becomes more important to overcome the power supply deficit issues. The renewable energy sources like grid connected solar and wind, roof-top solar, biomass and micro hydro will also contribute in meeting the requirements for achieving RPO targets. But in the process of focusing only on bridging the demand and supply gap, the state may lose the opportunity to plan and implement energy efficiency and the renewable energy projects with the active participation of stakeholders like financing institutions, private sector, vendors, technology providers, Energy Service Companies and research institutions. The state has prepared the State Action Plan for Climate Change (SAPCC). There is a need for the integration of SAPCC in to the on-going state level energy sector activities to promote the implementation of renewable energy and energy efficiency programs using innovative approaches. The project on 'Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans' intends to focus on promoting the investment in renewable energy and energy efficiency technologies through effective implementation of SAPCC. The framework for program design and implementation developed under the project and the cost share committed by both public and private sector institutions is expected to remove the investment barriers and transform the market for the uptake of energy efficiency and renewable energy technologies and achieve the targets for GHG emission reductions in the state.

Table 1 as below provides an overview of changes from the PIF stage to the ProDoc stage.

Expect	ed Outputs	Rationale for Changes in PIF
GEF-Approved PIF	Project Document	<b>Outputs/Activities in the ProDoc</b>
Project title: Market	Project title: Market	No change
Transformation and	Transformation and Removal	
Removal of Barriers for	of Barriers for Effective	
Effective Implementation	Implementation of the State-	
of the State-Level Climate	Level Climate Change Action	
Change Action Plans	Plans	
Project Objective: To	Project Objective: To support	Slight change in the project objective as the
support the effective	the effective implementation of	states are finalized i.e. project focuses in the
implementation of specific	specific energy efficiency and	states of Manipur and Jharkhand.
energy efficiency and	renewable energy climate	
renewable energy related	change mitigation actions	
climate change mitigation	identified in the SAPCCs for	
actions identified in the	Manipur and Jharkhand	
State Level Action Plans on		
Climate Change for		
selected states in India		
Outcome 1: Successful and	Outcome 1: Successful and	Outcome 1 of the ProDoc now consists of an
sustainable implementation	sustainable implementation of	additional output 1.1 and Outputs are re-
of priority CCM actions on	priority CCM actions on energy	organized in a sequential order to ensure a
energy generation <sup>6</sup> and	generation and application of	logical flow in project activities.
application of EE & RE	EE & RE technologies in the	
technologies in the major	major energy end-use sectors in	During the project development stage of the
energy end-use sectors in	selected states	project, it was greatly felt amongst the project
selected states		team and even state level stakeholders that an

#### Table 1: Overview of Changes from PIF to ProDoc

<sup>6</sup> Energy generation refers to both electricity and process heat production

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Expected Outputs		Rationale for Changes in PIF
GEF-Approved PIF	Project Document	<b>Outputs/Activities in the ProDoc</b>
Expected Outputs: (i) Prioritized and selected climate change mitigation actions listed in the SAPCCs <sup>7</sup> (ii) Decisered and	<b>Output 1.1:</b> Regularly updated GHG abatement cost curves at state level	effective and rational methodology for selection of suitable investment projects of the states should be undertaken. With that in mind, during the PPG exercise, Marginal Abatement Cost Curve (MACC) analysis has been undertaken to arrive at the most suitable investment projects for the two states in consultation with the state
(1) Designed and implemented common monitoring, reporting and verification (MRV) system for selected climate change mitigation actions of SAPCCs in the selected states that provide feedback into the SAPCC process	<ul> <li>Output 1.2: Selected prioritized RE and EE mitigation actions listed in Manipur and Jharkhand Action Plans on Climate Change for implementation</li> <li>Output 1.3: Designed and implemented common monitoring, reporting, and verification (MRV) system for the selected RE and EE mitigation actions of the Manipur and Jharkhand APCC, in a way to feedback into the SAPCC process</li> </ul>	agencies. The marginal abatement cost curves are used to prioritize the investment projects. Considering that the setting up of a reliable baseline is important for effective implementation of mitigation measures in the states, the marginal abatement cost curve will help in building up of an integrated project database of existing or planned activities to mitigate GHG emissions and the monitoring of the emissions over a period of time (until 2020). The other important aspect is to build the capabilities at States for planning, implementation and monitoring of the mitigation measures using the cost curves to ensure continuous updates for input to effective policy making.
		<ul> <li>initiatives are voluntary activities hence it</li> <li>initiatives are voluntary activities hence it</li> <li>becomes crucial that the selected investment</li> <li>projects for implementation should have visible</li> <li>impact, and should be measurable and</li> <li>quantifiable to the project developers and</li> <li>general public. State specific marginal</li> <li>abatement curves will assist the decision</li> <li>makers and implementers to focus on RE/EE</li> <li>measures and low carbon development</li> <li>strategies best suited for a particular state.</li> <li>Marginal Abatement Cost (MAC) curve will</li> <li>help in identifying the least cost; large</li> <li>abatement projects which can then be</li> <li>implemented as investment projects in different</li> <li>sectors and then replicated across India. Due to</li> <li>these important factors, it becomes necessary</li> <li>that time and efforts be invested in developing</li> <li>abatement cost curves has been developed at the</li> <li>PPG phase to achieve the following:</li> <li>Identify a portfolio of mitigation projects that</li> <li>are either planned or being implemented to</li> </ul>

<sup>&</sup>lt;sup>7</sup> These should be technically and economically feasible and contribute to the achievement of the NAPCC objectives GEF5 CEO Endorsement Template-April 2015.doc

Expected Outputs		Rationale for Changes in PIF
GEF-Approved PIF	Project Document	<b>Outputs/Activities in the ProDoc</b>
		<ul> <li>be able to track the process towards the 2020 and 2030 target of 20% emission reduction;</li> <li>Use the methodology for the construction of the abatement cost curves to establish a reliable baseline;</li> <li>Conduct a cost benefit analysis of the project portfolio, which included the capital and operational cost but also the abatement potential;</li> <li>Share and transfer the knowledge to the states so that future updates of the cost curve can be made by the staff at state nodal agencies.</li> <li>Thus with the above rationale, an additional output 1.1 has been included. The output is essentially focusing on revisiting the MAC analysis undertaken at the PPG phase during the project implementation phase to account for any revisions in data and also build the capacity at the state level to undertake such an activity on a continuous basic</li> </ul>
<b>Component Budget</b> : GEF Grant at PIF: US\$ 1,071,638	GEF Grant in ProDoc: US\$ 1,213,500 Difference (PIF-ProDoc): US\$ -141,862	Justification for a change in budget: MACC analysis that has been undertaken during the project development stage revealed the fact that an effective methodology shall be devised at the state level for the selection of suitable investment projects. In order to achieve this, MACC analysis has to be regularly updated. For that, new output has been included. Therefore, a slight increase in the total budget for this component when compared to the amount mentioned in PIF.

Expected Outputs		Rationale for Changes in PIF
GEF-Approved PIF	Project Document	<b>Outputs/Activities in the ProDoc</b>
Outcome 2: States are fully	Outcome 2: Enhanced states	The outcome statement 2 has undergone some
capable of identifying,	capability and capacity for	change from the approved PIF. It was felt
designing, planning,	identifying, designing,	amongst the state stakeholders that within the
financing and	planning, financing and	duration of 4 years of the UNDP GEF project, it
that are in their SAPCCs	EE mitigation actions from	may be too ambitious to state that states will be fully capable of identifying designing
that are in their SAFCCS.	their SAPCC	planning, financing and implementing the
Expected outputs:		SAPCCs. It was felt it that, while all efforts
i) Implemented selected	Output 2.1: Completed	would be made to make the states fully capable
specific priority energy-	evaluation of existing available	but it would be better to use the words
related climate change	loan mechanisms for projects	'enhanced state capability' in the outcome
mitigation interventions	developed as part of SAPCC	statement. This has now been reflected in the
that are scalable and	targets	revised outcome statement.
replicable in energy end-		
use sectors		The outputs for outcome 2 in the PIF have
(ii) Established public	Output 2 2: Implemented non	discussions at the state level
private partnerships in the	grant financing instruments	discussions at the state level.
implementation of feasible	such as flexible debt finance	It was greatly felt amongst the project
energy-related CCM	(including long tenure low-	stakeholders that there is a need for improved
projects	interest loans)	financial policies and trying and testing
		different financial modalities through
(iii) Mobilized public and	Output 2.3: Mobilized public	institutions such as the Solar Energy
private sector investments	and private sector funding	Corporation of India (SECI) and Energy
in the application of		Efficiency Services Limited (EESL). Since the
commercially viable CCM		project is not only focusing on the technological
technologies		EE interventions. Thus, the PIE outcome 2
(iv) Replicated existing	<b>Output 2.4</b> . Established public	Output 4 reworded to reflect this change. The
successful policy and	private partnerships (PPP) for	new output 2.1 and 2.2 in the ProDoc now
financial tools that support	implementation and scaling up	states need for evaluating existing and
the implementation of	of selected RE and EE actions	implementing new non-grant financing
CCM technologies.	in Manipur and Jharkhand	instruments for RE and EE investment projects.
	<b>Output 2.5:</b> Implemented nine	
	RE and EE investment projects	
	<b>Output 2.6:</b> Completed	Additionally output 2.6 now reflects need for
	implementation manual and	preparing manuals and undertaking workshops
	workshops for supporting the	for training on the newly established public
	implementation of selected	private partnership models under the project, so
	public private partnership	as to ensure capabilities at the state level for
	models for RE and EE actions	continuation of the activities even after the
		project completion.
Component Budget:	CEE Crantin ProDess US\$	Instituation for a shange in hudget. Nine
1 750 000	1 234 753	justification for a change in budget: Nine
1,750,000	Difference (PIF-ProDoc): US\$	the project development stage. As there is a
	515.247	clarity on the investment projects and cost
	,	analysis, the budget has been accordingly
		revised.

Expect	ed Outputs	<b>Rationale for Changes in PIF</b>
GEF-Approved PIF	Project Document	<b>Outputs/Activities in the ProDoc</b>
<b>Outcome 3:</b> Relevant state departments and other stakeholders are technically capable of (a) integrating climate change within development plans and budgets, and (b) implementation of robust MRV systems to assess implemented actions under the SAPCCs.	<b>Outcome 3:</b> Enhanced technical capability of state government in integrating climate change concerns within Sectoral development plans and budgets and undertaking MRVs efficiently for SAPCC actions, facilitated inter-state learning and coordination for SAPCCs.	The outcome 3 statement in the ProDoc has been slightly reworded to include facilitation of inter-state learning and coordination for SAPCCs, being undertaken at part of this output and reflected in output statements.
Expected outputs are: (i) Developed climate- integrated state budgets in line with the development plans of the states of Madhya Pradesh and Manipur	<b>Output 3.1:</b> Aligned state sectoral budgets for development plans to include climate change mitigation actions related expenses	Output statement 3.1 has been reworded to reflect the actual intent more correctly. The objective of this output is to align the state budgets to include climate change related expense, and not to develop climate integrated state budgets.
(ii) Completed capacity development programs on the measurement, reporting and verification (MRV) of implemented CCM actions under the SAPCCs	<b>Output 3.2:</b> Completed training and capacity building programs on the developed MRV systems for the State officials	Output statement 3.2 has been changed, as the objective is to develop MRV system not only limited to implemented CCM actions but a more overarching MRV system and thus the training and capacity building would focus more on the overall MRV system not only limited to implemented CCM actions.
(iii) Established institutional mechanism for cross-learning between selected states, including information sharing and technology dissemination to facilitate climate change mitigation actions	<b>Output 3.3:</b> Established institutional mechanism for inter-state exchange of information and technology dissemination for Manipur and Jharkhand for implementation of SAPCC mitigation actions	The output statement 3.3 has been reworded slightly to include the names of the selected states Jharkhand and Manipur.
(iv) Completed inter-state cross-learning exposure/site visits and consultation workshops on priority CCM action implementation for SAPCC implementing agencies and departments, as well interested private sector	<b>Output 3.4:</b> Conducted inter- state study trips and stakeholder interaction workshops	The output statement 3.4 has been reworded to make it more flexible in terms of target stakeholders. As these would evolve during the project implementation and accordingly the inter-state study trip and workshops would be undertaken.
<ul> <li>(v) Prepared, published and disseminated case studies, audio-visual and published lessons learnt, and analysis of results of the</li> </ul>	<b>Output 3.5:</b> Established and operational information dissemination system on lessons learnt from investment projects undertaken on priority RE and EE actions.	Output 3.5 reworded to state the establishment and operation of information dissemination system of which case studies, audio-visual and published reports etc. would be a component. The idea is to produce an information system comprising of various tools of information

Expect	ed Outputs	Rationale for Changes in PIF
GEF-Approved PIF	Project Document	Outputs/Activities in the ProDoc
implemented priority CCM actions in the SAPCCs		dissemination and not restrict the output in terms of any specific tools at this stage.
Component Budget:		
GEF Grant at PIF: US\$ 756,000	GEF Grant in ProDoc: US\$ 1,118,000 Difference (PIF-ProDoc): US\$ -362,000	Justification for a change in budget: During the project development stage, the scope of MRV system has been revised to include not only CCM interventions, but also other interventions that are part of SAPCCs. Further, the proposed UNDP-GEF project is expected to provide required training and capacity building support. Therefore, the total budget has been increased for this component when compared to the amount mentioned in PIF.
Project Management	GEF Grant in ProDoc: US\$	Justification for a change in budget: Overall,
	178,247	there is an increased capacity building related
Budget:	Difference (PIF-ProDoc): -	activities. The PMU has to respond to this
GEF Grant at PIF: US\$	US\$ -11,447	change. Therefore a slight increase in the total
166,800		budget for project management when compared to the amount mentioned in PIF.

# A. 5. <u>Incremental /Additional cost reasoning</u>: describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated <u>global environmental benefits</u> (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

This UNDP-GEF Market Transformation and Removal of Barriers for Effective Implementation of State Climate Change Action Plan Project, has been designed as a demonstration project in two selected Indian states, with a potential scope to extend its activities to other states if there is a strong interest.

This project will involve working with a carefully chosen set of renewable energy and energy efficiency mitigation actions under the purview of the SAPCC for identified investment projects, which showcase large potential for energy savings and emission reduction in the states. The selected RE and EE mitigation actions will be developed into carefully integrated solutions and then demonstrated, replicated and scaled up under India GEF SAPCC project. Further extensive scale-up actions will continue after the project's end with the help of a robust monitoring, reporting and verification framework (to be established by the project) that will help the states take stock of its mitigation action, report results and verify in way to compare projects and share lessons and learnings with other states.

The Government of India realizes the importance of SAPCC implementation and in this context seeks GEF support to quick start and showcase the actual implementation, select high level priorities of SAPCCs in two states, Jharkhand and Manipur. The proposed GEF project will review the existing regulatory and policy frameworks at the national and state levels, including the directives under the national Missions. To achieve the holistic approach envisaged in the NAPCC, it is important to showcase the inter-linkages between the power, transport, industry, municipal energy efficiency and buildings sectors.

In this regard, select strategies to build energy security through renewable energy and energy efficiency of the states will play an instrumental role in development of the state. The Government of India's ongoing flagship initiatives on renewable energy is large scale solar deployment scheme (Solar Mission) and energy efficiency

programs initiated under NMEEE and by the EESL is Perform Achieve and Trade (PAT) scheme through cap and trade mechanism, they will be given particular prominence under the proposed project.

As mentioned earlier, within the National Action Plan on Climate Change (NAPCC) adopted in 2008, a National Mission for Enhanced Energy Efficiency was launched. The Super ESCO in the name of EESL was formed as part of the NMEEE to support the implementation of large scale energy efficiency projects in India. The current project will help prepare the ground for design and implementation of large scale energy efficiency projects at the state level with the help of EESL by demonstrating the effectiveness of energy efficiency measures that target municipalities and other sectors. The scope of complementary regulatory instruments, such as performance-based payments, capital subsidies, soft loans, etc. for renewable energy and energy efficiency will also be explored in the project.

For renewable energy (RE) interventions in the power and industrial sectors, the proposed project will build synergies with the National Solar Mission, where some policy risks are already covered through the provision of fiscal incentives. Both Jharkhand and Manipur are endowed with good solar energy potentials of more than 5.0-5.5 kWh/m<sup>2</sup>/day and 4.5 kWh/m<sup>2</sup>/per day, respectively. It is estimated that 10% of the solar energy potentials of these 2 states can be productively utilized. At the current moment, state governments have allocated lands to private investors for the development of solar PV farms without proper due diligence. But private investors are facing challenges in terms of technical and financial feasibility studies and closure of project financials. The current project will, therefore, provide investment support for technical and financial feasibility. The project will help the states in establishing partnership with the newly formed Solar Energy Corporation of India (SECI). The mandate of SECI is to implement large scale solar energy projects with the help of state agencies.

Further, the project will identify potential private investors (already indicated in the PPG phase), involve them in project development through appropriate PPP arrangements, will ensure projects receive benefits from existing fiscal instruments, and will explore mechanisms to combine and sequence funds at the state level and leverage private sector investment. For large-scale grid-connected solar PV systems, the project will facilitate the installation of 10-12 MW of solar PV in the two target states through support to on-grid solar PV farms, each with a capacity of 2 MW or greater. The project will also include de-risking of public and private investments in large-scale solar PV (over 2 MW). For municipal energy efficiency, the proposed project will help state governments to identify appropriate technology, fiscal instruments and market mechanisms to leverage public and private finance in the area of municipal street lighting and municipal water pumping.

In India monitoring such efforts and its effects is a difficult task in absence of uniform Monitoring, Reporting and Verification (MRV) system, and most international/ private funding recommends the use of such systems. Therefore, the current project will develop and implement MRV system for the two states, to measure, monitor and report state level actions and its impact. An MRV system that captures both implementation efforts and effects, would act as a useful tool for the Government to track progress and identify need for international support. The framework will include a verification mechanism that will ensure that all data and information pertaining to actions (under renewable energy and energy efficiency) performance indicator are measurable, comparable and can be applied to set of mitigation actions. A robust domestic MRV system would also foster confidence and impart greater credibility to our financing needs through NAMA or any other similar mechanism. However, the states will be responsible for monitoring and verifying the interventions in line with a common protocol, the proposed project will develop methodologies for measuring, monitoring, and reporting the actions taken by the states. This can provide inputs to other Indian states to adopt similar frameworks. The MRV framework will only be used for the proposed activities and this will not aid in assessing India's progress on any voluntary/mandatory commitment to reduce emission intensity.

Though the two states selected under the GEF project have prepared and submitted their SAPCC's in 2013, no real action had been undertaken ever since. SAPCC's for the states presented more of a wish list of actions for climate change with no real prioritization or dovetailing of the SAPCC with other developmental plans in the states. SAPCC have more or less remained as standalone documents, being pursued in isolation by the nodal agencies only. In addition, the states have several market barriers, which have prevented implementation on

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the plans for this long. The current GEF project will be very timely in helping the selected states in kick starting the SAPCC implementation process. The project by prioritizing the RE and EE actions in the SAPCC will help steam line the SAPCC wish list in terms of what is doable in the immediate short term, medium term or long term. By engaging different state level stakeholders in implementation, the GEF project will also help in aligning the states climate change mitigation ambitions with other developmental efforts. The GEF project will also assist in building institutional capacities across state government departments for designing and implementing climate change mitigation actions, which otherwise would have not been prioritized.

To develop a conservative estimate of the probable "order-of-magnitude" estimate of GHG emission reductions that are attributable to the proposed project, it is considered that the main sources of direct lifetime GHG emission reductions are through catalysing investment activities: (a) Grid connected and off grid solar PV-based power generation; and, (b) energy efficiency and energy conservation measures in municipalities like end-use efficiency of municipal street lighting and municipal water pumping. For energy efficiency interventions, the investment projects have been identified and the selection of technologies is also suggested. The final selection of technologies will take place at the time of project implementation. The related emissions reductions are included in the analysis here, with the result that the estimates presented here can be considered conservative and may vary at the time of project implementation. The project is also expected to influence and catalyse wider adoption of improved EE and RE technologies, establishing commercial viability of technologies, improving access to finance and increasing investors' interest. EE interventions in municipalities and RE interventions across the two target states, will result in energy savings of 866,051 MWh. Assuming the emission factor for Jharkhand as 1.68 tCO<sub>2</sub>/MWh and for Manipur as 1.56 tCO<sub>2</sub>/MWh and over a useful life of interventions over 15 years across the two states, the potential GHG emission reductions achieved from EE and RE activities will be about 1,382,910 tCO<sub>2</sub>.

GEF support is directed mainly towards identifying private investors, establishing PPPs, linking the projects to access benefits from existing fiscal instruments, and explore mechanisms to combine and sequence funds at the state level and leverage private sector investment. Currently, in Jharkhand and Manipur, there is very limited participation of the private sector in implementing RE and EE projects. The current project, with GEF support, will play this incremental role of transforming the market by developing state specific PPP models, publically backed private financing leveraging financing mechanisms etc. In this way, states will be enabled to become fully capable of identifying, designing, planning, financing and implementing climate change mitigation interventions. GEF grant support is both in terms of TA (technical and financial feasibility studies and actions needed to integrate the developed MRV system) and incremental investment costs needed for the investment projects. It is estimated that the potential GHG emission reductions achieved from a capacity of 28 MW solar PV is about 986,973 tCO<sub>2</sub> over its useful lifetime of the project, assuming a capacity factor of 20% and grid emission factor as 1.68 tCO<sub>2</sub>/MWh in Jharkhand and 1.56 tCO<sub>2</sub>/MWh in Manipur. Additionally, the selected investment projects under UNDP-GEF market transformation project for SAPCC are based on an indepth and robust marginal abatement cost curve analysis. Through this method, the UNDP-GEF project has established and tested the cost effectiveness of the selected investment projects vis-à-vis their GHG emissions abatement potential. To generate the Marginal Abatement Cost Curves (MACC), the specific parameters have been analysed for determining the financial details of the abatement/mitigation projects and the expected volume of greenhouse gases to be abated over the projects' lifetime. These parameters include: all the possible RE and EE measures in the states including the shortlisted interventions as per the SAPCCs; expected lifetime of the selected mitigation measures; total cost of each RE and EE project (both capital and ongoing operational expenses); expected savings to be delivered by the project over its useful lifetime; expected amount of electricity generated using RE sources over the project lifetime; expected volume of GHG emissions saved over the project lifetime, cost per unit of energy saved/generated and per tonne of CO<sub>2</sub>e abated, prioritized EE and RE measures for taking up the investment projects and state level interventions. The MACC analysis was built in into the project development strategy and regular updating of these curves at the state level is the foremost activity under the project strategy. Thus, this UNDP-GEF MACC not only makes the selection of investment projects robust but on a long term basis will assist the decision makers and implementers to focus on RE/EE measures and low carbon development strategies best suited for a particular state.

Overall, the project is expected to achieve potential cumulative direct and indirect  $CO_2$  emission reductions of about 31.16 million t $CO_2$  during the economic lifetime of the interventions that will be carried out under the project. Considering the US\$ 3,744,500 contribution of the GEF for this project, the estimated unit abatement cost is about US\$ 0.12/tonne  $CO_2$ .

A.6 Risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved and measures that address these risks: The main risks and the mitigating actions of the proposed project are described in the table below:

No.	Description	Date Identified	Туре	Impact and Probability (on a scale of 1 (low) to 5 (high))	Countermeasures/ Management Response	Owner	Submitted, updated by	Last update	Status
1	The project is not able to get MoEFCC, MNRE, BEE, NSM, NMEEE and relevant state based agencies efforts to remain engaged or to effectively work together to support the growth of RE and EE for SAPCC.	15 June 2015	Strategic and organisationa l	Probability = 1 Impact = 5 Overall Risk: Low	<ul> <li>The project implementing partner (MoEFCC) will establish a strong Central-level PSC and a strong Central/State-level TAC; hold frequent (annual PSC and quarterly TAC) meetings that involve key ministries; and engage and retain the strong interest and ownership of suitable high level champions in key central Ministries, in particular MoEFCC, MNRE, BEE, and in Ministries covering key RE and EE aspects.</li> <li>The quarterly TAC meetings will be rotated around the applicable states to ensure that each state hosts at least one TAC meeting a year for ongoing local project engagement and ownership.</li> </ul>	UNDP	UNDP CO		
2	Current levels of funding available to support the development and implementation of SAPCC at the central and state government level are reduced and hence there is less funding support available to be accessed by the project for the implementation of SAPCC aspects of project activities.	15 June 2015	Strategic and Financial	Probability = 2 Impact = 4 Overall Risk: Medium	- The project through its implementing partner, MoEFCC, will work with the most important SAPCC missions that are highly likely to have durable mandates and funding into the future. Also for which funding from other sources, apart from SAPCC is also available.	UNDP	UNDP CO		

No.	Description	Date Identified	Туре	Impact and Probability (on a scale of 1 (low) to 5 (high))	Countermeasures/ Management Response	Owner	Submitted, updated by	Last update	Status
3	Implementation of SAPCC does not remain an important item on the relevant central and/or state political agendas.	15 June 2015	Strategic	Probability = 1 Impact = 5 Overall Risk: Low	<ul> <li>The scale of the energy access/deficit issues, the looming challenge of climate change and India's national and global commitments at combating climate change, is highly likely to ensure that there will be a suitable ongoing central and local commitment to measures at addressing climate change through central and state level planning.</li> </ul>	UNDP	UNDP CO		
4	There is a sustained reduction in the international oil price, or large subsidies are re-introduced and sustained for diesel used for captive power generation, or funds available for LPG subsidies is significantly increased, or the price of electricity for thermal sources falls – hence significantly undermining the economics of RE and EE for the concerned states.	15 June 2015	Strategic	Probability = 1 Impact = 5 Overall Risk: Low	<ul> <li>As in the 2008 GFC, even a strong global financial crisis is unlikely to lead to sustained lower world crude oil prices as lower oil prices would lead directly to a lower global new oil field development rate and hence would be quickly self- correcting as occurred in 2009. An increase in diesel subsidies in India is unlikely as here is a strong political consensus and momentum towards reducing the remaining diesel subsidies in India.</li> </ul>	UNDP	UNDP CO		
5	Major adverse economic or political conditions significantly force up interest rates and/or curtail bank lending for a significant period in India during the project's implementation, hence reducing the affordability of the bank loans or financial instruments that may be designed for implementation of RE and EE investment projects by project developers.	15 June 2015	Regulatory	Probability = 1 Impact = 5 Overall Risk: Low	<ul> <li>The Indian economy has strong internal growth drivers and has a low risk of significant domestically led major adverse economic conditions. The Indian economy is significantly nationally self- contained and is only weakly linked to potential international financial crises and events. Development of RE – rural livelihood applications is therefore not greatly at risk of major interest</li> </ul>	UNDP	UNDP CO		

No.	Description	Date Identified	Туре	Impact and Probability (on a scale of 1 (low) to 5 (high))	Countermeasures/ Management Response	Owner	Submitted, updated by	Last update	Status
					rate rises or significant bank lending restrictions.				
6	Lack of active involvement of the relevant private sector entities like private investors, power project developers, manufacturers, ESCOs etc.	15 June 2015	Operational	Probability = 2 Impact = 2 Overall Risk: Low	<ul> <li>MNRE, MoP and BEE have schemes to encourage the private sector through incentive scheme to promote renewable energy and energy efficiency applications – facilitating the availability of financing for investments in SAPCC implementation as well as availability of capital loans and generation-based incentives to project developers. The project will help designing and operationalizing these aspects and institutional arrangements of the fiscal instruments, and to support interventions in the nascent RE and EE market at state level.</li> </ul>	UNDP	UNDP CO		
7	Relevant RE and EE investment projects are successfully demonstrated, but then do not get replicated for a variety of internal or external factors. This could lead to a negative circular effect in terms of credibility around the project.	15 June 2015	Organisation al	Probability = 2 Impact = 3 Overall Risk: Medium	<ul> <li>The project through its implementing partner, MoEFCC, will take a strongly pro-active approach to publicising demo project results and to actively supporting subsequent replication projects with suitable project information and support activities.</li> </ul>	UNDP	UNDP CO		
8	Limited involvement of sector agencies and stakeholders in the climate change mitigation options identified	15 June 2015	Strategic	Probability = 3 Impact = 2 Overall Risk: Medium	<ul> <li>One of the prime focuses of the project is strengthening stakeholder capacities and facilitating their involvement in the climate change mitigation actions identified. This will be undertaken largely under the capacity development component of the project. The project through its implementing partner, MoEFCC, will address</li> </ul>	UNDP	UNDP CO		

No.	Description	Date Identified	Туре	Impact and Probability (on a scale of 1 (low) to 5 (high))	Countermeasures/ Management Response	Owner	Submitted, updated by	Last update	Status
					constraints related to access to finance through market-based frameworks and de-risking the investment environment.				
9	Delay in the adoption of priority actions outlined in the SAPCCs by the state government sectoral departments.	15 June 2015	Regulatory	Probability = 3 Impact = 2 Overall Risk: Medium	<ul> <li>The MoEFCC will be monitoring the SAPCC implementation. If states are not active they will not be able to utilize development funds earmarked under different Missions. So, MoEFCC is encouraging the state governments and monitoring the progress of state plan implementation. The project through its implementing partner, MoEFCC, will provide technical support to the State Nodal Agency (SNA) in influencing the sectoral decisions and the budgetary process for accelerating adoption of priority mitigation actions outlined in the plan with the relevant departments.</li> </ul>	UNDP	UNDP CO		
10	Impact of climate change on the proposed interventions due to change in climate variables including precipitation, humidity, wind speed and cloudiness	15 June 2015	Environment al	Probability = 2 Impact = 2 Overall Risk: Low	<ul> <li>Both the states have subtropical dry climate which is suitable for solar applications. Change in temperature and level precipitation to an extent will not have any significant effect on the solar insolation.</li> </ul>	UNDP	UNDP CO		
11	Limited institutional capacities to support project implementation and programme continuity at the state level	15 June 2015	Organisation al	Probability = 3 Impact = 3	<ul> <li>The technical and financial support, including the co-financing leveraged through the project, will address this risk by building and retaining the necessary technical, managerial and implementation</li> </ul>	UNDP	UNDP CO		

No.	Description	Date Identified	Туре	Impact and Probability (on a scale of 1 (low) to 5 (high))	Countermeasures/ Management Response	Owner	Submitted, updated by	Last update	Status
				Overall Risk: Medium	<ul> <li>capacities during the project life and beyond.</li> <li>The project through its implementing partner, MoEFCC, will promote common principles for planning and implementation, but with sufficient flexibility to take account of differences in institutional frameworks and in capacities of the state governments. The planning process will emphasise multi-stakeholder engagement to ensure inter- departmental coordination.</li> </ul>				
12	Lack of financial institutions' sustained commitment for implementation of SAPCC	15 June 2015	Financial and organisationa 1	Probability = 3 Impact = 2 Overall Risk: Medium	<ul> <li>Engaging financial institutions at different levels and providing cost- benefit analysis of different technologies. One of the mechanisms could be developing and advocating for regulatory reforms to improve the business environment in the priority areas identified.</li> </ul>	UNDP	UNDP CO		
13	There is a significantly slow start of on-the-ground project activities	15 June 2015	Organisation al	Probability = 3 Impact = 5 Overall Risk: High	<ul> <li>In 2015 a Central PMU will be established in MoEFCC as well as the state PMUs. This will ensure that once all the necessary UNDP GEF-SAPCC project approvals are obtained that the project can then be implemented with the least possible delays.</li> </ul>	UNDP	UNDP CO		
14	There is significant RE/EE technology underperformance or failure in project activities (technical risk)	15 June 2015	Others	Probability = 1 Impact = 5	- The project's mix of RE and EE technology is carefully balanced between well proven RE- EE applications and the extension of	UNDP	UNDP CO		

No.	Description	Date Identified	Туре	Impact and Probability (on a scale of 1 (low) to 5 (high))	Countermeasures/ Management Response	Owner	Submitted, updated by	Last update	Status
				Overall Risk: Low	proven RE/EE technologies into new state level applications.				
15	There is a lack of necessary leadership and/or slow or low quality decision-making in the PMU.	15 June 2015	Organisation al	Probability = 2 Impact = 4 Overall Risk: Medium	<ul> <li>A detailed Project Operations Manual has already been developed to define key accountabilities, management responsibilities, and operational procedures for all levels of the project's implementation. A strong PSC and TAC structure will be established and will be given strong support to ensure the ongoing effectiveness and efficiency in the project's implementation.</li> </ul>	UNDP	UNDP CO		

#### A.7. Coordination with other relevant GEF financed initiatives

The MoEF, as the nodal Ministry for this GEF project, will be coordinating with the relevant institutions and other related projects/programs in order to avoid duplication of efforts, and enhance the complementarity and synergy between these projects. The project will build synergies with other on-going national initiatives, GEF and non-GEF projects in the area of energy efficiency and renewable energy. The on-going GEF projects are (a) energy efficiency in buildings, (b) Energy efficiency in steel industries, (d) Solar concentrators for thermal applications, (e) Energy efficiency in SMEs, (f) Biomass power projects, etc. Some of the completed GEF projects are (a) Hilly Hydel; (b) High-rate Bio-methanation; (c) Energy efficiency in Tea industry; (d) Solar water heaters; (e) Biomass energy for rural India (BERI) etc. Most of these projects have successfully demonstrated the application of either renewable energy or energy efficiency measures. With regard to renewable energy generation, some of these projects have provided useful lessons on the importance of preferential tariff support for small-scale power generation through targeted policy measures and financial tools – such as performance-based payment, capital subsidies, soft loans etc. - which will be detailed during PPG. There is considerable scope for the replication of these successful measures and tools in the current project. The current project will also coordinate with projects of the World Bank, such as line-of-credit provision to IIFCL (India Infrastructure Finance Company Ltd) for lending to solar power projects in India. On the energy efficiency side, lessons learnt on some of the unsuccessful financial mechanisms, such as the risk insurance scheme and ESCOs in the context of SMEs, is vital. All these experiences will be taken into account while designing and implementing pilot interventions under the SAPCCs and linking possible options for scale-up.

A number of climate change planning initiatives are currently underway by various donor agencies in partnership with the state governments. In particular, GIZ and UNDP are supporting the preparation of climate change action plans in various states. GIZ has also selected some states for longer-term implementation assistance, but in most of the other states the support from UNDP and GIZ has been mostly in terms of preparation of the SAPCCs. The current project will complement this support by providing longer-term assistance for the implementation of plans, and investing in knowledge and cross-learning between the states

In addition, several of GEF projects are currently underway by some of the GEF implementing agencies, these include: Preparation of Third National Communication (TNC) and Other New Information to the UNFCCC (UNDP), Promoting Business Models for Increasing Penetration and Scaling up of Solar Energy (UNIDO), Scale Up of Access to Clean Energy for Rural Productive and Domestic Uses (UNDP) and the Partial Risk Sharing Facility for Energy Efficiency (World Bank). The current project will coordinate and draw synergies with these on-going projects, as many of the activities of the current project have enough scope of cooperation and learnings from similar projects.

#### **B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:**

#### **B.1** Describe how the stakeholders will be engaged in project implementation.

The strong participation of a large number of stakeholders from central government, state governments, NGOs, financial institutions, industry, and academic institutions, equipment manufacturers and suppliers, energy service companies, international organizations and financial institutions is required for the project's interventions in the RE and EE application area in India to be successful. A brief description and proposed role of the project's key stakeholders is presented in Table 2 below.

Stakeholder	Role in Project Implementation						
Government – Central Level							
Ministry of Environment, Forests and Climate Change (MoEFCC)	MoEFCC is the GEF focal point for GEF projects in India and thus will liaise with GEF and provide overall coordination of the project. It will act as the Coordination Unit for the implementation of this project.						
Ministry of New and Renewable Energy (MNRE)	MNRE will provide inputs for the planning, design and implementation of the project activities and will assist the states in design and implementation of renewable energy programs and investment projects. MNRE support will						

#### TABLE 2: KEY STAKEHOLDERS INVOLVED IN THE PROJECT

	reach the states through various national and state level schemes and the National Solar Mission (NSM). MNRE will also ensure that the Solar Energy Corporation of India (SECI) takes up the investment projects in the states of Jharkhand and Manipur.
Solar Energy Corporation of India (SECI)	Solar Energy Corporation of India (SECI) has been set up as a not-for-profit company under Section-25 of the Companies Act 1956 for implementation and facilitation of Solar Energy programs. SECI will assist the states in design and implementation of solar park and roof-top solar projects. It will also facilitate the implementation of activities under JNNSM and achieving the targets set therein for both Manipur and Jharkhand states.
Bureau of Energy Efficiency (BEE)	BEE is the nodal agency for the National Mission on Enhanced Energy Efficiency, under the aegis of the Ministry of Power. Consultations and coordination with BEE will provide inputs for planning, design and implementation of the projects for achieving improved energy performances in the two selected states.
Energy Efficiency Services Limited (EESL)	EESL is a Super ESCO and has been created to deliver the market-related actions of the NMEEE. It will work with both the selected states for the implementation of energy efficiency projects for Demand Side Measures including municipal, agriculture, public building, lighting etc. It will also assist in developing the market for other private ESCO's and companies to promote energy efficiency, and can act as a resource centre in the field of Energy Efficiency and take up the activities of Capacity Building Training and other related activities.
<b>Government – State Level</b>	
Department of Environment, Manipur and Department of Forests and Environment, Jharkhand	These departments are the nodal agencies both for preparation and implementation of the SAPCC. They are the key stakeholders in the project for coordinating project implementation. They will be lead agencies for project implementation, coordination with other departments for implementation, project monitoring, oversee the accomplishment of project objectives and tasks, lead co-funding requirements, initiate policy actions on its own and through other departments, and facilitate coordination with other key stakeholders.
Jharkhand Renewable Energy Development Agency (JREDA) and Manipur Renewable Energy Development Agency (MANIREDA)	These are the state level agencies for the promotion and implementation of renewable energy and energy efficiency. They will play the key role in the implementation of investment projects with support from EESL and SECI and other stakeholders (public & private sector). These agencies will work very closely with the state nodal agency for SAPCC during the implementation phase of the project, and ensure coordination with other stakeholders.
State Electricity Regulatory Commissions (SERCs) and State electricity distribution companies	The SERCs have the responsibility for determining electricity tariffs and for regulating power purchase and procurement processes within their state. SERCs will be key project partners as it is expected that tariff structures for grid electricity generation (through solar rooftop PV) would ideally be updated through project activities. The state electricity distribution companies will also be involved in providing needed electricity generation and consumption data for the project sites under the project.
Urban Local Bodies in Jharkhand and Manipur	ULBs will be engaged in implementing municipal EE projects under the project and will be involved in preparing the replication and scale up plan for the state.
Financial Institutions	
Financial institutions such as IREDA, State Bank of India, Union Bank of India, NABARD, Pvt Equity Funds etc.	Financial institutions (including public and private sector banks, venture capitalists, etc.) will be involved in project implementation through co-financing, and would be engaged in project progress and monitoring etc.
International Organization	
United Nations Development Programme (UNDP)	UNDP will serve as the GEF implementing agency for the proposed project and ensure that the project will deliver its objectives. It will carry out monitoring & evaluation, and facilitate the budgetary provisions.

Private sector enterprises i	Private sector enterprises involved in developing / delivering specific renewable energy/EE solutions					
RE/EE equipment providers and manufacturers	RE and EE equipment providers like TATA BP Solar, Schneider, inverter/battery manufactures and manufacturers of EE equipment's and lights will be involved in the project implementation for supplying the related equipment for the project.					
CSO and NGOs						
Civil Society Organizations	CSOs will be involved in the project implementation as one of the stakeholders, to generate ownership among identified stakeholders for the implementation of selected RE and EE interventions.					
Academic and Research In	stitutes					
Academic Institutions	Their role in the project implementation is to provide expert opinion, design of monitoring and reporting system for the implemented RE and EE interventions. These are expected to respond to the needs of the PMU					

## **B.2** Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund/NPIF) or adaptation benefits (LDCF/SCCF):

The project is focused on designing and facilitating implementation as well as building capability for new PPP based models for RE and EE interventions. These new projects will clearly generate employment in the two states as well as create new expertise through its explicit and robust capacity building component. Thus, the project will have clear and large socioeconomic impact at the state level. Additionally, creating such expertise and new employment opportunities will also have its spill over social and economic impact on the national economy with lesser migration of workforce to larger metropolitan states in search of employment opportunities. The project will also assist energy and gender linkages. The selected states under the project have large energy deficits and energy access issues. The current project by contributing towards reducing this deficit through RE and EE interventions will also indirectly contribute to women empowerment. As women are most vulnerable to energy access and shortage implications, the current project will work towards addressing this gap. It is expected the project will directly or indirectly have an impact on nearly 17.8 million combined populations in the two states.

#### **B.3.** Explain how cost-effectiveness is reflected in the project design:

This UNDP GEF SAPCC Project has been designed as an integrated and suitably co-funded a set of activities to remove the multiple barriers facing the implementation of the SAPCC in two specific states (Jharkhand and Manipur) in India, with a possible extension other states. The enhanced utilization of applicable existing state level RE and EE programmes and interventions will support the project. The project will also be supported by central and state level budgets for implementation of SAPCCs and will also be supported by appropriate NGOs, financial institutions, industrial companies, and academic institutions.

Though the two states selected under the GEF project have prepared and submitted their SAPCC's in 2013, no real action had been undertaken ever since. SAPCC's for the states presented more of a wish list of actions for climate change with no real prioritization or dovetailing of the SAPCC with other developmental plans in the states. SAPCC have more or less remained as standalone documents, being pursued in isolation by the nodal agencies only. In addition, the states have several market barriers, as highlighted in the earlier sections, which have prevented implementation on the plans for this long. The current GEF project will be very timely in helping the selected states in kick starting the SAPCC implementation process. The project by prioritizing the RE and EE actions in the SAPCC will help steam line the SAPCC wish list in terms of what is doable in the immediate short term, medium term or long term. By engaging different state level stakeholders in implementation, the GEF project will also help in aligning the states climate change mitigation ambitions with other developmental efforts. The GEF project will also assist in building institutional capacities across state government departments for designing and implementing climate change mitigation actions, which otherwise would have not been prioritized.

The project's design is highly cost effective as it maximizes the enhanced mobilization and the effective pooling of existing but still underutilized RE and EE funding and other support mechanisms that are already available at the applicable central and state levels in India. In addition, the India GEF SAPCC project (this

project) will follow on from and utilize the operational knowledge, management arrangements, and institutional structures established by the MNRE and UNDP Core funded "Increasing access to Renewable Energy for micro-enterprises in Rural India" project (the Core project) that is now being established and that will be fully operational in late 2014. The India GEF SAPCC project will focus on the use of established RE and EE technologies that will be systematically demonstrated and plan for replication created.

Overall, the project is expected to achieve potential cumulative direct and indirect  $CO_2$  emission reductions of about 31.16 million t $CO_2$  during the economic lifetime of the interventions that will be carried out under the project. Considering the US\$ 3,744,500 contribution of the GEF for this project, the estimated unit abatement cost is about US\$ 0.12/tonne  $CO_2$ .

#### C. DESCRIBE THE BUDGETED M &E PLAN:

The following main project monitoring and evaluation activities will be carried out: (1) Measurement of means of verification for project progress and performance (baseline and impact analysis); (2) Annual project reporting, including project implementation review (PIR); (3) Tripartite review meetings; (4) Periodic status reporting; (5) Audits; (6) Mid-term external review; (7) Final (Terminal) external review; and, (8) Visits to field sites. These activities have been included in the budget under project management.

Type of M&E activity	Responsible Parties	Budget US\$ Excluding project team staff time	Time frame
Inception Workshop and Report	<ul><li>Project Manager</li><li>UNDP CO, UNDP GEF</li></ul>	Indicative cost: 10,000	Within first two months of project start up
Measurement of Means of Verification of project results.	<ul> <li>UNDP GEF RTA/Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members.</li> </ul>	Indicative cost: 50,000	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on <i>output and</i> <i>implementation</i>	<ul> <li>Oversight by Project Manager</li> <li>Project team</li> </ul>	Indicative cost: 10,000 (to be determined as part of the Annual Work Plan's preparation)	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	<ul> <li>Project manager and team</li> <li>GEF OFP</li> <li>UNDP CO</li> <li>UNDP RTA</li> <li>UNDP EEG</li> </ul>	None	Annually
Periodic status/ progress reports	<ul> <li>Project manager and team</li> </ul>	None	Quarterly
Mid-term Evaluation	<ul> <li>GEF OFP</li> <li>Project manager and team</li> <li>UNDP CO</li> <li>UNDP BRH</li> <li>Independent External Consultants (i.e. evaluation team)</li> </ul>	Indicative cost: 30,000	At the mid-point of the project's implementation.
Terminal Evaluation	<ul> <li>GEF OFP</li> <li>Project manager and team,</li> <li>UNDP CO</li> <li>UNDP BRH</li> <li>Independent External Consultants (i.e. evaluation team)</li> </ul>	Indicative cost: 30,000	At least three months before the end of the project's implementation
Project Terminal Report	<ul><li>Project manager and team</li><li>UNDP CO</li><li>Local consultant</li></ul>	0	At least three months before the end of the project

Type of M&E activity	Responsible Parties	Budget US\$ Excluding project team staff time	Time frame
Audit	<ul> <li>UNDP CO</li> </ul>	Indicative cost per year:	Yearly
	<ul> <li>Project manager and team</li> </ul>	3,000	
Visits to field sites	<ul> <li>UNDP CO</li> <li>UNDP BRH (as appropriate)</li> <li>Government representatives</li> </ul>	For GEF supported projects, paid from IA fees and operational budget	Yearly
TOTAL indicative COST Excluding project team stat	ff time and UNDP staff and travel expenses	US\$ 142,000 (+/- 5% of total budget)	

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

## A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT(S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the <u>Operational Focal Point endorsement letter(s)</u> with this form. For SGP, use this <u>OFP endorsement letter</u>).

ΝΑΜΕ	POSITION	MINISTRY	DATE
Mr. Susheel	Additional Secretary,	Ministry of Environment, Forests	04/23/2013
KUMAK	Point	of India	

#### 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 CEO endorsement/approval of project.

Agency Coordinator, Agency Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Adriana Dinu, Executive Coordinator, GEF	Ainm	09/01/2015	Butchaiah Gadde, Regional Technical Specialist	+66 2304 9100 ext 5048	butchaiah.gadde @undp.org

**ANNEX A: PROJECT RESULTS FRAMEWORK** (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

The project will contribute to achieve following country program Outcomes (as defined in CPD):
Project: Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans
Outcome: Implementation of SAPCC
Output: support for actions that assist in effective implementation of SAPCCs
Output indicators: number of CCM investment projects implemented and plan prepared for scale up.
Country program outcome indicators:
Outcome: Progress towards meeting national commitments under multilateral environmental agreements
Output: Supporting national development objectives with co-benefits of mitigating climate change
Output indicators: (a) Annual reductions in greenhouse gas (GHG) emissions in India; (b) million USD flowing annually to India from GEF through UNDP for this programme; (c)
number of additional UNDP initiatives for achieving global and national targets under multilateral environmental agreements.
Primary applicable key environment and sustainable development result area:
Increased capacity at sub-national level to implement climate change mitigation actions and incorporation of CCM actions in state budgets and development plans.
Applicable GEF strategic objective and program:
Strategic Objective: Objective 1: Promote the demonstration, deployment, and transfer of innovative low-carbon technologies. Objective 2: Promote market transformation for
energy efficiency in industry and the building sector. Objective 3: Promote investment in renewable energy technologies
Strategic Program: Climate Change Mitigation
Applicable GEF expected outcomes:
1. Appropriate policy, legal and regulatory frameworks adopted and enforced
2. Sustainable financing and delivery mechanisms established and operational
3. GHG emissions avoided
Applicable GEF outcome indicators:
1. Extent to which EE policies and regulations are adopted and enforced
2. Volume of investment mobilized
3. Tonnes CO <sub>2</sub> eq avoided

Strategy	Objectively Verifiable Indicators		Means of Verification	Critical Assumptions	
	Description	Baseline	Target	-	
<b>Project goal:</b> Reduced GHG emissions achieved through implementation of RE and EE solutions at the state level as identified in the SAPCCs	Cumulative CO <sub>2</sub> emission reduced from start of project to End-Of-Project (EOP), (million tCO <sub>2</sub> e)	0	304,250	M&E reports of the demonstration and replication projects	Continued support and participation from co- financing institutions, MoEFCC, MNRE, state nodal agencies, state renewable energy development agencies and other stakeholders
<b>Project Objective:</b> To support the effective implementation of specific energy efficiency and renewable energy climate change mitigation actions identified in the SAPCCs for	Total energy savings achieved from implemented RE and EE mitigation actions by EOP, MWh	0	190,452	M&E reports of the demonstration and replication projects	Continued support and participation from co- financing institutions, MoEFCC, MNRE, state nodal agencies, state renewable energy development agencies and other stakeholders
Manipur and Jharkhand	Total installed capacity of RE systems (MW) by EOP	0	28		
	Number of people benefitted directly or indirectly with improved energy access in the two states through the project interventions by the EOP (million). ( <i>This includes,</i> <i>improved job opportunity,</i> <i>quality of life and education.</i> )	0	17.8		
Component 1: Framework for the im	plementation of climate change m	itigation opti	ons in the select	ted states SAPCCs	
<b>Outcome 1:</b> Successful and sustainable implementation of priority CCM actions on energy generation and application of EE & RE technologies in the major energy end-use sectors in selected states	Number of CCM actions implemented by the project in the states by EOP.	0	9	Mitigation actions finalized and feasibility report prepared	Continued interest of stakeholders
Output 1.1: Regularly updated GHG abatement cost curves at state level	Number of abatement cost curves prepared by Year 1	0	4	Updated abatement cost curves prepared	State nodal agencies are interested in the adoption of diligent data collection and adoption of MRV system
<b>Output 1.2:</b> Selected prioritized RE and EE actions listed in Manipur and Jharkhand Action Plans on Climate Change for implementation	Number of prioritized RE and EE mitigation actions selected for implementation in the states by end of year 1	0	9	Minutes of the meeting held with stakeholders for ensuring buy in on the prioritized actions	Continued support from MoEFCC, MNRE, State agencies for implementing RE and EE actions

<b>Output 1.3:</b> Designed and implemented common monitoring, reporting, and verification (MRV) system for the selected RE and EE actions of the Manipur and Jharkhand APCC, in a way to feedback into the SAPCC process	No. of monitoring, reporting, and verification (MRV) systems designed and implemented in the states by Year 3	0	5	Report on designed monitoring, reporting, and verification (MRV) systems	Dedicated support from state agencies for design and implementation of MRV Systems
Component 2: Catalyzing investment	s for implementation of selected R	E and EE mi	itigation action		
Outcome 2: Enhanced states capability and capacity for identifying, designing, planning, financing and implementing selected RE and EE actions from their SAPCC	Number of locally designed, planned and financed RE and EE projects implemented in the states by EOP	0	9	Inception reports/assessment reports of RE and EE mitigation projects operating in the states	There is continued support and participation from state agencies and ministries at national level. Enough technical and financial capacity is available in the state for implementation of projects
<b>Output 2.1:</b> Completed evaluation of existing available loan mechanisms for projects developed as part of SAPCC targets	Number of loan mechanisms evaluated by Year 2	0	5	Evaluation reports for loan mechanisms	All state agencies are supportive of implementing the selected RE and EE actions
<b>Output 2.2:</b> Implemented non- grant financing instruments such as flexible debt finance (including long tenure low-interest loans)	Number of non-grant based financial instruments developed by Year 3	0	1	Evaluation reports for non -grant instruments developed	All state agencies are supportive of implementing the selected RE and EE actions
Output 2.3: Mobilized public and private sector funding	Amount of total funding mobilized for implementation (US\$) by Year 4	0	12,000,000	Letters of endorsement from funding sources	Continued interest in the selected RE and EE mitigation actions by co-financing institutions and public and private sector
<b>Output 2.4:</b> Established public private partnerships (PPP) for implementation and scaling up of	Number of replication projects on the selected RE and EE mitigation actions implemented by EOP	0	32	Project assessment reports	Continued interest in the selected RE and EE mitigation actions by co-financing institutions and public and private sector

selected RE and EE actions in Manipur and Jharkhand	No. of PPP business models developed by Year 3	0	9	Comparative assessment report of PPP business models for RE and EE implementation	
<b>Output 2.5:</b> Implemented nine RE and EE investment projects in Manipur and Jharkhand	No. of demonstration investment projects based on innovative financial models developed by end of year 1	0	9	Performance assessment reports of the investment projects	All state agencies are supportive of implementing the investment projects
	No. of demo investment projects implemented by EOP	0	5	M&E reports of the demonstration	All state agencies are supportive of implementing the investment projects
<b>Output 2.6:</b> Completed implementation manual and workshops for supporting the implementation of selected public.	No. of implementation manuals developed by Year 3 (one manual for each state)	0	2	Implementation manuals	Continued support and participation of the state governments and workshop proceedings are approved by state nodal agencies
private partnership models for RE and EE actions	No. of workshops conducted on sensitizing the state agencies on proposed models by Year 4	0	2	Workshop proceedings	
Component 3: Capacity development	of concerned state level officials f	or implement	ation of respec	tive SAPCC	
		0	-		
Outcome 3: Enhanced technical capability of state government in integrating climate change concerns within state sectoral development plans and budgets and undertaking MRVs efficiently for SAPCC actions, facilitated inter-state learning and coordination for SAPCCs	No. of sectoral state budgets for RE and EE activities that are aligned with the budgets proposed under SAPCCs by Year 2	0	2	Annual budgets for RE and EE activities in Jharkhand and Manipur	Increased interest of state level bodies in implementation of RE and EE mitigation actions
Outcome 3: Enhanced technical capability of state government in integrating climate change concerns within state sectoral development plans and budgets and undertaking MRVs efficiently for SAPCC actions, facilitated inter-state learning and coordination for SAPCCs Output 3.1: Aligned state sectoral budgets for development plans to include climate change mitigation actions related expenses	No. of sectoral state budgets for RE and EE activities that are aligned with the budgets proposed under SAPCCs by Year 2 Allotment of budget for climate change actions in departmental budgets by year 2	0	2	Annual budgets for RE and EE activities in Jharkhand and Manipur Review report	Increased interest of state level bodies in implementation of RE and EE mitigation actions Continued support and participation from State agencies and sharing of state documents
Outcome 3: Enhanced technical capability of state government in integrating climate change concerns within state sectoral development plans and budgets and undertaking MRVs efficiently for SAPCC actions, facilitated inter-state learning and coordination for SAPCCs Output 3.1: Aligned state sectoral budgets for development plans to include climate change mitigation actions related expenses Output 3.2: Completed training and capacity building programs on the developed MRV systems for	No. of sectoral state budgets for RE and EE activities that are aligned with the budgets proposed under SAPCCs by Year 2 Allotment of budget for climate change actions in departmental budgets by year 2 No. of handbooks and guidelines prepared for MRV system by year 3	0	2 2 2 2	Annual budgets for RE and EE activities in Jharkhand and Manipur Review report Handbook and guidelines	Increased interest of state level bodies in implementation of RE and EE mitigation actions Continued support and participation from State agencies and sharing of state documents Continued support and participation from the state agencies

<b>Output 3.3:</b> Established institutional mechanism for inter- state exchange of information and technology dissemination for Manipur and Jharkhand for implementation of SAPCC mitigation actions	No. of joint CCM actions discussed and planned for implementation between states by EOP	0	4	Meetings report	Interested state agencies in both states for inter-state exchange of information and technology
<b>Output 3.4:</b> Conducted inter-state study trips and stakeholder	No. of study trips undertaken by EOP	0	4	Study trip reports	Continued support and participation from state nodal agencies
interaction workshops	No of workshops undertaken by EOP	0	4	Proceedings of the workshop	Interested state agencies in both states for attending the workshops on RE and EE mitigation actions and market transformation strategies
<b>Output 3.5:</b> Established and operational information dissemination system on lessons learnt from investment projects	No. of brochures, case study reports and other printed material published and disseminated by year 4	0	10	Printed brochures, case study reports and other printed material	Public and Private sector agencies take higher amount of interest in disseminating the learning's
undertaken on priority RE and EE actions.	No of users of the system/year starting Year 4	0	2,500	Web portal Number of hits on the web site	Wide use of internet by various state level stakeholders Interested public, private, research, education and voluntary agencies in both states and at national and international level visit the web portal of the project

#### ANNEX B: RESPONSES TO PROJECT REVIEWS

(From GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

#### **GEF** Sec comments at the clearance of the PIF

Comments and Responses	Reference
<b>Comment 4:</b> DER/KC August 22, 2013. Comments cleared. More detailed illustrations of investment components will be submitted at CEO endorsement.	
<b><u>Response</u></b> : Detailed illustration of the investment components along with GHG Abatement potential has now been included in the project document.	ProDoc: Part A, section 2.5 to 2.7, p42-48
<ul> <li>Comment 25:</li> <li>b) The GEF agency is also advised to use the GEF/STAP GHG methodologies, wherever applicable.</li> <li>c) Clear linkage to the technology needs assessment (TNA) being conducted along with the National Communications.</li> <li>d) More detailed illustration to validate private sector engagement in the project.</li> </ul>	
<b><u>Response</u></b> : GEF/STAP GHG methodologies have been used to calculate the CO <sub>2</sub> emissions reduction included in the project document. The technologies finalized for implementation under the project are in line with those prioritized at the state level as well as included in the needs assessment for national communications. The project has now been designed in way to promote public private partnerships for implementation of selected mitigation actions in the two states. The implementation of pilots during the project will be based on public partnership model and innovative financing mechanisms to involve the private sector. The project outputs and activities have been designed in a way to engagement with the private sector at various stages of the project.	ProDoc: Part A, section 2.9, p57 and Part B, section 7.2.2., p79

#### GEF COUNCIL COMMENTS

Comments and Responses	Reference
Comments from Germany (March 2014)	
Germany approves the following PIF in the work program but asks that the	
following comments are taken into account:	
Suggestions for improvement to be made during the drafting of the final project	
proposal:	
The innovative character of the project is rather weak. SAPPCs as such cannot be considered innovative.	
• In line with the STAP's comment on the rather broad assumptions related to emissions reductions, Germany seeks clarification on the choice made regarding the two pilot states. The mitigation potential is higher in other states.	

Comments and Responses	Reference
<ul> <li>It is crucial to ensure the linkage of the project with other initiatives throughout India as well as coordination between them to avoid duplication. It could be explained more thoroughly, how lessons learned will be shared.</li> <li>Developing the MRV system for SAPPCs is a crucial component of the project. When designing the MRV systems for the states of Manipur and Madyha Pradesh, special attention should be paid to ensure that the objective and scope of the SAPPCs is well understood to steer the process and monitor progress in achieving the desired outcomes. It would also be beneficial to integrate lessons learned from MRV systems in other states into the planning. In the same sense, the lessons learned from the project should be shared with other states. Furthermore, coherence with the national MRV system for the NAPPC should be ensured. National guidelines for the preparation of SAPPC MRV systems could be very helpful.</li> </ul>	
Response:	
The states of Jharkhand and Manipur are selected for the implementation of the current UNDP GEF SAPCC project. These two states are among the most vulnerable states in India. They have been selected as pilot states in the proposed project so as to (a) build on their approved SAPCCs, which are now ready for implementation, (b) achieve geographical balance in project coverage, and (c) cover diverse climatic conditions, so as to link diverse aspects and cross-learning between neighbouring states. The two states also represent different techno-economic profiles in terms of technology cost, availability and energy mix. The collective indicative budget of the SAPCCs of the two state governments of Jharkhand and Manipur amounts to US\$ 1,183 million (INR 7,093.35 Crores).	ProDoc: Part A, section 2.3, p33
One of the finalized states is different from the one proposed in PIF, namely Madhya Pradesh, in place of which Jharkhand has been selected. The reason for this change was largely on account of institutional changes at the state government level in Madhya Pradesh for the renewable energy sector. By the beginning of the PPG phase, there were two separate departments of on-grid and off-grid RE created at the state level in Madhya Pradesh. Lack of clear support from the concerned agencies and greater institutional coordination hurdles that may be created, led to replacement of Madhya Pradesh in the PPG phase.	
Further details on selection of the state and justification for implementation of RE and EE projects in the two states is provided in the project document.	ProDoc: Part A, section 2.9, p57 and Part
The project has been designed in way to ensure absolute policy conformity and also interlinkages with other policies and programs on RE and EE in India. The same have been explained in greater detail in the project document. In order to ensure information exchange and lesson learning between the states, the project strategy has incorporated study trips and workshops between the two states during the project implementation phase.	B, section 7.2.3, p82
Clear guidelines and approach for development of an effective MRV system has been incorporated in the project strategy. An exhaustive review of current MRV systems and lessons learning between the states is incorporated as key activities of the project.	ProDoc: Part B, section 7.2.1, p75 and 7.2.3, p82

Comments and Responses	Reference
Comments from USA (March 2014)	
The United States believes that the general reasoning for supporting effective implementation of the State Action Plans on Climate Change (SAPCC) in India is logical and compelling. To ensure this project will be implemented as it is envisioned, we request that the UNDP modify the full project proposal in response to our technical comment prior to GEF CEO Endorsement.	
• Since this project will focus on Madhya Pradesh and Manipur, the United States recommends several aspects of the proposal be reconsidered to better respond	
<ul> <li>to account for local constraints.</li> <li>The final project proposal should address the specific risks associated with project finance in Madhya Pradesh and Manipur. These risks could be different in each state and may include: (1) limited reliability of energy resource assessments; (2) unrealistic bids for grid-tied solar energy procurement; (3) reliability of the state subsidy scheme; and (4) payment risk from the off-taker for the solar procurement. It would be worthwhile to look at the issue of off-taker payment risk under the state renewable energy policies, since many of India's distribution utilities are financially stressed.</li> </ul>	
• The strategy for catalysing investments should reflect existing practices in Madhya Pradesh and Manipur. For example in Madhya Pradesh, solar power is procured through a tender which is often over-subscribed, as in the recent round two of the National Solar Mission. Therefore, there should be a stronger rationale for the focus on pipeline development as the key constraint for mobilizing investment.	
<ul> <li>The final project should examine the manner in which the SAPCC are planned and operationalized in the target states. Specifically, what are the state agencies involved in renewable energy and development? To what extent can the State Nodal Agency (SNA) for climate change influence these other agencies and what efforts are already underway that may need to be considered? For example, in Madhya Pradesh, there are ongoing plans being implemented with support from the Department for International Development (DFID) for energy efficiency as well as with the International Finance Corporation (IFC). How will this project fit in with these other ongoing initiatives to avoid duplication and seek to achieve complementarity?</li> <li>The final proposal should incorporate "lessons learned" from previous efforts in Manipur and Madhya Pradesh to address similar energy and climate change initiatives.</li> </ul>	
Response:	
The final selected states for project implementation are Jharkhand and Manipur. Jharkhand is in the process of finalizing the Solar Policy and the GEF project will ensure that the policy should support the procurement of solar power through tenders is not over-subscribed. The investment projects designed under the project are expected to provide stronger rationale for the focus on pipeline development so that the key constraint for mobilizing the investments should be avoided.	ProDoc: Part B, section 5.1, p69

Comments and Responses	Reference
The project, with the help of designed investment projects using innovative financing mechanisms will ensure that the (a) Investments are mobilized from the market and from both public and private sector, and (b) The State Nodal Agency (SNA) for climate change are actively involved and can influence the other agencies to leverage the activities with project activities. The implementation framework proposed under the Component 1 of the project will support the states in better defining the roles of other donor agencies working in the state on renewable energy and energy efficiency programs. This will avoid the duplication of efforts in the focused states.	
<ul> <li>The United States would like to see the proposal strengthened with respect to how it will have a sustainable, broad impact.</li> <li>To help the capacities developed be sustained long after the project end, we recommend there be a strategy for managing the risk of training people who are not retained by institutions. Ideas to be considered include but are not limited to development of a targeted approach for participant selection, or establishment of a local capacity to provide training in recognition of the potential for high turnover of the trained staff of the SNA.</li> <li>To increase the likelihood that the product of this project will be broadly adopted, we request that there be an analysis of state specific needs for implementation of the SAPCCs. Additionally, it will may also be beneficial further explore the specific priorities in Manipur and Madhya Pradesh in terms of commitments and reporting.</li> </ul>	
Response:	
The project is focusing on the design and implementation of innovative mechanisms for EE and RE mitigation actions. The MRV is an important component of the project. Thus the project is going to provide training to key state level officials on design and implantation aspects. The project activities are designed in such a manner that no short term Government and other participant can participate in the trainings. The major focus of all the capacity building exercises will be on the selection and training of participants who are going to be available even after the completion of project term.	ProDoc: Part B, section 7.2.3, p82
Detailed analyses of SAPCCs for both the states have been conducted for identification of the specific needs and to design the project activities and the investment projects. The shortlisted activities have been shared with state level stakeholders to prioritize the actions under the project. This has ensured the commitment from the state agencies. The letter cost share letters from both the states is an example of the commitment coming forward from both the states.	ProDoc Part A. section 2.7 & 2.8. p47-48, Part B, section 7.2.1, p75

#### **STAP Screening of the PIF (24 February 2014)**

The majority of funding is for mitigation interventions in two pilot states with much of the balance for MRV and capacity development of state government officials. The two states, Madyha Pradesh

and Manipur, have good quality RE resources but have received limited support from national programmes to date. For this project, \$24.5 M is budgeted. The GEF funding is to help mobilise this budgeted amount wisely, including improving EE initiatives in three municipalities. STAP has the following comments:

Comments and Responses	Reference
1. The national solar and energy efficiency, cap-and-trade schemes will be utilized across all sectors. Large scale (> 2MW) PV plant development, street lighting and water pumping are the main areas to be targeted. Waste-to-energy projects are mentioned but not yet identified, so it is not clear if these are to be included or not. A parallel aim is to attract private sector investors. More specific information is required in the project document.	ProDoc: Part B, section 6.1, p72
2. Assessment of GHG emission reductions is based on very broad assumptions: e.g. 15% energy efficiency improvement; "average" electricity demand for a municipality of 130,000 TWh per year; 10 year life. However, after consultation and selection of interventions to be made during the PPG phase, more accurate determinations should be possible and presented in the project document.	ProDoc: Part A, section 2.4, p35 and Annexure D, p124 and E, p126. also, included India SAPCC Implementation Emissions Calculation spreadsheet
3. Identifying performance indicators in order to monitor the project is a useful approach. Development of the MRV system for SAPCCs is a necessary and very important part of project support. Other states should benefit eventually from the lessons learned. Some coherence between federal-level and SAPCC-level indicators would be desirable as well as between MRV system for SAPCCs and federal-level emission trading scheme, Perform, Achieve and Trade (PAT).	ProDoc: Part B, section 7.2.1, p75
4. As identified in the barriers table of the PIF, "inadequate regulatory incentives to encourage private investments through suitable and affordable financing" is important constraints on the sustainability of project interventions. It is compounded by the lack of climate financing experience among regional banks and financial institutions. Whatever regulatory incentives will be provided at both, federal and state levels will have to be properly developed during PPG stage. Activities aimed at improving "readiness" of state enterprises and financial institutions to participate in the project and access funding should be explored during project preparation and spelled out in the project document.	ProDoc: Part B, section 7.2.2,p79
5. In the project proposal, STAP would like to see more details about the project methodology for climate change integration within development plans and budgets at the state level. In this regard, project proponents might find useful review of the existing climate risks tools and methods prepared by STAP in 2011 (GEF/C.41/Inf.16) that lists a number of tools and methods used to account and mainstream climate risks into projects and development plans by different institutions.	ProDoc: Part B, section 7.2.3, p82
6. It is not clear who will be contracted to undertake the capacity development, presumably external consultants?	ProDoc: Part B, section 12, p108
7. The project will need to be carefully linked with the wide range of other initiatives being funded throughout India (as outlined in the proposal) to avoid duplication.	CER document:

Comments and Responses	Reference
Response:	section A7,
	p21
The project document has been prepared reflecting the above comments and	_
suggestions. Please refer to the relevant sections of the ProDoc as indicated for details.	

### ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS<sup>8</sup>

A. PROVIDE DETAILED FUNDING AMOUNT OF THE **PPG** ACTIVITIES FINANCING STATUS IN THE TABLE BELOW:

In April 2013, UNDP submitted the PIF and PPG request to the GEF Secretariat, which was cleared by the GEF CEO in February 2014. In 2014, the service of consultants was sought, supported by the PPG grant, to advise on the development of the project and elaborate the necessary documentation for GEF submission through UNDP.

Main achievements of the PPG phase are, (a) discussions with the relevant key stakeholders and project partners (Ministry of Environment, Forests and Climate Change (MoEFCC); Department of Environment, Manipur and Department of Forests and Environment, Jharkhand; Jharkhand Renewable Energy Development Agency (JREDA) and Manipur Renewable Energy Development Agency (MANIREDA); Ministry of New and Renewable Energy (MNRE); Bureau of Energy Efficiency (BEE)) have made possible the identification of relevant issues and barriers i.e. Awareness and capacity development for implementation of SAPCCs: Framework for the implementation of SAPCCs at state level: Investments for the implementation of RE and EE projects that need to be addressed and considered in the development and implementation of the project, (b) through local level consultations and detailed data analysis, state level GHG abatement cost curves were developed for the two states, (c) discussions with the stakeholders and project partners also resulted in getting commitments for the co-financing of the baseline activities that were subsumed into the project; as well as in the agreed project coordination mechanisms and the project implementation arrangements, (d) successful design and drafting of the final versions of UNDP project document, GEF CEO Endorsement Request document, and the CCM tracking tool. During this process, the project implementing partner i.e. MoEFCC had taken the ownership of local stakeholder consultation workshops.

PPG consultants have revalidated the logical framework analysis together with the stakeholders. This activity has enabled the confirmation of previously defined project goal and objective, and expected outcomes. Overall, the PPG Exercise has achieved its objective.

PPG Grant Approved at PIF: US\$ 150,000					
	GEF/LDCF/SCCF/NPIF Amount (\$)				
<b>Project Preparation Activities Implemented</b>	Budgeted	Amount Spent To	Amount		
	Amount	date	Committed		
1. Revalidate Barriers and Baseline	50,000	41,063	8,937		
Projects/Activities					
2. Identification, evaluation and selection of	50,000	43,563	6,437		
demonstrations					
3. Conduct of Logical Framework Analysis	20,000	20,000	0		
(LFA) with the project stakeholders					
4. Detailed Design of Project Components &	20,000	15,000	5,000		
Activities					

<sup>&</sup>lt;sup>8</sup> If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.

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5. Establishment of institutional framework for	10,000	10,000	0
project partners/co-financiers in the project			
implementation and to ensure close			
coordination with co-financed baseline			
activities			
Total	150,000	129,626	20,374

#### ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/NPIF Trust Fund or to your Agency (and/or revolving fund that will be set up)

N/A