Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans

TERMINAL EVALUATION REPORT

Prepared by

Dalibor Kysela
International Consultant

Ameya Subodh Udgaonkar
National Consultant

May 2021

Table of Contents

Acronyms and Abbreviations

APR	Annual Project Review
AWP	Annual Work Plan
BEE	Bureau of Energy Efficiency
CCM	Climate Change Mitigation
CEO	Chief Executive Officer
CO	Country Office
CO2e	Carbon dioxide Equivalent
CP	Country Programme
CPAP	Country Programme Action Plan
DRP	Detailed Project Report
EOP	End of Project
ESCO	Energy Service Company
GEF	Global Environment Facility
GHG	Green House Gas
GoI	Government of India
GSDP	Gross State Domestic Product
IREDA	Indian Renewable Energy Development Agency
JERC	Jharkhand Electricity Regulatory Commission
JREDA	Jharkhand Renewable Energy Development Agency
LPAC	Local Project Advisory Committee
MACC	Marginal Abatement Cost Curve
MEPS	Minimum Energy Performance Standard
MOA	Ministry of Agriculture
MOP	Ministry of Power
M&E	Monitoring and Evaluation
MNRE	Ministry of New & Renewable Energy
MoEFCC	Ministry of Environment, Forests and Climate Change
MOP	Ministry of Power
MANIREDA	Manipur Renewable Energy Development Agency
Mt	Million Tonnes
MRV	Monitoring, Reporting, Verification
MSDA	Manipur State Development Agency
MT Project	Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans
MTEE	Market Transformation for Energy Efficiency
Mtoe	Million ton of oil equivalent
MW	Megawatt
NAPCC	National Action Plan on Climate Change
NEP	National Environment Policy
NGO	Non-governmental Organization
NMEEE	National Mission on Enhanced Energy Efficiency

NISE	National Institute of Solar Energy
NPC	National Project Coordinator
NPD	National Project Director
NSC	National Steering Committee
NSM	National Solar Mission
PIR	Project Implementation Report
PMU	Project Management Unit
PPP	Public Private Partnership
PPR	Project Progress Reports
PRGF	Partial Risk Guarantee Fund
PSC	Project Steering Committee
PV	Photovoltaic
RE	Renewable Energy
RESCO	Renewable Energy Service Company
RTA	Regional Technical Advisor (UNDP)
SAPCC	State Action Plan on Climate Change
SNA	State Nodal Agency
tCO2	Ton of carbon dioxide
UNDAF	United Nations Development Action Framework
UNDP	United Nations Development Programme
UNFCCC	UN Framework Convention on Climate Change

Glossary of Evaluation-related Terms

Term	Definition
Baseline data	Data that describe the situation to be addressed by an intervention and serve as the starting point for measuring the performance of the intervention
Beneficiaries	The specific individuals or organizations for whose benefit an intervention is undertaken
Capacity development	The process by which individuals, organizations, institutions and societies develop their abilities individually and collectively to perform functions, solve problems and set and achieve objectives
Conclusion	A reasoned judgement based on a synthesis of empirical findings or factual statements corresponding to a specific circumstance
Effect	Intended or unintended change due directly or indirectly to an intervention
Effectiveness	The extent to which the development intervention's objectives were achieved, or are expected to be achieved
Efficiency	A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results
Finding	A factual statement about the programme or project based on empirical evidence gathered through monitoring and evaluation activities
Impact	Positive and negative, intended and non-intended, directly and indirectly, long term effects produced by a development intervention
Indicator	Quantitative or qualitative factors that provide a means to measure the changes caused by an intervention
Lessons learned	Generalizations based on evaluation experiences that abstract from the specific circumstances to broader situations
Logframe (logical framework approach)	Management tool used to facilitate the planning, implementation and evaluation of an intervention. It involves identifying strategic elements (activities, outputs, outcome, impact) and their causal relationships, indicators, and assumptions that may affect success or failure. Based on RBM (results-based management) principles
Outcome	The likely or achieved (short-term and/or medium-term) effects of an intervention's outputs
Output	The product, capital goods and/or service which results from an intervention; may also include a change resulting from the intervention which is relevant to the achievement of an outcome
Rating	An instrument for forming and validating a judgement on the relevance, performance and success of a programme or project through the use of a scale with numeric, alphabetic and/or descriptive codes
Recommendation	A proposal for action to be taken in a specific circumstance, including the parties responsible for that action
Relevance	The extent to which the objectives of an intervention are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donor's policies
Risk	Factor, normally outside the scope of an intervention, which may affect the achievement of an intervention's objectives
Sustainability	The continuation of benefits from an intervention, after the development assistance has been completed
Stakeholders	The specific individuals or organizations that have a role and interest in the objectives and implementation of a programme or project

Theory of Change	A set of assumptions, risks and external factors that describes how and why an intervention is intended to work.

Acknowledgement

The authors of the Terminal Evaluation report wish to express their appreciation to all project stakeholders, at the national level as well as in the two states, whom they have interviewed during the data collection phase, for their open views on implementation of the project and candid opinions on the achieved results.

Special thanks are extended to the staff of the UNDP Country Office in New Delhi for timely supply of all requested information, assistance with organization of virtual meetings with the project stakeholders and overall contribution to successful completion of the Terminal Evaluation.

EXECUTIVE SUMMARY

Project Information Table

Project Title	Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans,		
ATLAS Business Unit, Award # Proj. ID:		**Project Document (ProDoc) Signature Date (date project began):**	20 January 2016
Country(ies):	India	**Date project manager hired:**	01 June 2016
Region:	Asia	**Inception Workshop date:**	16 March 2017
Focal Area:	GEF-5 Climate Change	**Midterm Review completion date:**	March/April 2019
GEF Focal Area Strategic Objective:		**Planned closing date:**	31 December 2019
Trust Fund [indicate GEF TF, LDCF, SCCF, NPIF]:	GEF TF	**If revised, proposed op. closing date:**	31 December 2020
Executing Agency/Implementing Partner:	Ministry of Environment, Forests and Climate Change (MoEFCC)		
Other execution partners:	N.A.		
Project Financing	***at CEO endorsement (US$)***	***At Terminal Evaluation (US$)***	
GEF financing:	3,744,500	3,526,178	
IA/EA own:	500,000	800,000	
Government	24,500,000	30,400,000	
Other partners (private sector)	-	9,010,000	
Total co-financing	25,000,000	31,200,000	
PROJECT TOTAL COSTS	**28,744,500**	**43,736,178**	

Project Description

The Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans (MT) project has as its overall goal the reduction of GHG emissions in the Indian states of Jharkhand and Manipur through transforming the market and removing barriers to implementation of GHG reduction measures.

The aim of the MT project is to promote energy efficiency- and renewable energy - based climate-change mitigation actions identified in the State Action Plan on Climate Change SAPCCs in the two states of Jharkhand and Manipur. The development objective of the project is to stimulate implementation of climate change mitigation actions, maximize the benefits through exploring inter-state cooperation, showcase the actual implementation of the SAPCCs, demonstrate institutional mechanisms for inter-state networking and cross-learning, including information sharing and technology dissemination, as well as develop and implement a common monitoring system to assess progress on the SAPCCs in the two states.

The project was approved for implementation by GEF CEO on 17 September 2015. The signature of the Project Document by the GoI on 20 January 2016 has officially marked the start of the project implementation.

The GEF project grant approved for the project amounts to 3,744,500 US$ complemented with 25,000,000 US$ expected parallel financing. The total resources committed to the project at inception was thus 28,744,500 US$.

The MT project was implemented under the National Implementation Modality (NIM), agreed by the UNDP and the Government of India. The Ministry of Environment, Forests and Climate Change (MoEFCC) is the Implementing Partner to UNDP, responsible for the overall implementation of the project at national and state levels.

Summary of project results

Jharkhand:

Following initial assessment of 180 institutions, total 1.14 MW of new rooftop solar (RTS) installations was commissioned in about 30 private institutions through the project intervention in combination with subsidies from Jharkhand Renewable Energy Development Agency (JREDA). Further 0.326 MW were installed through replication using the Renewable Energy Service Company (RESCO) modality.

The project financed total 60 kW new RTS installations in 9 healthcare facilities (HCF). The demonstration installations were replicated in further 148 HCFs through funding provided by JREDA and added 1.491 MW capacity.

The project supported preparation of Detailed Project Reports (DPRs) in 11 cold storage units. Implementation of energy conservation measures in two units was facilitated through financial assistance from BEE while energy conservation measures in the remaining units were financed by own resources of the industrial facilities. Furthermore, the project piloted installation of a 4

kW solar micro cold storage unit that was further upscaled to total 94 kW of solar PV capacity through funding provided by JREDA.

In the industrial sector, the project catalysed installation of 240 kW of new RTS capacities in 9 industries (mostly ceramic and tiles manufacturing). This intervention was further expanded to almost 4,700 kW through application of RE/EE measures in two groups of MSMEs. In the public building sector, the project catalysed investments for total 15,45 MW of newly installed RTS capacities in four phases.

The project supported installation of a pilot solar mini-grid at Garo Village for provision of energy for lighting as well as demonstration of two solar water pumps with IOT application at cumulative 5kW capacity that was further was replicated by about 6,000 solar water pumps through community sensitisation and engagement with farmers under MNRE and JREDA under the PM-KUSUM[1] scheme with total capacity more than 15 MW.

The project supported establishment of six micro enterprise facilities operated by solar PV that has provisioned for localised employment opportunity of women in the village.

Support has been extended to MSME units in adoption of Energy Efficiency and Technology Upgradation measures including Energy Audit, Sensitisation and Capacity building of MSME units, Supply Chain Strengthening and Financial syndication resulting in annualised energy saving of around 23,300 MWh.

Energy audits supported by the project served as basis for implementation of energy conservation measures across public and private building sector and municipal drinking water pumping segment. Mobilisation of public and private sector funding for the interventions resulted in annual energy savings of around 17,900 MWh.

Manipur:

The project supported total 0.83 MW of new RTS installations. This included 725 kW of newly installed RTS capacity across 55 community centres and 31 private educational institutes in Manipur that resulted in substantial cost saving for these educational institutes. State-wide replications through Manipur Renewable Energy Development Agency (MANIREDA) added further 6.91 MW of installed capacity, including 1,725 MW of the street lighting project.

Following initial market assessment, e-vehicle scheme was promoted for public transportation. and 65 e-vehicles were disseminated through convergence of the project and private sector financing.

Energy audits supported by the project served as basis for implementation of energy conservation measures across public and private building sector and municipal drinking water pumping segment. Mobilisation of public and private sector funding resulted in annual energy saving estimated at 2,311 MWh.

[1] Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (KUSUM) Yojana was launched by the Government of India to increase the income of farmers and provide sources for irrigation and de-dieselising the agricultural sector.

For enhanced local knowledge and awareness creation, the project provided technical assistance to the Government of Manipur for setting up a Renewable Energy Knowledge Park in Imphal in order to showcase various RE technologies as well as their uses.

The project supported numerous capacity development events for a variety of stakeholders in the two recipient states, including the state Governments, health care facilities, private educational institutions, MSMEs and local communities.

The project was instrumental in removing the barriers to effective implementation of the State-Level Climate Change Action Plans in Jharkhand and Manipur. Through demonstrations of RE and EE solutions in a variety of demand sectors, the project highlighted importance of relatively small RE/EE interventions and made the two state Governments aware of such options apart from large scale RE projects. It also helped to focus attention on energy efficiency interventions not only for GHG emission reductions but also for reducing energy demand.

At the level of the Project Objective, the project exceeded the EOP target in total installed RE capacity by 66% (46.6MW instead of the planned 28 MW of newly installed RE capacity). The total achieved GHG emission reductions exceeded the EOP target by 12.5 %.

Due to lack of required clearances from the Government, the project experienced long delays in implementation, particularly for the Manipur component. A majority of planned results was achieved due to concerted efforts of the central and state level PMUs and effective cooperation with Department of Forest, Environment and Climate Change, Jharkhand, the Directorate of Environment, Manipur and the two state nodal agencies, JREDA and MANIREDA.

Sustainability and progress to impact

The institutional sustainability of the project is embedded in the involvement of the two nodal agencies, JREDA and MANIREDA, and their affiliation with the two state governments (e.g. the Department of Energy in Jharkhand, and the Department of Power in Manipur). The political leadership coupled with a requisite alignment of national and local policies enables the two agencies to serve as the state-level hubs for promotion and deployment of RE and EE measures.

Although the project supported identification and evaluation of several available financing options for implementation of RE and EE measures in various demand sectors, very few non-grant financing instruments have been put into operation for increased access to low-cost financing of RE/EE investments. Limited amount of debt-financing for RTS and EE investment projects thus continues to be a barrier due to several factors, in particular limited knowledge, understanding and awareness of the opportunities and risks for lending, particularly in the RE market segment.

There was a high acceptance of the RE and EE interventions proven through deployment of RTS across over 60 private educational institutions in both states, creation of smart livelihood

centres in Jharkhand and solarisation of more than 50 community centres in Manipur, as well as successful launch of the e-mobility scheme in Manipur. Sustainability is ensured through linking the RE solutions with income generating activities and through partnering with self-help groups, such as farmers, crop processors, and community cooperatives, ensuring equitable and inclusive distribution of the benefits offered by the RE solutions in the target communities.

Summary of evaluation ratings

Evaluation Criteria	Evaluators' Rating
Monitoring and evaluation: design at entry	Satisfactory (S)
Monitoring and evaluation: implementation	Moderately Satisfactory (MS)
Overall quality of monitoring and evaluation	**Moderately Satisfactory (MS)**
Quality of UNDP Implementation	Moderately Satisfactory (MS)
Quality of Execution - Executing Agency	Moderately Satisfactory (MS)
Overall quality implementation / execution	**Moderately Satisfactory (MS)**
Relevance	**Relevant**
Effectiveness	
Outcome 1	Satisfactory (S)
Outcome 2	Satisfactory (S)
Outcome 3	Satisfactory (S)
Efficiency	**Moderately Satisfactory (MS)**
Overall Project Objective rating	**Satisfactory (S)**
Overall likelihood of sustainability	**Moderately Likely (L)**
Institutional framework and governance	Likely (L)
Financial	Likely (L)
Socio-political	Likely (L)
Environmental	Likely (L)

Summary of recommendations

No.	Recommendation
Recommendations for the design, implementation, monitoring and evaluation of the project	
1	For preparation of future projects with implementation focus at the state level, UNDP CO should ensure that all mandatory procedures for project approval and clearance are identified and thoroughly discussed with relevant entities of the national Government.
2	UNDP CO in cooperation with the Government of India should consider streamlining of the approval process for the UNDP-implemented GEF-funded projects. In particular, the LPAC for approval of the projects should be organized within 3 months after approval of the projects for implementation by the GEF CEO.
3	For implementation of GEF-funded projects, UNDP CO in cooperation with MoEFCC should strictly adhere to the management arrangements outlined in the Project Document, including organization of the Inception Workshop within 3 months of the ProDoc signature and regular meetings of the PSC
4	UNDP CO should ensure that projects on transformation to market-based solutions contain sizeable component for capacity building of financial institutions.
Actions to follow up or reinforce initial benefits from the project	
5	MoEFCC in cooperation with the state nodal agencies JREDA and MANIREDA should intensify engagement with the national and state-level financial institutions in order to lower their risk perception for financing RE and EE projects and leverage additional private sector and commercial bank funds for replication and upscaling of the RE and EE solutions developed by the MT project.
6	MoEFCC, MNRE and the two project nodal agencies should consider establishment of a comprehensive web information portal on RE/EE with all relevant information like case studies and reports, vendor information, subsidy information, initiatives by different IDA's, initiatives in the two states including success stories as well as shortcomings.
Proposals for future directions underlining main objectives	
7	The national and state governments should consider options for implementation of the demonstrated investment projects through private intermediaries.
8	The national Government should encourage national institutions, in particular MNRE and BEE, to assume active role in replication of the MT project results to other states.

1. INTRODUCTION

In line with the GEF Evaluation Policy, a Terminal Evaluation (TE) is undertaken at completion of the GEF-funded projects to assess their performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. It is conducted to provide a comprehensive and systematic account of the performance of a completed project by assessing its design, implementation, and achievement of objectives. TE is also expected to promote accountability and transparency, facilitate synthesis of lessons learned, and provide feedback to allow the GEF to identify issues that are recurrent across the GEF portfolio.

This document presents results of the Terminal Evaluation of the UNDP/GEF project "Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans" (further referred to as 'the MT project'). As a standard requirement for all projects financed by GEF, this terminal evaluation has been initiated by the Lead GEF Project Agency, in this case UNDP Country Office (CO) in India. The evaluation was conducted in accordance with the GEF Monitoring and Evaluation Policy[2], the Guidelines for GEF Agencies in Conducting Terminal Evaluations[3], and the UNDP Evaluation Guidelines[4].

1.1. Objective of the evaluation

The objective of the evaluation is to provide the project partners i.e. GEF, UNDP and the Government of India (GoI) with an independent assessment and comparison of planned *vis-à-vis* actually achieved outputs and outcomes, identify the causes and issues which contributed to the degree of achievement of the project targets, and draw lessons that can improve the sustainability of benefits from the project, as well as contribute to overall enhancement of UNDP programming.

The Terms of Reference for the Terminal Evaluation is provided as Annex 1 to this report.

1.2. Scope and methodology

The evaluation covers all activities undertaken in the framework of the project. The time scope of the evaluation is the implementation period of the project, namely from January 2016 to March 2021. The geographic scope of the evaluation is on two states of India, namely Jharkhand and Manipur.

The Evaluation used a combination of approaches to assess the achievements of the project from several perspectives and a mix of quantitative and qualitative methods of data collection

[2] The GEF Monitoring and Evaluation Policy, Global Environmental Facility, November 2010

[3] Guidelines for GEF Agencies in Conducting Terminal Evaluation for Full-sized Projects, Global Environmental Facility, April 2017

[4] Evaluation Guidelines, UNDP, January 2019

and analysis. Desk reviews, virtual meetings, and follow up with key stakeholders were applied as necessary. The evaluation was conducted in three phases as follows:

Preparatory phase: The first step in the evaluation was a desk review of the most important documents covering project design and implementation progress that provided the basic information regarding the activities carried out to attain the desired outcomes and outputs and the actual achievements. The review was followed by preparation of questions and discussion points aiming at gathering information from chosen respondents about attitudes, preferences and factual information linked to the performance indicators in the evaluation matrix.

Evaluation Matrix: An evaluation matrix was constructed based on the evaluation scope presented in the TOR. The matrix is structured along the five GEF evaluation criteria for TEs and included principal evaluation questions. The matrix provided overall direction for the evaluation and was used as a basis for interviewing stakeholders and further review of the project implementation reports.

Apart from the evaluation questions on the relevance, efficiency, effectiveness, sustainability and progress to impacts, the evaluation matrix also included evaluation questions on cross-cutting issues relating to the promotion of values from a human development perspective, namely questions on gender equality and on social inclusion. The Evaluation Matrix is provided as Annex 2 to this report.

The itinerary of the interviews and list of people interviewed are provided as respective Annexes 3 and 4 to this report.

Data collection: The main parts of the data collection phase were interviews with the Project Team, representatives of the UNDP CO and with a representative sample of other project core stakeholders, participants and beneficiaries in the two target states.

The main purpose of the interviews was to validate the information and data already collected and fill the information gaps identified in the previous phase. In order to follow a collaborative and participatory approach, the interviews were conducted to solicit responses to predetermined questions aiming to obtain in-depth information about the key informants' experiences from the project implementation and their opinions about achievement of the planned results. They were based on a semi-structured format in order to allow the respondents to express their perception and elaborate on main issues related to the project implementation.

Based on the guidelines introduced by the UNDP Independent Evaluation Office (IEO) on implementation of evaluations during COVID-19[5], the stakeholder interviews were carried out remotely as virtual meetings with the support of a national consultant.

The evaluation criteria and the related questions were used to raise eventual additional and/or more specific questions on the issues mentioned in the interviews. Triangulation of results, i.e. comparing information from different sources, such as documentation and interviews, or

[5] Evaluations during COVID-19: Data collection, remote interviews and use of national consultants, UNDP IEO, June 2020

interviews on the same subject with different stakeholders, were used to corroborate reliability of the collected evidence. This approach ensured verification of the information obtained in the document review phase, addressing the information gaps and correct interpretation of information and opinions of the project stakeholders, participants and beneficiaries. The interviews also served for collecting additional documents to support the evidence base of the evaluation.

Assessment of Evidence: After the data collection phase, data analysis was conducted as the third and final phase of the evaluation through review of documents that were made available to the Evaluation Team by the project team as well as of other documents that the evaluators obtained through web searches and contacts with relevant projects stakeholders and beneficiaries. This process involved organizing and classifying the information collected, tabulation, summarization and comparison of the results with other appropriate information to extract useful information that relates to the evaluation questions and fulfils the purposes of the evaluation. This analysis included assessing the level of contribution of the MT project to the progress towards the wider objectives of the donor and implementing agencies. Contextual information was also gathered to assess the significance and relevance of the recorded performance and results.

The list of documents reviewed is provided as Annex 5 to this report.

1.3. Structure of the evaluation report

The structure of the TE report follows the "Evaluation Report Outline" presented in Annex F of the ToR of the assignment (contained in Annex 1 to this report).

The 'Executive Summary' of the report is provided in the beginning of the report. The body of the report starts with introduction and development context of the project and continues with a short project description. This is followed by the chapter that sets out the evaluation findings presented as factual statements based on analysis of the collected data. The findings are structured around the five essential evaluation criteria and include assessment of the project performance against the performance indicators and their target values set out in the project results framework (as provided in the Project Document). This part further includes assessment of the project management arrangements, financing and co-financing inputs, partnership strategies and the project monitoring and evaluation systems.

The final part of the report contains conclusions and recommendations substantiated by the collected evidence and linked to the evaluation findings. While the conclusions provide insights into identification of solutions to important issues pertinent to the project beneficiaries, UNDP and GEF, the recommendations are directed to the intended users in terms of actions to be taken and/or decisions to be made. This part of the report concludes with lessons that can be taken from the evaluation, including best (and worst) practices that can provide knowledge gained from the particular project circumstances (such as programmatic methods used, partnerships, financial leveraging, etc.) that are applicable to similar UNDP interventions.

1.4. Limitations of the evaluation

The main limitation of the evaluation was the inability of the Evaluation Team to conduct face-to-face meetings with the project stakeholders. The interviews were conducted remotely through available digital platforms and limit the ability of the evaluators to use direct observation on the stakeholder and beneficiary institutions and the project sites for gathering additional information, triangulating previously obtained information, validating available statistics and theoretical data as well as getting a broader picture of the project under evaluation.

Due to the difficulties to arrange virtual meetings and limited time available for the data collection, it was not possible to interview peripheral stakeholders such as industry and consumer associations to obtain their assessment of the project achievements.

2. PROJECT DESCRIPTION AND DEVELOPMENT CONTEXT

2.1. Project Context

India as the second most populous country in the world and fourth largest energy consumer is extremely vulnerable to the impacts of climate change. India's emissions increased from 1,332 million tonnes (Mt) of the carbon dioxide equivalent (CO_2e) in 2007 to almost 1.8 Mt in 2015. India contributed 6.3 % of all global CO_2 emissions, with emissions increasing 5.2 per cent, in 2015 Among the various economic sectors of the country, the energy sector accounted for 73.2 % of the total greenhouse gas emissions (2014). In the same year,

With a billion plus population and large majority of it dependent on climate sensitive sectors for livelihoods, India is extremely vulnerable to the impacts of climate change on the country's water resources, agriculture, forests, coastal regions, human health etc. Therefore, India faces a formidable challenge of meeting its energy needs while combating climate change. The country needs to follow a multi-pronged strategy to prepare for and respond to various dimensions of energy security problem, energy efficiency (EE) and mainstreaming of renewable energy (RE) sources into country's energy mix, for combating climate change.

On 22 April 2016, India signed the historic Paris Climate Agreement (PCA) along with 170 other nations. It agreed to cut its greenhouse gas emissions, and to contribute thus to limit global average temperature rise to 1.5 degrees Celsius by 2030. and the Intended Nationally Determined Contribution (INDC) to the PCA in 2015 to simultaneously expand energy access and limit GHG emissions.

In 2008, the Government of India (GoI) launched the National Action Plan for Climate Change (NAPCC), which represents a multi-pronged, long-term and integrated strategy for achieving key climate change goals: namely, achieving national growth objectives through a qualitative change in direction that enhances ecological sustainability, leading to further mitigation of greenhouse gas emissions, and devising efficient and cost-effective strategies for end-use demand-side management. Energy efficiency in households, buildings, industry and transport plays an important role. At the same time low carbon supply technologies, such as solar and wind in the power sector and greater use of public transport and non-motorized transport are critical.

The NAPCC encourages planning and coordination at different levels, especially state (sub-national) level. This has assumed the shape of formulation of State Action Plans on Climate Change (SAPCC) as a method to decentralize the NAPCC approach to achieve low carbon pathway. Each State has come up with its own list of activities to address these issues in specific sectors important for each state that are in line with the national climate priorities. The Government of India has provided some financial support to state governments for the implementation of their SAPCCs.

UNDP was an active partner in the development of the SAPCCs in nine states of India with the highest proportion of people living in poverty. Among these, the states of Jharkhand and Manipur are the targeted states in this project.

2.2. Brief Description of the Project

The MT project has as its overall goal the reduction of GHG emissions in the Indian states of Jharkhand and Manipur through transforming the market and remove barriers to implementation of GHG reduction measures.

The aim of the MT project is to promote energy efficiency- and renewable energy - based climate-change mitigation actions identified in the SAPCCs in the two states of Jharkhand and Manipur. The development objective of the project is to stimulate implementation of climate change mitigation actions, maximize the benefits through exploring inter-state cooperation, showcase the actual implementation of the SAPCCs, demonstrate institutional mechanisms for inter-state networking and cross-learning, including information sharing and technology dissemination, as well as develop and implement a common monitoring system to assess progress on the SAPCCs in the two states.

The project was approved for implementation by GEF CEO on 17 September 2015. The signature of the Project Document by the GoI on 20 January 2016 has officially marked the start of the project implementation.

The GEF project grant approved for the project amounts to 3,744,500 US$ complemented with 24,500,000 US$ expected parallel financing by the GoI and 500,000 US$ by UNDP. The total resources committed to the project at inception was thus 28,744,500 US$.

The MT project is implemented under the National Implementation Modality (NIM), agreed by the UNDP and the Government of India. The Ministry of Environment, Forests and Climate Change (MoEFCC), Government of India is the Implementing Partner to UNDP, responsible for the overall implementation of the project at national and state levels. In partnership with the state governments of Manipur and Jharkhand states, MoEFCC assumes full responsibility and accountability for the effective use of UNDP and other resources and the achievement of the project outcomes and outputs at all levels as set forth in the Project Document.

2.3. Project Baseline Data

The MT project was designed to address major barriers to the implementation of SAPCCs for the States of Jharkhand and Manipur.

Awareness Barrier: Limited awareness of capacity of state-level institutions and stakeholders on issues related to climate change mitigation. The limited know-how and shortage of relevant experts and manpower was one of the major hindrances to the implementation of the SAPCCs. The role of stakeholders in the implementation of SAPCC was not clearly defined and there was limited awareness of climate change mitigation technologies (both RE and EE) including the associated cost-benefits.

Framework Barrier: There was no appropriate institutional and incentive policy framework for adoption of climate change mitigation technologies and strategies. This was further exacerbated by conflicting state priorities, weak cohesion between institutional and inceptive structures for adoption of climate change mitigation strategies, and no cross-learning between the central and state governments for cross-sectoral collaboration and coordination.

Funding Barrier: There was limited participation and investment of the private sector due to the risks associated with lack of information exchange regarding RE and EE interventions. Existing Energy Service Companies (ESCO) were trying different models of implementation of EE, but business operations were not sustainable without external funding support.

Research Barrier: A lack of data and research on GHG abatement cost curves means that full implementation of the SAPCC is impossible without proper research. This process was not even foreseen for the near future, and without this analysis, cost-effective interventions in EE and RE cannot be selected and prioritized by the states and project developers.

Technology Barrier: A lack of EE and RE technology suppliers and equipment manufacturers in the states prevents reaching the full goals of the SAPCC. This is further aggravated by the lack of any implementation framework.

Institutional Barrier: Limited capacity of state-level institutions to integrate and link climate change considerations within their programmes and state budgets (such as creating slate clean energy funds for deployment of low-carbon technologies, soft loans routed through public banks, etc.) prevented economic planning and programmes and the sub-national level. Financial institutions, especially at the sub-national level, had limited knowledge of proven climate change mitigation technologies and strategies.

Private-Sector Barriers: Due to high interest loan rates, private sector was quite limited in the design, implementation, monitoring, evaluation and review of interventions. Private investors were not confident about performance-based payments (preferential tariffs, for example) for EE projects.

Regulatory Barriers: Inadequate regulatory incentives to encourage private investment through suitable and affordable financing prompted the GoI to subsidize fossil-fuels. The subsidies have proven a huge burden as they encourage wasteful energy consumption, deter investments in energy efficiency and infrastructure, and reduce incentives for renewable energy technologies.

2.4. Project theory of change

A project's theory of change provides a basis for evaluation of the project resources, activities and results. The terminal evaluation has assessed the description of the project's theory of change including description of the project's outputs, outcomes, intended long-term environmental impacts of the project, causal pathways for the long-term impacts as well as implicit and explicit assumptions.

The overall strategy for the project is to create an enabling environment for effective implementation of state action plan on climate change. The project design is based on the premise that existence of several technical, financial, policy, institutional and awareness and capacity building barriers have constrained the large scale implementation of RE and EE projects in the two states. While project benefits are likely to be in the tangible form of reduction in GHG emissions and total energy saved from EE measures, more significant albeit gradual and less tangible co-benefits will flow in terms of improved state capacities in implementing RE and EE measures and incorporation of climate change mitigation actions in state development plans and schemes.

The project seeks to contribute to:

a) Implementation of priority CCM actions on energy generation and application of EE & RE technologies in the major energy end-use sectors
b) Enhancing states capacity for identification, design, planning, and implementing selected RE and EE mitigation actions from their SAPCCs including identification of financing
c) Integration of climate change concerns within the state sectoral development plans and budgets

2.5. Project components

The project results framework in the approved Project Document consists of 3 substantive Components/Outcomes and total of 14 substantive Outputs. The complete project results framework is provided as Annex 3.

Outcome 1 addresses the need to identify and prioritise climate change mitigation (CCM) options for implementation to meet the targets of SAPCC by overcoming the market barriers in implementation of these options. The priority CCM options were identified by the states based on current gaps in the mitigation actions in the states, availability of financing, need to showcase technologies, which otherwise may not be implemented in a business-as-usual scenario. This further identifies the GHG abatement potential and those RE and EE actions that can be implemented during the 4-year project duration.

Specific Outputs under Outcome 1 include:

- Regularly updated GHG abatement cost curves at state level
- Selected prioritized RE and EE actions listed in Manipur and Jharkhand Action Plan on Climate Change for implementation
- 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

The purpose of Outcome 2 is to make the two states by the end of the project self-sufficient in terms of capacity and capability in designing, planning, financing, implementing, monitoring RE and EE mitigation actions of the SAPCCs. By the end of the project, each state should have

a well-defined state machinery (including new regulatory mechanisms or financial instruments) which is interlinked with the state's current policies, mechanisms and development plans for the implementation of RE and EE mitigation actions.

Specific Outputs under Outcome 2 include:

- Completed evaluation of existing available loan mechanisms for projects developed as part of SAPCC targets
- Implemented non-grant financing instruments such as flexible debt finance (including long tenure low-interest loans)
- Mobilized public and private sector funding
- Established public private partnerships (PPP) for implementation and scaling up of selected RE and EE mitigation actions in Manipur and Jharkhand
- Implemented nine RE and EE investment projects in Manipur and Jharkhand
- Completed implementation manual and workshops for supporting the implementation of selected public private partnership models for RE and EE actions

Outcome 3 focuses on RE and EE CCM actions in order to overcome the existing barriers to implementation of these actions as specified in the SAPCCs. The investment projects referred to under Outcome 2 indicate interventions with a strong potential for addressing the energy deficit, control of emissions control and energy savings in the two states. While the investment projects may provide leads on the existing policy barriers / incentives for larger scale adoption of these actions, the state agencies need to explicitly recognize the potential of these interventions. This component thus facilitates inclusion of these actions in appropriate policy statements / documents of the state development plans and budgets as well as building the capacity of state governments in integrating these actions in the state functioning and also enabling effective monitoring, reporting and verification.

Specific Outputs under Outcome 3 include:

- Aligned state sectoral budgets for development plans to include climate change mitigation actions related expenses
- Completed training and capacity building programs on the developed MRV systems for the State officials
- Established institutional mechanism for inter-state exchange of information and technology dissemination for Manipur and Jharkhand for implementation of SAPCC mitigation actions
- Conducted inter-state study trips and stakeholder interaction workshops
- Established and operational information dissemination system on lessons learnt from investment projects undertaken on priority RE and EE mitigation actions

2.6. Expected results

Table 1 below provides a summary of the project expected results.

Table 1: Expected results of the MT project

Result	Indicators	End-of-project Targets
Project Objective: To support the effective implementation of specific EE and RE climate change mitigation actions identified in the SAPCCs for Manipur and Jharkhand	Cumulative CO2 emission reduced from start of project to End-Of-Project (EOP)	304,250 million tCO_2e
	Total energy savings achieved from implemented RE and EE mitigation actions by EOP	190,452 MWh
	Total installed capacity of RE systems by EOP	28 MW
	Number of people that benefitted directly or indirectly with improved energy access in the two states through the project interventions by the EOP	17.8 million

2.7. Main project stakeholders

Stakeholder engagement is an inclusive and continuous process between a project and those potentially impacted that encompasses a range of activities and approaches. It is arguably one of the most important ingredients for a successful project delivery and therefore an essential element of this project.

.

The strong participation 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.

The Project Document outlines key stakeholders and their specific involvement in terms of roles and responsibilities as partners and beneficiaries of the project. It lists the following key stakeholders:

• Ministries and other public agencies with a mandate to support sub-national development and climate change adaptation. This includes government ministries at the national level and at the state level.

• Financial institutions, which includes public and private sector banks, as well as venture capitalists.

• Private sector enterprises involved in developing and delivering specific RE and EE solutions.

• Civil society organizations (CSOs and NGOs)

• Academic institutions, which operate in a monitoring and reporting capacity as well as act to provide expert opinion for the implementation of RE and EE solutions.

A full list of stakeholders from the Project Document including their expected roles in the project implementation is provided as Annex 5.

3. PROJECT DESIGN/FORMULATION

This section provides a descriptive assessment of the achieved results. In addition, several evaluation criteria are marked in line with the requirements for GEF Terminal Evaluations.

The project theory of change and intervention strategy is explained in Section B of the Project Document that elaborates on the project rationale and design principles. The intervention logic is embedded in the focus on removal of institutional, regulatory, financial and awareness barriers identifies at the project preparatory phase as hindrances to unlimited deployment of RE and EE technology solutions among relevant target demand sectors. Market transformation was identified as the tool leading replicability and scalability in the two target states and beyond.

The project goal is formulated as a high-level statement in terms of reduced GHG emissions achieved through implementation of RE and EE solutions identified in the SAPCCs, i.e. as description of the project impact and its long-term effect. The Project Objective is a lower-level statement that defines strategies and implementation steps for attainment of the identified project goal. In this regard, it is difficult to understand why the total energy savings achieved from implemented RE and EE mitigation actions are presented at the lower level of the Project Objective as the energy savings are directly related to the GHG emission reductions presented at the higher level.

The Project Objective is clearly defined and linked with the project Components/Outcomes as well as the Project Outputs. The long-term project benefits are the tangible and easily quantifiable total energy savings and related reduced GHG emissions to be achieved through less tangible improvements of institutional and human capacities for implementation of RE and EE measures and incorporation of CCM actions in state development plans.

3.1. Analysis of the project results framework

This section makes an assessment of the project results framework in terms of clarity, feasibility and logical sequence of the project outcomes/outputs and their links to the project objective. It also examines the specific indicators and their target values in terms of the SMART[6] criteria.

The project Results Framework (RF) is composed of 3 substantive Components/Outcomes and total of 14 substantive Outputs. Specifically, Component 1 is related to strengthening of the institutional framework for the implementation of climate change mitigation options in the selected states, Component 2 focuses on investments for implementation of selected RE and EE mitigation actions while the purpose of Component 3 is capacity development of state level officials for implementation of SAPCCs.

The Project Document contains a detailed results framework down to the output level with indicators and their end-of-project (EOP) target values as well as critical assumptions related to the planned results. The 3 interrelated Components are well linked to the Project Objective.

[6] SMART stands for Specific, Measurable, Attainable, Relevant, Time-bound.

As a normal practice, UNDP-implemented projects use the words 'Component' and 'Outcome' as synonyms for changes in conditions, behaviour, or attitudes that indicate progress towards the Project Objective. In the MT project RF, 'Component' appears to be used for description of the projects' principal focus areas while 'Outcome' is embedded as part of the project 's results hierarchy.

While there is nothing wrong with the above separation, the above separation appears to have produced several internal inconsistencies in the RF.

According to the title of Component 1, it should be devoted to improving frameworks for implementation of the CCM options in the two states. However, Outcome 1 is defined in terms of successful implementation of priority CCM actions on use of RE/EE technology option. Similarly, Component 2 is about implementation and financing of prioritized RE/EE solutions but Outcome 2 is defined in terms of enhanced states capability and capacity for identifying, designing, planning, financing and implementing selected RE and EE actions from their SAPCC. It appears that Outcomes 1 and 2 were misplaced in the project RF.

The indicator of expected energy savings under the Project Objective is closely related to the indicator of GHG emission reductions. As both energy savings and GHG emission reductions are ultimate effects of the project, both indicators measure progress towards achievement of the Project Goal that is a statement about expected intermediate and long-term effects of the project.

By the same token, the indicator of number of beneficiaries directly and indirectly benefiting from the project is wrongly placed under the Project Objective as it also measuring the impact of the project and therefore should have been placed under the Project Goal. Moreover, it is not measurable through common M&E approaches for GEF-funded projects as its exact measurement requires multi-level statistical data.

For assessment of status of the Outcomes and Outputs, the project RF contains total 27 indicators with defined baselines and EOP targets. Majority of the indicators and targets are in line with the UNDP/GEF SMART[7] criteria, however, few of them are not specific enough or have unattainable targets as it was pointed out in the MTR report[8]. The target values for assessment of status of the indicators are in general realistic with one exception. The EOP target value of 17.8 million project beneficiaries EOP is not attainable through a project of this size.

The inconsistencies in the MT project RF are summarized in Table 4 below.

[7] Specific, Measurable, Attainable, Relevant, and Time-Bound

[8] Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans, MTR Report, p. 36-37.

Table 2: Internal inconsistencies in the MT project results framework

Project result	Indicator	Comments
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	Total energy savings achieved from implemented RE and EE mitigation actions by EOP, MWh	This indicator is better suited to measure progress to the project goal
	Number of people that benefitted directly or indirectly with improved energy access in the two states through the project interventions by the EOP (million). (This includes, improved job opportunity, quality of life and education.)	This indicator by its definition is not SMART
Outcome 1: Successful and sustainable implementation of priority Climate Change and Mitigation (CCM) actions on energy generation and application of Energy Efficiency (EE) & Renewable Energy (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.	This should be Outcome 2 The indicator is the same as the indicator for Outcome 2
Output 1.1: Regularly updated GHG abatement cost curves at state level	Number of abatement cost curves prepared by Year 1	The Outputs are not consistent with the Outcome 1 definition
Output 1. 3: Designed and implemented common monitoring, reporting, and verification (MRV) system for the selected RE and EE actions of the Manipur and Jharkhand SAPCC, in a way to feedback into the SAPCC process	Number of monitoring, reporting, and verification (MRV) systems designed and implemented in the states by Year 3	
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	This should be Outcome 1 The indicator is a repetition of the indicator for Outcome 1 above
Output 2.5: Implemented nine RE and EE investment projects in Manipur and Jharkhand	No. of demonstration investment projects based on innovative financial models developed by Year 1	The Output is incorrectly defined as the target value of the Output Indicator
Output 2.6: Completed implementation manual and workshops for supporting the implementation of selected public private partnership models for RE and EE actions	No. of implementation manuals developed by Year 3 No. of workshops conducted on sensitizing the state agencies on proposed models by Year 4	This Output would better suit with Outcome 3 (Capacity building)
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 SAPCC by Year 2	This indicator is not appropriate for measuring progress of the capacity building Outcome (should be more appropriate for Outcome 2 above)
Output 3.1: Aligned state sectoral budgets for development plans to include climate change mitigation actions related expenses	Allotment of budget for climate change actions in departmental budgets by Year 2	The Output is inconsistent with the definition of Outcome (capacity building) and would better fir under Outcome 2 (catalysing investments)

The above summarized inconsistencies, in particular misplacement of some Outcomes and Outputs in the RF, had a negative impact on reporting as the GEF annual project Implementation Reviews (PIR) require reporting of results only at the Outcome level. Due to the misplacement of Outcomes 1 and 2 the PIRs show replication of the same achievements reported under both Outcomes (e.g. number and nature of the RE/EE pilot projects). It could be concluded that the inconsistencies impeded effective use of the project logframe as a tool for the project monitoring and reporting.

3.2. Risks and assumptions

Identification of risks enables the implementing partners to recognize and address challenges that may limit the ability of the project to achieve the planned performance outcomes.

At the project design phase, a comprehensive risk analysis was conducted and a list of identified risks to achievement of the project's goals is contained in the Project Document, Annexure A. The list includes risk categorization and assessment in terms of probability and impact, as well as corresponding risk mitigation measures.

In line with the standard practice of GEF-funded projects, the risk analysis was conducted through rating of probability and impact on a 5-point rating scale (1 low to 5 high) and overall risk qualitative assessment on a one-dimensional scale (Low-Medium-High). Risks with concurrent higher levels of probability and impact should be rated as criticial.

Fourteen out of the 15 identified risks were classified at the low or medium risk level (seven each) and one at the high-risk level. The evaluators found this classification reasonable for a majority of the identified risks and identified three risks that should have been rated as criticial.

Table 3: Critical risks of the MT project

No.[9]	Risk description	Risk level	Mitigating actions
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.	Probability=1 Impact =5 Overall Risk: Low	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. 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.
12	Lack of financial institutions' sustained commitment for implementation of SAPCC	Probability=3 Impact = 2 Overall Risk: Medium	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.
13	There is a significantly slow start of on-the-ground project activities	Probability=3 Impact = 5 Overall Risk: High	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.

The risk 1 is about inability of national entities to be engaged with the project. However, two of the five listed entities (NSM and NMEEE) are in fact national missions and not agencies.

The risks 1 and 13 are interlinked and both refer to slow start and sluggish implementation of the project activities. Based on the experience from implementation (discussed below in the respective sections 'Management Arrangements' and 'Monitoring & Evaluation'), it can be concluded that particularly the probability of delayed start was underestimated.

Risk No. 12 refers to low commitment and participation of financial institutions for replication and upscaling of CCM measures promoted by the project. The recommendations from the MTR as well as findings and conclusions from this evaluation suggest that the expected impact of

[9] The numbering refers to the original risk analysis in Annexure A of the Project Document (p. 113-11

low participation of the financial entities was underrated. This risk should have been deemed critical already in the project development phase and a better focus on development of capacities for financial entities should have been incorporated in the project design, including a separate output under Component 2.

As a standard practice of UNDP-implemented projects, the risk log based on the initial risk analysis should be regularly updated in UNDP enhanced results-based management platform (ATLAS) and new operational risks (if identified) added to the risk matrix. Risks rated as critical (i.e. when both impact and probability are high) and corresponding mitigation measures should be reported in the annual Project Implementation Reviews (PIRs).

The 2018-2020 PIRs in the section "Critical Risk Management" identified the critical risks summarized in the Table 5 below.

Table 4: Risks reported in the annual PIRs

Year	Risk description	Mitigating action
2018	Late approval for Jharkhand and lack of approval for the Manipur component	Through planning in advance, the project has tried its best to mitigate the risk in Jharkhand. All the activities in Jharkhand are on track and likely to achieve the development goals by the end of the project. Whereas, the project is still at risk in Manipur until the approval is received by the LPAC for implementation. Considering the fact that the project has only one year for implementation in Manipur, early clearance would be required to achieve the implementation objective.
2018	States do have policies in place but lack implementation and monitoring capabilities. Due to vested commercial interest of electricity distribution companies (DISCOMs), they are reluctant towards smooth implementation of net metering policy.	The project has been advocating for building capacity of the DISCOM officials to understand how renewable energy can help them to reduce the overall cost of conventional power. The project was successful in the last reporting year to convince the energy secretary to organize training for the DISCOM officials. Series of capacity building activities have been planned in 2018 for DISCOM officials.
2019	The delay in implementation approval for the Manipur component has cascading effect on the overall project.	The PMU identified the activities, undertaken initial consultation with state departments and sought state's inputs on the Terms of Reference for most of the activities. As soon as the project received approval for Manipur, ToRs were launched and studies/activities have been initiated.
2020	No field level implementation of project activities due to COVID lockdown since March 2020	As a mitigation measure key procurement activities and vendor selection process have been completed. Project will start field level implementation as soon as the lockdown is relaxed, and normal operation is resumed in the selected states.
2020	Government: COVID pandemic and consequent lockdown have caused significant damage to the national economy. As such economic recovery and stabilization have become key priority of both Central and State governments. Under this situation investment in climate change and mitigation (CCM) activities may not be a priority for governments for the coming few years. Banks: Energy efficiency and renewable energy financing is perceived as high risk lending and in the current economic situation EE-RE financing will not be a priority for banks till stabilization of economic situation in the country	Small scale low cost RE – EE activities for which private funding is required will be considered for implementation this will include demand side management in domestic consumer sector and clean energy based productive enterprises.

From the above it can be concluded that while the risk identification at the project preparation stage had some shortcomings while monitoring and management of critical risks during the project implementation was done with good judgement and prudence.

3.3. Lessons from other relevant projects incorporated into project design

The MT project was designed in 2013-2015 for funding under the GEF-5 cycle. At that time, UNDP India implemented several projects on renewable energy and/or energy efficiency under the previous GEF-3 and GEF-4 cycles as shown in Table 5 below:

Table 5: List of RE/EE GEF-3 and GEF-4 projects implemented by UNDP in India

ID	Project Title	Period
1240	Removal of Barriers to EE Improvement in the Steel Rerolling Mill Sector	GEF-3
1599	Development of a Strategic Market Intervention Approach for Grid-Connected Solar Energy Technologies	GEF-3
2500	Energy Conservation in Small Sector Tea Processing Units in South India.	GEF-4
2844	Energy Efficiency Improvements in the Indian Brick Industry	GEF-4
3152	Achieving Reduction in GHG Emissions through Advanced EE Technology in Electric Motors	GEF-4
3554	Improving EE in the Indian Railway System - under the Programmatic Framework for Energy Efficiency	GEF-4
3555	EE Improvements in Commercial Buildings - under the Programmatic Framework for Energy Efficiency	GEF-4

At the time of preparation of the MT project, the GEF-4 projects had not yet been completed hence there were probably only lessons available from the GEF-3 projects. Although all the previously the above listed project must have identified useful experience and lessons for sharing through standard M&E activities, the Project Document does not mention incorporation of any lessons or other experience for the preparation and design of the MT project.

Also, UNDP India had a history of work on preparation of State CCAPs in 9 States in the period since 2006. The ProDoc does not mention any lessons from this work either, although the evaluation of India's National Action Plan on Climate Change is contained in the List of References provided as Section 16 of the ProDoc. It is therefore anticipated that at least

3.4. Planned stakeholder participation

The Project Document called for involvement of a number of Government agencies with respective mandates relevant for development and implementation of RE and EE. In addition, professional associations of architects and engineers, electrical and water utility companies, educational institutions and civic associations were also expected to participate in the project. The entry point for involvement of key project stakeholders were supposed to be meetings of the Project Steering Committee (PSC).

3.5. Gender responsiveness of the project design

The body text of the Project Document does not contain any information about consideration of gender issues during the project development phase. However, the Social and Environmental Screening Report provide as Annex I of the ProDoc claims that since the selected states have large energy deficit and energy access issues, the project will also contribute towards reducing this deficit and increasing energy access through RE and EE interventions and thus indirectly contribute to women empowerment. However, no concrete gender-oriented activities were incorporated in the design of the MT project.

3.6. Replication approach

The replication approach of the project is primarily based on the assumption that the Assigned State Agencies (JREDA and MANIREDA), with the support from the state PMUs, will undertake assessment of the investment projects and their implementation mechanisms for replication and scale up in order to prepare state-level replication and scale up plans for each sector and technology, accompanied by detailed financial analysis to estimate the financing requirements for the state level replication and scale up models.

The second element of the replication approach is development and updating of MACC that contribute to a robust analysis of mitigation strategies for combating climate change at the state level. This element is based on institutionalization of MACC updates within both ASAs to ensure the updates are conducted on a periodic (annual) basis after the project completion.

Extensive training programmes based on developed master training packages for project implementers, reviewers, and state government officials are another element to ensure smooth replication and post-project scale up.

Last but not least, the project organization structure was expected to evolve during the course of implementation of the project into a permanent institutional structure in the two states focussed on taking forward the replication and scale-up of the RE and EE technologies in more locations across the two states.

3.7. UNDP comparative advantage

UNDP is well equipped to assist developing countries in addressing their needs and priorities due to its focus on poverty reduction, pro-poor economic policies and environmental sustainability. With its permanent presence in nearly 170 countries and long-term relationships between UNDP and the vast majority of nations, the Organization serves as a key bridge between the world-wide vision of development as a core UN pillar and its sustainable achievement in individual states and lives – offering the global partnership, support, collaboration, expertise, and often funding, required. Hence, the organization has tools to support countries in pursuing a balanced inclusive and sustainable growth patterns.

The essence of UNDP's comparative advantage for the GEF-funded projects is embedded in its global network of country offices, its experience in integrated policy development, human resources development, institutional strengthening, and non-governmental and community participation. In addition to UNDP proven track record on promoting, designing and implementing activities consistent with the GEF mandate and national sustainable development plans of the developing countries, UNDP also has extensive inter-country programming and implementation experience.

A key part of UNDP's comparative advantage is the role of knowledge management broker, i.e. in accumulation of first-hand experience from implementation of projects in specific technical areas. As one of the GEF implementing agencies, UNDP has a very large portfolio of

GEF-funded projects in all regions of the world. The experience and capacity collected from this portfolio is logically an advantage in developing and implementing such types of projects.

Another strength of UNDP is its broad-based development approach focused on strengthening national capacities for sustainable development through the integration and mainstreaming of its work on RE and EE for achievement of the Sustainable Development Goals (SDGs).

In India, the overall UNDP comparative advantage is embedded in a long-term track record with Indian government agencies and organizations in the public and private sectors, and institutional experience in implementing previous and ongoing projects on CC mitigation as well as adaptation. The recognition of UNDP as a partner of choice by the GoI is based on its timely and significant contributions to the country's development agenda when it comes to delivering development programmes at the sub-national level. The UNDP track record reaches out to sub-national partners that are crucial for ensuring smooth implementation, sustainability and replication of various initiatives. Also, UNDP has a lot of experience at the grassroot and community level from development of local initiatives.

Particularly valuable is the UNDP CO experience with provision of assistance for preparation of state-level action plans on climate change. Under the project 'Capacity Building for Addressing Climate Change' (2010-2012), UNDP directly supported preparation of SAPCCs in nine Indian states (Andaman & Nicobar Islands, Bihar, Chhattisgarh, Chandigarh, Jharkhand, Kerala, Lakshadweep, Madhya Pradesh and Uttarakhand). Under that project financed by the Swiss Agency for Development and Cooperation's (SDC), UNDP supported the GoI in establishing and implementing a Common Framework for Preparation of SAPCCs that aims to ensure a coherent national approach while retaining a level of adaptability to accommodate state-specific circum- stances and priorities. The approach and methodological steps were based on 12 guiding principles on development of SAPCCs based on prioritization of national concerns, organizational arrangements and stakeholder involvement.

Besides the specific technical areas of climate change and energy efficiency, UNDP has a long-standing experience in developing and implementing coherent packages of "hard" and "soft" interventions that make technology transfer successful when complemented by targeted strengthening of relevant human capacities and institutional frameworks.

3.8. Linkages between project and other interventions within the sector

This section is examining the extent of synergies and coordination of the MT project with GEF-funded implemented by UNDP and other GEF agencies.

Apart from the MT project, the GEF-funded projects on RE/EE in India are listed in Table 6 below.

Table 6: List of GEF-funded projects on RE/EE in India implemented since 2016

ID	Title	GEF Agency	Period
4788	Promoting Business Models for Increasing Penetration and Scaling up of Solar Energy	UNIDO	GEF-5
4893	Promoting Market Transformation for Energy Efficiency in MSMEs	UNIDO	GEF-5
4900	Scale Up of Access to Clean Energy for Rural Productive and Domestic Uses	UNDP	GEF-5
4918	Partial Risk Sharing Facility for Energy Efficiency	World Bank	GEF-5
5087	Organic Waste Streams for Industrial Renewable Energy Applications in India	UNDP	GEF-5
5364	Program to Establish Pilots for Access through Renewable Energy	World Bank	GEF-5
9258	Creating and Sustaining Markets for Energy Efficiency	ADB	GEF-6

The projects listed in Table 6 have thematic focus similar to the MT project in terms of objectives and activities but have different geographical focus on different states. Since majority of them are implemented by other GEF agencies, the potential for exchange of experience is limited. The closest to the MT project is another project implemented by UNDP titled "*Scale-up of Access to Clean Energy for Rural Productive and Domestic Use*". The latter project aims at demonstrating and developing the market for RE technology packages for rural livelihoods in three states, namely Assam, Odisha and Madhya Pradesh. As already found by the MTR of this project, the actual coordination and synergies between the two projects is limited.

Since 2017, there is a project implemented by a partnership of the UN Environment and the Asian Development Bank (ADB) titled "*Creating and Sustaining Markets for Energy Efficiency"*. This project is based on composite funding of a GEF grant and co-financing in the form of loans and equity, including a $200 million loan from the ADB. This project created a partnership with the Energy Efficiency Services Limited (EESL), under Ministry of Power, in order to propose Energy Efficiency Revolving Fund (EERF) for sustainable funding mechanism of EE projects in the country. Amongst other states, this project also works in Jharkhand.

Reportedly, the GoI has established an annual review process for all GEF projects in the format of annual meetings convened by the GEF OFP. National Project Managers of all GEF-funded projects make presentation in order to inform about progress in implementation and exchange of experience between individual projects. This mechanism has a wider scope than just the CC as it covers all GEF Focal Areas.

3.9. Management arrangements

GEF Project Agency

The UNDP CO in India acted as the GEF Project Agency for the project. Within this role, the UNDP CO provided project implementation support by managing the project budget and monitoring expenditures, contracting project personnel and executing actions for procurement.

The project was backstopped by the UNDP Regional Technical Advisor based in the Bangkok Regional Hub (BRH). UNDP CO and RTA provided overall oversight and technical guidance

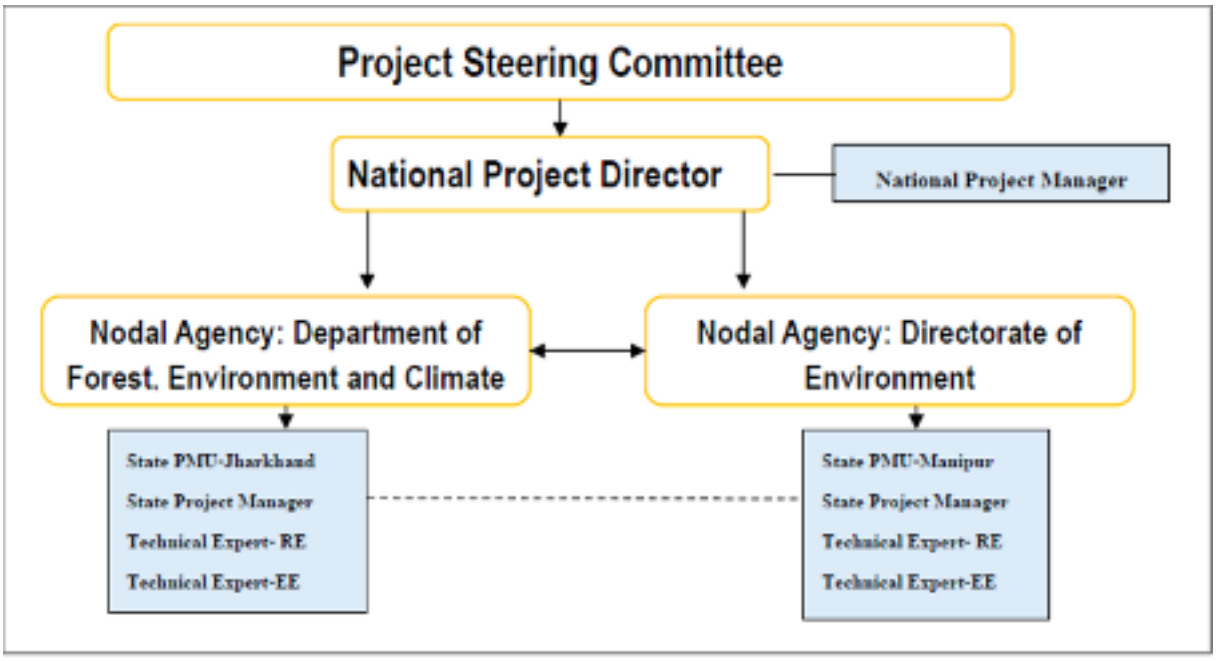
including responsibility for reporting and evaluation of the project as per GEF and UNDP standard requirements.

Executing Agency/Implementing Partners

The Ministry of Environment, Forestry and Climate Change (MoEFCC) as the Implementing Partner responsible for overall implementation of the project at national and state levels. The implementing responsibility is housed in the Climate Change Division of MoEFCC. In partnership with the State Governments of Manipur and Jharkhand, MoEFCC assumed responsibility and accountability for effective use of the project resources and for achievement of the planned project results at all levels as set forth in the Project Document. For effective implementation of the project activities, MoEFCC signed agreement with UNDP for provision of direct project support services in the form of procurement of goods and services.

The project management arrangements outlined in the Project Document were changed due to several implementation issues. However, the actual project management structure was constructed in line with the arrangements outlined in the Project Document and along the standard principles for GEF-funded projects. Relations between the elements of the actual project management arrangement are summarized in Display 1 below.

Display 1: The Project Management Organigram



A central Project Management Unit (PMU), foreseen in the Project Document to be located in the MoEFCC, was not established. Instead, the role of the PMU was assumed by the National Project Manager (NPM), designated by the UNDP CO and located within the UNDP office premises, who coordinated with the state PMUs and looked after administration and financing aspects of the project implementation. The NPM reported to the National Project Director (NPD), a senior government official designated by the MoEFCC, responsible for overall

strategic guidance to the project management and for coordination with various ministries and agencies of the GoI.

The project management structure at the state level was composed of the state nodal agencies, namely the Department of Forest, Environment and Climate Change in Jharkhand and the Directorate of Environment in Manipur, and the state PMUs, headed by the State Project Managers and led by the Assigned State Agencies (ASA) - JREDA and MANIREDA[10], implemented project activities at the state level. The ASAs were responsible for a variety of tasks, including consultations with target groups, identification of end-users, assistance in mobilising of financing, advice in the identification of the most appropriate technology supplier, supervision of the implementation, etc.

Inception Workshop

As a standard practice in GEF-funded projects, a project Inception Workshop (IW) is held within 2-3 months after the official project start date and after establishment of the PMU. Although the central and state PMUs were created in mid-year 2016, the standard practice was not further followed and the National Inception Meeting was organized on 16 March 2017, i.e. 14 months after the official project start date (marked by the signature of the Project Document on 20 January 2016). The meeting was chaired by the Joint Secretary of MoEFCC and included participation from relevant target state (Jharkhand and Manipur) government officials, the NPM and members of the State PMUs, representatives of the two ASAs including technical experts as well as representatives of the UNDP Energy and Environment cluster.

The purpose of the meeting was to bring the relevant stakeholders of the project to a common platform and create a better understanding of the project objective and planned results, focus sectors and key activities. Presentations at the meeting included the project objective and management structure, report on activities undertaken in 2016 and information about the GEF monitoring and reporting frameworks. The participants also discussed strategies for promotion of RE and EE activities for private sector investment in both states and endorsed the annual work plan for 2017.

Project Steering Committee

The IW was also considered the first meeting of the Project Steering Committee (PSC). There is no information about the PSC membership in the National Inception Meeting minutes. The PSC was expected to meet twice per calendar year but there was only one additional meeting of the PSC was mentioned in the project reports, namely on 5 March 2019. According to the minutes of this meeting, the PSC membership comprised the MOEFCC Additional Secretary (PSC Chair), the MOEFCC Joint Secretary and GEF Operational Focal Point (OFP) as well as the Director of the MOEFCC Climate Change Department, Division Directors from the MNRE, BEE and the Department of Economic Affairs (DEA), JREDA and the Directorate of

[10] In Manipur, the PMU was co-located within the Directorate of Environment and Climate Change and MANIREDA with joint responsibility of the two agencies.

Environment from Manipur. UNDP is represented by the Deputy Country Director and the Chief of the Climate Change Resilience and Energy.

Reportedly, the reason for the 2-year gap in PSC meetings was the lack of LPAC approval for the project (see below) and the fact that only the Jharkhand component was implemented since November 2017. The PSC meeting in 2020 was not held due to COVID-19 outbreak.

Although key stakeholder ministries and agencies at the national level identified in the Project Document (such as MNRE, BEE) have been involved in the project implementation as PSC members, the same could not be said about civil society organizations and academic institutions that were suggested for PSC membership in the Project Document.

Apart from the PSC, the Project Document envisaged establishment of a Technical Advisory Committee (TCs) comprising major stakeholders including representatives of the MoEFCC, UNDP, the two states (JREDA and MANIREDA) and independent RE and EE technical experts to monitor and resolve technical aspects and issues of the project. The TAC did not convene and therefore did not play a role in implementation of the project.

Local Project Appraisal Committee (LPAC)

Reportedly all UNDP projects have to approved for implementation by the LPAC chaired by the Department of Economic Affairs (DEA) in the Ministry of Finance. The MT project was signed by the GoI in January 2016 but was considered in the LPAC that was organized in March 2017. The committee suggested to share the Project Document with ministries with direct or indirect stakes in the project. Therefore, the ProDoc was shared with the Ministry of Power (MoP), the Ministry of New and Renewable Energy (MNRE), the Ministry of Home Affairs (MHA), The Bureau of Energy efficiency (BEE), the Department of Economic Affairs (DEA) and the Ministry for Development of North Eastern Region (MDONER). The project received consent from all the consulted ministries except Ministry for Development of North Eastern Region (MDONER).

The project was again reviewed in the LPAC organized on 22 November 2017. The committee approved implementation of the project in Jharkhand but decided to keep the project component for Manipur on hold and wait for comments and clearance from MDONER as all projects in the North East region including Manipur must be cleared by MDONER.

The third LPAC meeting was organized on 20 July 2018 specifically for the purpose to obtain the clearance for implementation of the Manipur component. However, the committee directed the project team to get additional clearance for the Manipur component from the Ministry of External Affairs (MEA). This requirement further delayed the process as the "no objection" and political clearance from MEA was obtained only on 22 March 2019. However, DEA suggested to seek approval from NITI Ayong[11] as well.

[11] The NITI Aayog is a policy think tank of the Government of India, established with the aim to achieve sustainable development goals with cooperative federalism by fostering the involvement of State Governments of India in the economic policy-making process using a bottom-up approach.

The fourth LPAC meeting was organized on 15 May 2019 and DEA has given final approval for implementation of the Manipur component, more than 3 years after the project starting date.

The Jharkhand component was launched 1.5 years after the official project starting date. Reportedly, the initial delay was related to the lack of clearance for the project by some relevant national ministries, in particular MNRE and MoP. The Manipur component was allowed to commence only almost 2 further years after the start of the Jharkhand component once the clearance from MDONER was secured.

The above summary suggests that at the preparatory and inception phases of the project insufficient attention was paid to the compulsory GoI clearance requirements for UN projects.

Furthermore, the evaluators found that the actual management arrangements for the project were not in line with those outlined in the Project Document. In particular, inability to convene the national PSC was a major insufficiency given the size and complexity of the project. In the absence of the PSC, annual work plans for 2016 and 2018 were not officially signed and this constituted a challenge for the project team to get the required funding for the planned activities.

4. PROJECT IMPLEMENTATION

4.1. Adaptive management

GEF evaluations assess adaptive management in terms of ability to direct the project implementation through adapting to changing political, regulatory, environmental and other conditions outside of control of the project implementing teams. The adaptive approach involves exploring alternative ways to navigate the projects towards meeting the planned objectives using one or more of these alternatives.

Although the project team covered up some of the lost time through diligent and prudent work planning. In the absence of clearance for implementation of the Manipur component, the project team decided to prepare activities in parallel in both states. While some studies produced until the end of 2018 were valid for both states, there were some Manipur-specific activities undertaken, such as update of the Marginal Abatement Cost Curve (MACC) for prioritized technologies, development of Monitoring, Reporting and Verification (MRV) tools and protocols, preparation of Clean Energy Action Plan, development of a Technology Facilitation Desk (TFD), as well as a detailed project report for ESCO project on municipal water pumps replacement and feasibility assessment studies for roof-top solar application in selected sectors and institutions.

During the initial delays, the project team conducted consultations with the two nodal state departments and sought their inputs on the Terms of Reference for a majority of the activities that were on hold. As soon as the project received approval for Manipur, ToRs were launched and activities initiated without any delays. In this manner, considerable amount of time was saved while waiting for the official approval of implementation in Manipur, however,

Other examples of adaptive management are related to activities that had been defined in the Project Document but were already launched by the state authorities during the time of initial delays of the project. These included the LED street lighting initiative in Jharkhand.

4.2. Partnership arrangements

As already mentioned above, the failure to convene the wider membership of the PSC as envisaged in the Project Document entailed the only established partnership at the national level between UNDP and MoEFCC. Even this partnership rather loose due to the lack of formalization of the PSC.

At the state level, the partnerships initiated for the MT project were much stronger and extensive. The state level PMUs in Jharkhand and Manipur were located within the respective state nodal agencies (JREDA and MANIREDA[12]) and these arrangements were instrumental to establishment of close cooperation between the project and the state governments, the nodal agencies, and through the latter with other partners and beneficiaries at the state level.

[12] In Manipur, the PMU was co-located within the Directorate of Environment and Climate Change and MANIREDA.

4.3. Project finance

The GEF grant for this project was approved at 3,744,500 US$ and together with expected co-financing of 25,000,000 US$ the total cost of the project at inception was 28,744,500 US$. Table 6 below displays the breakdown of expenditures from the GEF grant by the years of the project implementation period.

Table 7: Budget to actual by years of implementation in US$ (as of December 2020)

Component	Budget (US$)	Expenditures (US$)						Delivery %
		2016	2017	2018	2019	2020	2016-2020	
Outcome 1	1,213,500	210,465.71	220,722.80	548,160.67	437,321.36	36,485.00	**1,453,155.54**	119.75
Outcome 2	1,234,753	212,885.93	436,486.98	220,992.34	460,469.24	351,747.41	**1,682,581.90**	136.27
Outcome 3	1,118,000	66,217.35	22,783.38	6,486.77	4,830.02	141,130.74	**241,448.26**	21.60
Project Management	178,247	34,577.83	76,892.53	17,620.97	-10,354.90	30,256.21	**148,992.64**	83.59
Project Total	**3,744,500**	**524,146.82**	**756,885.69**	**793,260.75**	**892,265.72**	**559,619.36**	**3,526,178.34**	94.17

It follows from Table 8 that the total expenditure from the GEF funds at the project closure was 3,526,178.34 US$, that is 94.17% of the total GEF grant. Furthermore, the data in Table 8 show that disbursements for Components 1 and 2 were significantly over the planned budget (by 19.75% and 36.27%, respectively) while the overall delivery for Component 3 reached only 21.6% of the planned budget. However, this was duly noted by the regional oversight team and a justification was requested from the UNDP CO. The necessary justification was provided and reported in the management system.

The MT project was designed to attract co-financing from the project Implementing Partners as well as from the two beneficiary states (with unspecified sources of co-financing).

Table 8 below compares the co-financing pledged at the project inception with the actually realized co-financing at the completion of the project.

Table 8: Comparison of planned and actual co-financing by source.

Co-financing Partner	At inception (US$)	At TE (US$)
UNDP	500,000	800,000
Government	24,500,000	30,400,000
Other partners (private sector	-	9,010,000
Total co-financing	25,000,000	40,210,000

Comparison of the actual co-financing data with the same in the Project Document shows that the total actual co-financing for the project exceeded the expected value by more than 60%. This was achieved through increased co-financing by the governments as well as through mobilization of sizeable co-financing from the private sector.

The actual co-financing for the project from the UNDP regular resources reached 800,000 US$ and exceeded the pledged amount by 60%. About 200,000 of the actual co-financing was provided to cover operational cost of the core staff at the national level since the inception of the project. The remaining 600,000 US$ was sourced from the Swiss Agency for Development and Cooperation (SDC) project implemented by UNDP on for designing and institutionalising of SAPCC at the state level.

Table 9 below shows breakdown of the total Government co-financing by type of activity.

Table 9: Breakdown by co-financing activities by the national and state Governments

Activity	Amount (US$)	
MoEFCC: Projects funded under NAFCC for implementation of interventions recommended under SAPCCs in Jharkhand and Manipur	Jharkhand	3,440,000
	Manipur	1,390,000
Jharkhand: Mitigation activities implemented in through financial convergence/Govt. co-financing (excluding solar water pump programme		6,990,000
Jharkhand: Subsidy extended to solar water pumps programme		12,020,000
Manipur: Mitigation activities implemented through financial convergence/Govt. co-financing		6,230,000
In kind contribution by the Jharkhand and Manipur State Governments		330,000
Total		**30,400,000**

Comparison of the actual co-financing with the expected levels listed in the Project Document shows that the in-cash co-financing by the MoEFCC was 4,830,000 US$ and exceeded more than twice the pledged amount of 2,000,000 US$[13]. The co-financing by the two state Governments also exceeded the amounts pledged at the project inception.

4.4. Monitoring and evaluation: design at entry and implementation

M&E design at project entry

The Monitoring & Evaluation (M&E) Framework is in details described in the Project Document. The Framework consisted of the Project Inception Workshop, meetings of the Project Steering Committee, quarterly and annual Project Implementation Reports as well as the Mid-Term Review and the Terminal Evaluation. The total indicative cost for the project M&E plan (excluding project team staff time and UNDP staff and travel expenses) was 142,000 US$, i.e. less than 5% of the GEF grant.

Overall, the evaluators found the M&E design suitable for monitoring the project results and tracking the progress toward achieving the objectives, with the exception of the deficiencies in the project results framework discussed in the section “Analysis of the project results framework” above. Also, the financial allocation for the M&E activities is considered adequate.

[13] Project Document - Annexure B: Co-Financing Letters

The design of M&E framework followed the standard M&E template for projects of this size and complexity and therefore is rated **Satisfactory (S).**

M&E at implementation

The main subject of the discussion here is the implementation of the originally planned components of the M&E plan. For the assessment of the M&E framework, the evaluators reviewed some of the project documentation related to monitoring and reporting of the project results.

Annual Project Reports/Project Implementation Reviews (APRs/PIRs): The most important instrument in the monitoring process were the Project Implementation Reviews (PIRs) prepared with annual periodicity at the end of each GEF fiscal year (July to June). The PIRs provided a detailed account of progress at the level of the project outcomes through listing cumulative achievements in comparison with the previous reporting period. The Evaluation Team reviewed PIRs for the GEF fiscal years 2017, 2018, 2019 and found them having a uniform structure and containing detailed reporting on progress towards performance targets at the outcome as well as the project objective levels. In addition to the account of progress in the logframe format the PIRs also contain ratings and comments on development objective progress and implementation progress provided by the NPM and UNDP CO. However, none of the PIRs contained any input from the national Implementing Partner (MoEFCC).

GEF Tracking Tools: The evaluators reviewed GEF Tracking Tools from the CEO Endorsement, the mid-term and project completion. The TTs were prepared in the standard format and contained all required information. This indicates that the required data had been collected systematically throughout the implementation period of the project.

An independent Mid-Term Review (MTR) was expected to be undertaken at a mid-point of the project, i.e. approximately two years after the project start. Due to the slow start of the project implementation, the MTR was actually conducted at the beginning of the 4th year of the project (March/April 2019).

Terminal Evaluation: The Project Document stipulated TE to be conducted three months prior to the project completion date. In reality, the TE preparation process was negatively influenced by the Covid-19 pandemic. TE was finally commissioned by the UNDP CO in the 4Q of 2020. and conducted in March-April 2021.

Based on the above, the M&E at design and implementation is rated **Satisfactory (S).**

4.5. Feedback from M&E activities used for adaptive management

The discussion under this section is based on observations and assessment whether the logical framework was used during implementation as a management and M&E tool and the extent to which follow-up actions, and/or adaptive management were taken in response to monitoring reports (APR/PIRs) and the MTR report.

The response to monitoring activities is well documented in the available PIRs and comprised adjustments of annual work plans as well as identification and management of critical risks.

The MTR Report contains overall conclusions on project implementation progress, highlights issues requiring decisions and actions by the project stakeholders and total 5 recommendations for enhanced implementation during the remaining part of the project's time period.

A summary of the MTR recommendations is in Box 1 below.

Box 1: List of MTR recommendations

Recommendation 1: Reassess the Situation in Manipur and Chart the Way Forward

• First of all, the project team and Steering Committee should carefully assess the Manipur component of the project. Now that the necessary clearances for initiating full-scale activities in Manipur have been obtained, the question is what activities should the project team undertake there. Given the limited amount of time available, the project team should conduct an assessment of what is feasible to achieve in Manipur in terms of activities that are in line with the nature of this project and based on the experience of Jharkhand.

• Subsequently, based on the results of the Manipur assessment, the project team should develop a clear and realistic work plan for the Manipur component which needs to be approved by the Steering Committee. This plan should include both the approach that will be taken and the list of activities that will be conducted in Manipur.

• The Manipur assessment and work plan will provide a clearer picture of the timeframe that will be required for the completion of all project activities. This should be the basis for any decision on the extension of the project. As things stand out, an extension seems inevitable if a strategic decision is made by project stakeholders and the Steering Committee to proceed with the implementation of the Manipur component.28 The timeframe for the extension should be determined on the basis of the Manipur assessment and ensuring work plan.

• The project team should start an intensive process of engagement with relevant players in Manipur (government, civil society, private sector, etc.) and the Steering Committee should be expanded to include relevant members from Manipur.

• Given the limited timeframe for the completion of a number of key activities and the need for intensifying the pace of activities in Manipur, it is recommended that the Steering Committee meets more frequently for the remainder of the project. At least a meeting every six months is highly recommended.

• Quickly mobilizing a fully-fledged team for Manipur will be crucial for the project. It might be difficult for the project to find experienced staff members in Manipur who are not only versatile with the specifics of the RE and EE sector, but also familiar with UNDP rules and procedures. If that will be the case, the project might consider shifting human resources

Recommendation 2: For the Remainder of the Project Focus on Key Issues

There are a number of key issues on which the project could focus in the remainder of its lifetime. This MTR has identified a few of those issues. The evaluators would recommend the following:

• It would be advisable to revise the project RRF, given the challenges that some of the targets present – especially at the outcome level, as discussed in this report. The revision of the RRF should be done in a way that takes into account what is feasible in Manipur and also what the project will aim to achieve there.

• MoEFCC needs to play a more crucial role in leading project activities through the Steering Committee. New Annual Work Plans that will include Manipur will have to be swiftly approved.

• With the help of the project team, MoEFCC should also consider different options for the scaling up of the initiatives and demonstrations promoted by the project. MoEFCC has an important role to play in this process because it is the entity that can forge cooperation across states and ensure that the models and approaches tested and promoted by the project will cross state borders and get absorbed elsewhere.

Recommendation 3: Strengthen the Sustainability of Project Initiatives

The project team should examine more closely the issue of sustainability of the various project initiatives it has been promoting for demonstration purposes. What is crucial here is to set these initiatives on market-based foundations. This will require moving away from grants and promoting financing from the banking/financial sector which is the only sustainable option in the long run. This will require a continuation and intensification of the project's engagement with the banks and financial institutions not only at the state level, but also on a national scale. MoEFCC and the UNDP CO can play a major role here by contributing through their advocacy efforts in Delhi. The project team needs to develop a clear action plan for this area, which also identifies specific tasks for MoEFCC and the UNDP CO at the national level.

Recommendation 4: Strengthen Synergies and Linkages between Projects

UNDP and MoEFCC should strengthen collaboration and linkages between the MT project and other technical assistance projects under their leadership, particularly the ACE project. Where feasible, they should establish more integrated frameworks not only for sharing lessons and good practices, but also for project planning and implementation where feasible.

In general, UNDP should explore the establishment of mechanisms for managing more closely together aspects of projects that share similar objectives, especially when the state level is concerned. Such mechanisms may involve not only integrated implementation of activities related to information sharing and data systems, but also joint implementation tools related to training, awareness raising, planning, monitoring and evaluation, etc.

Recommendation 5: Using the M&E System to Track Important Parameters

The project team should examine how the M&E system is used to track important aspects of the project with a view to improving the availability of information for management purposes. The following are a few dimensions worth considering.

• Uptake of project outputs (studies, training, etc.) and the degree to which they serve their intended purpose – The project should monitor more systematically the extent to which project activities related to research and training get absorbed by beneficiaries.

• Capacity of stakeholders/beneficiaries – The project should track the degree to which the capacity of participants taking part in the various training programmes organized by the project has improved.

• Experience of infrastructure project initiatives, lessons they generate and the extent to which they get scaled up – It might be a bit too early to talk about replication of infrastructure projects, but one characteristic of them is that they serve to produce lessons which when shared may lead to replication in other locations. They can be vehicles for transmitting experience and play a crucial role for upscaling and replication. However, it is not clear how their lessons are collected, analyzed, synthesized and shared by the project. This requires more systemic thinking and actions. The project should develop a tracking mechanism for pilot initiatives, including documenting results, lessons, experiences and good practices.

• Co-financing – The project should track more effectively co-financing by implementing partners and also co-financing by beneficiaries for infrastructure projects. The project team might consider the establishment of a monitoring database for this purpose.

The recommendations are directed on project implementation matters and call for prioritization of project activities for the remaining period of the project (with special emphasis on the Manipur part), establishment of synergies with other interventions, improved use of the project M&E frameworks and increase of sustainability of the project results.

Part of the MTR report is devoted to a critical analysis of the project logframe. Recommendation No. 2 suggested a revision of the project logframe through revision of the indicators and/or their target values.

As per standard practice for UNDP/GEF projects, the commissioning unit and the project team together draft a management response to MTR to formulate response of the recipients of the MTR recommendations. Both the MTR report and management responses are uploaded to the UNDP Evaluation Resource Centre (ERC) platform.

Although the MTR report contains 5 recommendations, the management response available at the ERC covers only 2 recommendations, namely Recommendation #1 and 3. The responsive actions to Recommendation 1 include consultations with the Manipur State Government and relevant stakeholders as well as preparation of a detailed work plan for the identified priority actions. This was fully implemented. For Recommendation 3, the action adopted was to engage with banks and other financial institutions at the national and state levels in order to facilitate market-based lending for RE/EE activities. To this end, the project team organized consultations with financial institutions and that involved presentation of DPRs for selected investment to solicit financing.

There was no formal response to the other MTR recommendations, in particular Recommendations 2, 4 and 5.

Based on the above, the rating of the quality of M&E implementation is **Moderately Satisfactory (MS).**

4.6. UNDP and implementing partner implementation / execution

The project followed the management arrangements presented in the Project Document that were based on a common scheme for project management arrangements under the UNDP National Implementation Modality (NIM) established and implemented in the way that ensured transparency and accountability for the results and use of GEF resources, while at the same time they fostered national ownership of the project through continued alignment of the project to the national needs and priorities.

The NPM hired by UNDP played a key role in monitoring and coordination of the project activities at the state level. Besides that, the UNDP CO provided overall supervision of the project by the Head of Energy & Environment (E&E) Unit and management support by compilation of the CDRs by the Financial Department.

Apart from the staff of the CO in the project recipient country, for each GEF project UNDP makes available a Regional Technical Advisor (RTA) for technical oversight and backstopping

of the project. For the MT project, the RTA was based in UNDP Bangkok Regional Hub. Input from RTA and progress ratings have been incorporated in the PIR.

The Project Document envisaged several roles for the MoEFCC ranging from overall responsibility for implementation of the project through chairing of the PSC and TAC meetings to hosting the central PMU. In addition to the roles outlined in the Project Document, the MoEFCC played a key role in the inception phase of the project, particularly through participation in the four meetings of the LPAC that facilitated obtaining approvals for starting implementation at the level of states. However, the expected roles of MoEFCC in the implementation phase through the PSC and TAC was limited as the former did not convene with the expected frequency and the latter had not been established at all. Therefore, the role of the Implementing Partner in the project implementation was very limited.

Based on the above findings, the quality of UNDP and the Implementing Partner implementation/execution is rated **Moderately satisfactory (MS).**

5. OVERALL RESULTS (ATTAINMENT OF OBJECTIVES)

The information presented in this section was sourced from the various project implementation reports and verified with information collected through interviews with key informants. Additional sources of information were various studies and technical reports produced by the project. The list of documents consulted is provided as Annex 4 to this report.

5.1. Relevance

The questions discussed under this section are to what extent is the project linked to the national development priorities of India, the relevant GEF Operational Programme and strategic priorities of UNDP.

Relevance to the country's needs and priorities

National Action Plan on Climate Change (NAPCC): The NAPCC of 30 June 2008 outlines a number of steps to simultaneously advance India's development and climate change-related objectives. It encompasses a range of measures and focuses on 8 national missions, among which, the National Solar Mission (NSM) and the National Mission on Enhanced Energy Efficiency (NMEEE) have a direct relevance to the RE and EE interventions under the MT project.

- The National Solar Mission (NSM) aims to promote the development and use of solar energy for power generation and other uses, with the ultimate objective of making solar competitive with fossil-based energy options. It also includes increased international collaboration on technology development, strengthening of domestic manufacturing capacity, and increased government funding and international support.
- National Mission on Enhanced Energy Efficiency (NMEEE) recommends promotion of specific energy consumption decreases in large energy-consuming industries, with a system for companies to trade energy-saving certificates, financing for public and private partnerships to reduce energy consumption through demand- side management programs in the municipal, buildings, and agricultural sectors, and various energy incentives.
- The Paris Climate Agreement where India has committed to a Nationally Determined Contribution (NDC) target of 40% of its total electricity generation from non-fossil fuel (renewable) sources by 2030. At the UN Climate Action Summit in September 2019, the Prime Minister of India announced increasing the RE target to 450 GW by 2030 from 175 GW by 2022. Specifically, the NDC target is 100 GW of solar power installed capacity by 2022. The NDC is comprehensive- it covers adaptation, mitigation, finance, technology, and capacity building with the goal to reduce overall emission intensity and improve energy efficiency, while protecting the vulnerable sectors and segments of the economy and society.

Relevance to UNDP strategic priorities in India

The MT project is in line with the UN strategic frameworks in the country—namely the 2013-2017 UNDAF and the current 2018-2022 UNSDF. The latter contains the following results related to energy:

- Increased access to affordable and reliable energy to all with targeted interventions in at least 35 percent of 18,000 un-electrified villages,
- Enhanced energy efficiency in selected energy intensive sectors in order to reduce greenhouse gas emissions and contribute to NDC targets,
- Innovative partnerships and financial models that contribute to achieving at least 10 percent of 100 GW national targets for solar energy generation by 2022,
- Increased use of RE, including solar and wind power and new technologies.

Outcome 6 of the UNDSF states that

"…..by 2022, environmental and natural resource management is strengthened and communities have increased access to clean energy and are more resilient to climate change and disaster risks".

In particular, the project contributes to two sub-outcomes:

• 6.1 Annual reduction in tons of CO2 (tCO2/year) in line with the nationally determined contribution and commitments under the UNFCCC.

• 6.6 Enhanced energy access within vulnerable communities.

The project is also in line with the UNDP Country Programme Document for India (CPD) for 2018-2022 that focuses on building exemplary projects funded through GEF and other sources in order to develop EE technology with the opportunity to scale-up. In particular, the goal is to meet the clean energy requirements of underserved, poor communities. This outcome also focuses on UNDP's commitment to reinforce integration of internationally adopted frameworks and policies for climate change within national and state-level institutions, systems and processes, including the energy, transportation, water, agriculture and forestry sectors.

Specifically, the MT project contributes to CPD Outcome 3 (energy, environment and resilience) and in particular to the following two outputs:

• Output 3.3. Inclusive and sustainable solutions adopted to achieve increased energy efficiency and universal clean energy access,

• Output 3.4: Blended finance mechanisms developed to strengthen sustainable energy and environment solutions.

Energy efficiency is also amongst corporate priorities for UNDP that has been working on energy efficiency for more than 25 years and champions global initiatives such as United for Efficiency (U4E) —linking leading companies, civil society and senior policymakers toward a common purpose: transforming emerging and developing economies with energy-efficient products.

Being part of U4E allows UNDP to do this work with a consistent, proven method called the Integrated Policy Approach. The comprehensive approach ensures widespread and lasting market transformation. It includes mandatory minimum energy performance standards (MEPS), labelling and communication efforts to ensure stakeholders are well informed, financial mechanisms to support purchases of efficient products, monitoring of the market and enforcement of the rules, and safe handling of products.

Key UNDP services in the area of energy efficiency include policy and programme support to promote energy efficiency in households, public and municipal facilities, residential and commercial buildings, and industry. UNDP is also supporting national and local governments to design and adopt efficient policies and legislation and help governments with integrated solutions that tackle energy efficiency in disaster risk reduction and recovery processes. Additionally, UNDP supports the implementation of business models and financing mechanisms to facilitate energy-efficient investment by private sector partners.

In relation to the UN Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development, energy is being recognized as a key enabler for development through establishment of SDG Goal 7: “Ensure access to affordable, reliable, sustainable and modern energy for all”. Its indicator 7.2 calls for substantially increase of the share of RE in the global energy mix and the indicator 7.3 calls to double the global rate of improvement in energy efficiency by 2030. Universal access to energy, a higher share of renewable energy and massive improvements in energy efficiency are now part of the top global priorities for sustainable development. In addition to direct relation to SDG7, RE and EE are indirectly related to other SDGs as summarized in Box 2 below.

Box 2: Relation of RE and EE energy efficiency to UN SDGs[14]

Sustainable Development Goals	Linkage with E and EE
Sustainable energy	
7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	7a. Enhance international cooperation to facilitate access to clean energy research and technologies, including renewable energy, energy efficiency, and advanced and cleaner fossil fuel technologies, and promote investment in energy infrastructure and clean energy technologies 7b. Expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries
7.3 Double the global rate of improvement in energy efficiency	
Other SDGs:	
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Energy efficiency and conservation influence the country's energy intensity and carbon content of economic growth
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Resilient infrastructure and public-private partnerships are required to ensure access to energy for all and to maximise energy efficiency
11. Make cities and human settlements inclusive, safe, resilient and sustainable	Municipalities require careful electricity planning and efficient power distribution
12. Ensure sustainable consumption and production patterns	The residential and buildings sector is a key part of a future in which there is sustainable consumption of energy and products
13. Take urgent action to combat climate change and its impacts	The carbon-intensive energy sector (based on fossil fuels) is a key driver of climate change.

Relevance to GEF focal areas

The MT project is linked to the GEF-5 Strategic Goal 2.1 – "Reduce global climate change risks by stabilizing atmospheric GHG concentrations through emission reduction actions" and its several Objectives, namely:

- Objective 2: Promote market transformation for EE in industry and the building sectors,
- Objective 3: Promote investment in RE technologies, and
- Objective 4: Promote energy efficient, low-carbon transport and urban systems

Based on the above, relevance of the project is rated Relevant (R) for the recipient country, as well as for the donor and implementing agencies.

5.2. Effectiveness & Efficiency

The principal questions to be discussed in this section are whether and how the project outcomes as well as its objective have been achieved and whether the project results have been delivered with the least costly resources possible. The further text will also highlight positive and negative, foreseen and unforeseen changes and effects produced by the project intervention.

In the series of tables below, the project results and achievements have been summarized and compared against the target indicators listed in the project's logical framework. The initial

[14] Compiled from Transforming our World: the 2030 Agenda for Sustainable Development (UN, 2015), Indicators and a Monitoring Framework for the Sustainable Development Goals, Sustainable Development Solutions Network (SDSN)

information about the project results/achievements was extracted from the project's PIRs and verified and updated through interviews and meetings held during the data collection phase. Additional information was supplemented from the project-related documentation provided by PMU.

Tables 9 – 13 list the indicator targets for the individual project Outputs, summarize the delivery status at the Terminal Evaluation and provide rating for the Outputs' delivery. Each table contains an overview of the actually achieved project results in bullet points followed by a short narrative with additional insight and details on how and why the results have or have not been achieved. At the end, the narrative also explains the basis for rating of each project outcomes. The text following each table summarizes some important facts related to the project results that could not be captured in the tables but were considered important for the justification of the rating of the project outcomes.

Component 1: Development of framework for effective implementation of CCM actions

Table 10: Deliverables for Outcome 1

Result	Objectively Verifiable Indicators	EOP Targets	Delivery Status at TE Jharkhand	Delivery Status at TE Manipur
Outcome 1: 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.	9		Manipur Grid-connected solar power park at Jirbam, EE city water supply system, Porompat Rooftop solar PV project for 21 government buildings EE LED street lighting (Palace gate to DC office and JNIMS) EE improvements in PWD building, Imphal 1,000 solar water heaters in Imphal 2 Small hydropower plants in Moreh and Govajang,
Output 1.1: Regularly updated GHG abatement cost curves at state level	Number of abatement cost curves prepared by Year 1	4	MACCs updated for 8 technologies pre-selected during project preparation (2016) MACCs updated for 7 technology interventions selected for implementation under the project (2017)	MACCs updated for 7 technologies pre-selected during project preparation (2016)
Output 1.2: 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	9	6 prioritized actions selected	4 prioritized actions selected
Output 1.3: 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	5	4 MRV toolkits prepared (municipal pumping EE, building EE, grid interactive roof top solar PV, solar water heater)	6 MRV toolkits prepared: Replacement of municipal pumps with EE pumps, Up-grade of existing buildings to EE buildings, Installation of grid connected rooftop solar PV, Installation of solar thermal water heaters, Installation of ground mounted solar PV, Installation of small hydropower plants,

Output 1.1: A national consulting company was contracted for implementation of this output in both states. MACCs used in the Project Document were updated along with integration of social/environmental co-benefits and implementation risks for ranking of key CCM measures. This exercise was conducted not only for the CCM measures pre-selected at the project preparatory phase but also for additional interventions identified through consultations with JREDA and DoEFCC and multi-criteria analysis. The consultant calculated potential GHG abatement and abatement cost for each intervention using standard data from state and appropriate assumptions.

The MACC were further updated by the State Team for the technology interventions selected for implementation under the project. However, it is the understanding of the Evaluation Team that the MACCs were updated only twice during the project and no further updates were conducted as envisaged in the Project Document. Also, capacities for MACC update in the two state nodal agencies have not been fully developed.

Output 1.2: The prioritization of CCM actions was done based on consultations between the Implementing Partners (state nodal agencies and UNDP).

From the CCM actions listed in the Jharkhand SAPCC, the following 6 actions were prioritized and taken up for implementation under the project:

- Development of renewable energy (RE) & energy efficiency (EE) action plan of the Jharkhand state (power sector prioritised activity)
- Promotion of adoption of EE options in urban sector/SME sector (power sector prioritised activity)
- Development of a MSME sector efficiency improvement strategy aligning it with on-going efficiency improvement programmes of financial institutions and bi- and multilateral development institutions (industry sector prioritised activity)
- Promotion of EE technological measures to reduce power consumption in government buildings and other installations (power sector prioritised activity)
- Promotion of RE options in villages – a programme on off-grid lighting solutions for villages (power sector prioritised activities)
- Development of programmatic EE approaches for urban water pumping and sewerage disposal (urban sector prioritised activity)

For the CCM actions listed in the Manipur SAPCC, the following 4 actions were prioritized and taken up for implementation under the project:

- Installation of stand-alone type of solar PV power plantsolar street & home lighting systems, etc (state mission on enhanced energy efficiency conservation)
- Installation of grid connected rooftop / demonstration solar power plants (state mission on enhanced energy efficiency conservation)
- Energy audit of all government buildings (state mission on enhanced energy efficiency conservation)
- Promotion of e-vehicle (state mission on urban planning)

Output 1.3: The consultant engaged in updating the MACC for Jharkhand also developed 4 MRV protocols and tools for automated monitoring of results from implementation of the following interventions:

- Automated meter reading (AMR) for monitoring generation through solar rooftop across different demand segment,
- System for building management for monitoring energy conservation across the building sector,
- Monitoring of solar water pump operation,
- System with solar cold storage for automation and temperature control,

In addition to the above, systems were developed for third party monitoring of solar rooftop establishment and function across public buildings and across private institutions. Separate MRV toolkits were developed for each intervention considering the different parameters to be captured and monitored for estimating the GHG emission reduction.

In Jharkhand, trainings on institutionalizing of the MRV protocols were organized for key stakeholders including JREDA, Department of Forest, Public Works Department and Urban Development Department.

Overall Assessment of Outcome 1: This Component was essentially implemented in the 1st year of the project when the MACCs that had been developed during the project formulation were updated and consequently applied to prioritized RE/EE solutions. The MACC were reportedly once again updated by the project but no annual updates were performed as envisaged in the Project Document. Additionally, an MRV tool was developed and implemented to monitor the progress in the installations.

The Project Document identified the MACC updating as base of the replication approach of the project. However, MACC is only useful for identifying potential and updating MACC only makes sense if primary data is collected periodically that can feed into the MACC.

Although (AMR) for solar rooftop applications was reported as one of the developed MRV toolkits, it is not clear whether the AMR was complemented by any system acting upon the collected AMR data in order to be considered as MRV tool.

Based on the above, the achievement of Outcome 1 is rated (Satisfactory).

Component 2: Catalysing investments for implementation of selected RE and EE mitigation actions

Table 11: Deliverables for Outcome 2

Result	Objectively Verifiable Indicators	EOP Targets	Delivery Status at TE Jharkhand	Delivery Status at TE Manipur
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	9	8 locally designed, planned and financed RE and EE projects implemented (5 RE projects and 3 EE projects)	6 locally designed, planned and financed RE and EE projects implemented (2 RE projects and 4 EE projects)
Output 2.1: Completed evaluation of existing available loan mechanisms for projects developed as part of SAPCC targets	Number of loan mechanisms evaluated by Year 2	5	Financing landscape report with evaluation of 5 loan mechanisms (2016) Policy study on aligning state sectoral budgets for development with CCM actions (2017)	
Output 2.2: 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	1	4 non-grant financing instruments developed	1 non-grant financing instrument developed (debt finance) for implementation of e-vehicle
Output 2.3: Mobilized public and private sector funding	Amount of total funding mobilized for implementation (US$) by Year 4	12,000,000	Total financial mobilisation under the project USD 15,114,758	Total financial mobilisation under the project USD 7,886,366
Output 2.4: Established public private partnerships (PPP) for implementation and scaling up of selected RE and EE actions in Manipur and Jharkhand	Number of replication projects on the selected RE and EE mitigation actions implemented by EOP No. of PPP business models developed by Year 3	32 9	175 replication projects implemented PPP business model developed	
Output 2.5: Implemented nine RE and EE investment projects in Manipur and Jharkhand innovative financial models developed by end of year 1	No. of demonstration investment projects based on innovative financial models developed by end of year 1 No. of demo investment projects implemented by EOP	9 5	9 investment projects implemented based on the developed financial mechanisms	3 investment projects implemented based on the developed financial mechanisms
Output 2.6: Completed implementation manual and workshops for supporting the implementation of selected public private partnership models for RE and EE actions	No. of implementation manuals developed by Year 3 (one manual for each state) No. of workshops conducted on sensitizing the state agencies on proposed models by Year 4	2 2	Procedural manual for RTS financing Technology compendium developed for selected RE and EE technology options for MSME Manual for financing implementation RE and EE measures in MSME 11 different workshops on a range of topics for a variety of audiences	

Outcome 2:

Key interventions undertaken under this Component were as follows:

A: Jharkhand

Following initial assessment of 180 institutions, total 1.14 MW of new RTS installations was commissioned in about 30 private institutions through the project intervention in combination with subsidies from JREDA. Further 0.326 MW were installed through replication using the RESCO modality.

The project financed total 60 kW new RTS installations in 9 healthcare facilities (HCF). The demonstration installations were replicated in further 148 HCFs through funding provided by JREDA and added 1.491 MW capacity.

The project supported preparation of DPRs in 11 cold storage units. Implementation of energy conservation measures in two units was facilitated through financial assistance from BEE while energy conservation measures in the remaining units were financed by own resources of the industrial facilities. Furthermore, the project piloted installation of a 4 kW solar micro cold storage unit that was further upscaled to total 94 kW of solar PV capacity through funding provided by JREDA.

In the industrial sector, the project catalysed installation of 240 kW of new RTS capacities in 9 industries (mostly ceramic and tiles manufacturing). This intervention was further expanded to almost 4,700 kW through application of RE/EE measures in two groups of MSMEs. In the public building sector, the project catalysed investments for total 15,45 MW of newly installed RTS capacities in four phases.

The project supported installation of a pilot solar mini-grid at Garo Village for provision of energy for lighting as well as demonstration of two solar water pumps with IOT application at cumulative 5kW capacity that was further was replicated by about 6,000 solar water pumps through community sensitisation and engagement with farmers under MNRE and JREDA under the PM-KUSUM[15] scheme with total capacity more than 15 MW.

The project supported establishment of six micro enterprise facilities operated by solar PV that has provisioned for localised employment opportunity of women in the village.

In the industrial sector, the project catalysed installation of 240 kW of new RTS capacities in 9 industries (mostly ceramic and tiles manufacturing). This intervention was further expanded to almost 4,700 kW through application of RE/EE measures in two groups of MSMEs.

In the public building sector, the project catalysed investments for total 15,45 MW of newly installed RTS capacities in four phases.

The project supported installation of a pilot solar mini-grid at Garo Village for provision of energy for lighting.

[15] Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (KUSUM) Yojana was launched by the Government of India to increase the income of farmers and provide sources for irrigation and de-dieselising the agricultural sector.

The project-supported installation of two solar water pumps with total 5kW capacity was replicated by commissioning of further about 6,000 solar water pumps under JREDA funding with total capacity more than 15 MW.

The locally designed and implemented RE projects in Jharkhand are listed in Table 11 below.

Table 12: List of implemented RE projects in Jharkhand

Project Title	**Capacity installed demonstration MW**	**Capacity installed through state-wide replication MW**	**Total new installed capacity MW**
RTS in Institutional Sector	1.14	0.326	1.47
RTS in rural health care facilities	0.06	1.491	1.55
RTS in CNI segment	-	4.688	4.69
RTS in residential sector	-	0.362	0.36
RTS in public building	-	15.448	15.45
Solar cold storage	0.004	0.10	0.10
Solar mini grid	0.017	-	0.02
Solar Water Pump	0.005	15.159	15.16
Solar Powered Microenterprise	0.02	0.02	0.04
All projects	**1.25**	**37.59**	**38.84**

The first Building Management Intelligent System (BMIS) and energy conservation measures were implemented in Van Bhawan, Forest Department office building in Ranchi. This intervention resulted in annual energy savings of almost 152 MWh. Further DPRs prepared under the project were implemented by combined action of JREDA (2 buildings) and respective building owners (12 buildings). This upscaling resulted in annual energy savings of 12,470 MWh.

The project supported energy audits of 23 municipal pumping stations for drinking water in Ranchi and Dhanbad. Retrofit of the pumps complemented with other EE measures resulted in energy savings of 3,715 MWh.

Detailed assessments of 11 conventional cold storages supported by the project were taken up for implementation by JREDA. The EE measures resulted in 276 MWh of saved energy.

The project supported conduct of energy audits in 120 MSME units that identified significant energy saving potential through low-cost interventions such as energy efficient lighting, PF correction, energy efficient motors, variable frequency drives and thermal insulation. Project supported for addressing these issues was provided through a series of awareness and dissemination workshops. Implementation of these measures by 56 MSMEs resulted in realized annual energy savings of 23,300 MWh.

Implementation of EE measures in 180 private schools produced annual savings of 23,871 MWh of energy.

The locally designed and implemented EE projects in Jharkhand are summarized in Table 12 below.

Table 13: Summary of EE projects implemented in Jharkhand

Project Title	**Energy savings due to implementation of EE interventions MWh**	**Energy savings from state-wide replication of interventions MWh**	**Cumulative energy savings MWh**
EE in Public Building	151.95	12,469.75	12,621.70
EE in municipal pump and rural drinking water supply		3,715.20	3,715.20
EE in cold storage (MSME)		276.6	276.6
EE in MSME sector		4,368.38*	4,368.38
EE in pvt schools			2,889.45
All projects	**151.95**	**38,034.55**	**23,871.33**

* MSME EE implementation is carried out in two phases, 4368.38 MWh was achieved in the 1st phase whereas 18,962 MWh is achieved in second phase.

B: Manipur

The project supported total 0.83 MW of new RTS installations. This included 725 kW of newly installed RTS capacity across 55 community centres and 31 private educational institutes in Manipur that resulted in substantial cost saving for these educational institutes.

State-wide replications through MANIREDA added further 6.91 MW of installed capacity, including 1,725 MW of the street lighting project.

The locally designed and implemented RE projects in Manipur are listed in Table 13 below.

Table 14: Summary of RE projects in Manipur

Project Title	**Capacity installed demonstration MW**	**Capacity installed through state-wide replication MW**	**Total new installed capacity MW**
	MW	**MW**	**MW**
RTS in private sector	0.73	3.67	**4.390**
RTS in health care facilities	0.099	0.00	**0.099**
RTS in public building		0.52	**0.515**
Grid connected power project		0.60	**0.600**
solar street lighting		1.725	**1.725**
Solar cold storage	0.004		**0.004**
Off-grid solar power project		0.405	**0.405**
All projects	**0.83**	**6.91**	**7.738**

The locally designed and implemented EE projects in Manipur are listed in Table 14 below.

Table 15: Summary of EE projects in Manipur

Project Title	Energy savings due to implementation of EE interventions MWh	Energy savings from state-wide replication of interventions MWh	Cumulative energy savings by EoP MWh
EE in public building	314	657	971
EE in municipal pump		941	941
EE in private schools			399
All projects	**314**	**1598**	**2311**

For enhanced local knowledge and awareness creation, the project provided technical assistance to the Government of Manipur for setting up a Renewable Energy Knowledge Park in Imphal in order to showcase various RE technologies as well as their uses.

A detail assessment was undertaken, and 3 business plans were developed for promotion of sustainable electric public transportation. Number of consultations were undertaken with different departments of the State Government to finalize and implement the business plan. Implementation of the plan commenced in late 2020.

Output 2.1: The landscape financing study prepared by a national consulting company identified several available schemes, business models and financial instruments for financing implementation of key CCM actions. The findings of the study were used to develop strategy for financing of selected RE and EE measures. Reportedly, the following 5 loan mechanisms were evaluated for potential use in Jharkhand and Manipur:

- National Clean Energy Fund (NCEF)
- Solar Pumping Programme of the MNRE
- Partial Risk Guarantee Fund for EE (PRGFEE) under the BEE
- Public Financial Institutions: PFC, RECL, SIDBI& IREDA
- Commercial banks in the public and private sectors

However, only three of the above (the NCEF, the solar pumping programme of MNRE and commercial banks) are true loan mechanisms while the PRGFEE provides a partial coverage of risk involved in extending loans from funding sources and public financial institutions do not provide loans.

A policy study was carried for identification of climate change responsivity of the two states budgets to show how public investment had gone towards CCM priorities. The outcome of the study helped in identifying, integrating and aligning the climate change risks and opportunities into the budget preparation and helped in strengthening the governance of climate change finance. The analysis pertaining to climate finance component was used during revision of the two SAPCCs and for allocation of funds for implementation of key mitigation actions.

Output 2.2: The following non-grant financial instruments were assessed for Jharkhand:

- RESCO based financing for RTS implementation
- ESCO based financing for EE implementation
- State Energy Conservation Fund (SECF) for EE
- Private sector financing through capital expenditures for RE and EE measures

Output 2.3: Total value of funding mobilised under the project has reached 23 million US$, with the funded projects in Jharkhand worth of total 15,114,758 US$ and the projects in Manipur worth of 7,886,366 US$.

Output 2.4: The Government of Jharkhand State used public financing for scaling up of the initial demonstration of 9 solar rooftop rural health care facilities to 149 health care facilities and replication of the demonstration project on solar-powered cold storage in 24 similar units. The demonstration project on EE in public buildings was replicated in another 2 public buildings. Total 13 different business models were developed and further used for operation of RE and EE interventions in both states.

Output 2.5: The financial mechanisms used by the project for implementation of the investment projects are listed in Box 2 below.

Box 3: Financial mechanisms used for RE and EE interventions

Jharkhand	Manipur
Rooftop solar across institutional sector (PPP)	Rooftop solar across institutional sector (PPP)
Rooftop solar in XLRI (RESCO)	Roof top solar across social segment (PPP)
Solar-powered livelihood enterprise (PPP thought financial convergence)	E-vehicle promotion though PPP mode
Rooftop solar in industrial segment (debt finance)	
EE in public buildings (SECF)	
EE in municipal drinking water pumping station	
EE in MSME segment (debt and equity finance)	
Solar-powered cold storage (financial convergence)	

The PPP mode of funding convergence was successfully use in both states. In Jharkhand, the MT project facilitated solarization of 30 private institutes in PPP mode with the total installed solar PV capacity 1.142 MW. The financing model covered capital cost contributions from MNRE, (30%, mobilized through JREDA), school authority (50%) and the MT project (20%).

Similarly in Manipur the MT project assisted in solarization of 31 private education institutes and 55 community centres through capital cost contributions from MNRE, (70%, mobilized through MANIREDA), school authority/community (10%) and UNDP project support (20%).

Output 2.6: Workshops and other events were organized for training and sensitisation of various stakeholders as summarized below.

Box 4: Summary of training and awareness-raising events

Activity	Jharkhand		Manipur	
	Event	Activity	Event	Activity
Training on MACC and MRV tools to JREDA and other stakeholders Dept.	1	1		
Sensitisation on financing landscape and climate change responsivity of State's budget Event organised in collaboration with ICF.	1	2	1	2
Training on TFD, renewable energy and energy efficiency technology options	1	7	1	6
Training on net metering application	1	26		
Sensitization of FPOs on Solar cold storage and business model	1	27		
Boot camp for community sensitisation over possible livelihood opportunities and identify enterprise options	10	28		
Capacity building and sensitisation of MSME units over RE and EE technology options and linking with key suppliers/developers	5	33	3,	20
Stakeholders sensitisation over rooftop financing opportunities	2	34	34	
Sensitisation of the farmers over the benefits of PM-KUSUM – 10 numbers Training of farmers over O&M of SWP, water conservation and multi cropping 32	42	38	38	
Training of MSME on key Technology measures (Webinar)	2	41	41	
Training of MSME on debt financing options and linking with FIs(Webinar)	2	42	42	

Overall Assessment of Outcome 2: Prior to the MT project, the State Governments of Jharkhand and Manipur and the two nodal agencies (JREDA and MANIREDA) promoted RTS exclusively across government buildings. The MT project has facilitated outreach to the private sector (private schools, commercial and industrial consumers) where RTS adoption rate had previously been very low due to high capital expenditures, low electricity tariffs, lack of awareness regarding the benefits of the product and weak supply chains.

Support from the MT project led to establishment of the first project in Jharkhand implemented under the RESCO business model. The Xavier School of Management (XLRI) signed a Power Purchase Agreement (PPA) for 25 years with a leading solar developer for installation of 326 KW solar PV at the XLRI campus. The uniqueness of the RESCO business model (no upfront capital expenditure incurred by consumer) coupled with a low agreed tariff with no escalation was a significant achievement for the entire solar market in Jharkhand as it demonstrated opportunities for further upscaling.

Based on the above, the achievement of Outcome 2 is rated Satisfactory.

Component 3: Capacity development of State Government officials

Table 16: Deliverables for Outcome 3

Result	Objectively Verifiable Indicators	EOP Targets	Delivery Status at TE Jharkhand	Delivery Status at TE Manipur	Rating
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	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	2	Report on aligning CC actions with departmental budget for JREDA RE and EE action plan Revision of SAPCC to align sectoral budgets (on-going)	Report on aligning CC actions with departmental budget for MANIREDA RE and EE Action Plan	
Output 3.1: Aligned state sectoral budgets for development plans to include climate change mitigation actions related expenses	Allotment of budget for climate change actions in departmental budgets by year 2	2	Allotment of departmental budget: • RTS in institutional sector • EE in public buildings, MSME units and municipal water pumping • RTS upscaling for rural HCFs and solar cold storage upscaling in rural	Allotment of departmental budget: • RTS in institutional sector • RTS across social segment • RE park	
Output 3.2: Completed training and capacity building programs on the developed MRV systems for the State officials	No. of handbooks and guidelines prepared for MRV system by year 3 No. of training undertaken on the new MRV system by EOP	2 5	MRV guidelines developed for 4 technology options	MRV guidelines developed for 6 technology options	
Output 3.3: 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	4	RTS for private institutions and health care facilities Performance assessment of existing RTS installations Solar-powered cold storage EE adoption and financing in MSMEs		
Output 3.4: Conducted inter-state study trips and stakeholder interaction workshops	No. of study trips undertaken by EOP No of workshops undertaken by EOP	4 4	Interstate study trip for MSME units in Jharkhand and Manipur See Box 3 under Outcome 2		
Output 3.5: Established and operational information dissemination system on lessons learnt from investment projects undertaken on priority RE and EE actions.	No. of brochures, case study reports and other printed material published and disseminated by year 4 No of users of the system/year starting Year 4	10 2,500	Around 40 brochures, case study reports and other printed materials published and disseminated		

Outcome 3: In 2018, the Energy Department of Jharkhand, sanctioned 500,000 US$ for solar cold room installations in the state. The project supported the State Government of Jharkhand in revision of the SAPCC. The revision proposes key mitigation strategies on promotion of RE technologies and EE.

Output 3.1: The project supported the state governments of Jharkhand in revision of the state action plan on climate change (SAPCC). The revision undertaken with the concerned nodal department has proposed key mitigation strategies on promotion of RE technology and energy efficiency

Output 3.2: Under the project, MRV guidelines were developed for a number of technology options in the two states supported by relevant capacity building events (see Output 2.6 above)

Output 3.3: Despite the late start of the Manipur component, there were few CCM actions that were discussed for parallel implementation in the two states, including RTS for private educational institutions and health care facilities, performance assessment of existing RTS installations, solar-powered cold storage and adoption of EE interventions in MSMEs.

Output 3.4: With an aim to bridge the financing barrier in Jharkhand, UNDP organized a workshop on 'Accelerating Clean Energy Ecosystem in Jharkhand' on 25th September 2019. The workshop was attended by representatives from the State Government, financial institutions, educational institutions, commercial and industrial establishments (MSMEs). The Government of Jharkhand has identified more than 250 MW of solar rooftop demand and discussed the role of financial institutions in financing these installations. Representatives of the State Bank, the Punjab National Bank and the Small Industry Development Bank of India assured approved a loan programme for 750 KW of solar financing.

Output 3.5: The project supported development of printed materials a number of case study reports for distribution to relevant stakeholders.

Overall assessment of Outcome 3: The project has supported numerous capacity development events for a variety of stakeholders in the two recipient states, including the state Governments, health care facilities, private educational institutions, MSMEs and local communities.

Based on the above findings, the overall achievement of Outcome 3 is rated Satisfactory (S).

5.3. Achievement of the Project Objective

Despite the delayed start of implementation, the project achieved a remarkable replication and upscaling effect as summarized in Table 16 below.

Table 17: Summary of achieved energy savings

Intervention	Jharkhand			Manipur		
	Project	Replication	Total	Project	Replication	Total
RE Installed Capacity MW	1.248	37.6	38.8	0.83	6.9	7.73
RE Energy savings MWh	3,886	100,279	104,165	1,814	14,569	16,383
EE Energy savings MWh	304	76,069	82,152	314	1,598	2,311
Total Energy savings MWh	4,190	176,348	186,317	2,128	16,167	18,694

It follows from Table 16 that the project interventions in Jharkhand were replicated by a factor 30.1 and those in Manipur by a factor 8.3.

Status of achievement of the Project Objective is summarized in Table 17 below.

Table 18: Status of achievement of the Project Objective

Result	Objectively Verifiable Indicators	EOP Targets	Delivery Status at TE	Rating
Project goal: Reduced GHG emissions achieved through implementation of RE and EE solutions at the state level as identified in the SAPCCs	Cumulative CO2 emission reduced from start of project to End-Of-Project (EOP), (million tCO2e)	304,250	Cumulative -342,175.1 tCO2e Jharkhand – 313,013[16] tCO2e Manipur – 29,162[17] tCO2e	S
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	Total energy savings achieved from implemented RE and EE mitigation actions by EOP, MWh	190,452	Cumulative 205,011 MWh Jharkhand 186,317 MWh Manipur – 18,694 MWh	S
	Total installed capacity of RE systems (MW) by EOP	28	Cumulative Project - 46.6 MW Jharkhand – 38.84 MW Manipur – 7.74 MW	HS
	Number of people that benefitted directly or indirectly with improved energy access in the two states through the project interventions by the EOP (million). (This includes, improved job opportunity, quality of life and education.)	17.8	No data available	N.A.

It follows from the above Table that the project exceeded the EOP target in total installed RE capacity by 66% (46.6MW instead of the planned 28 MW of newly installed RE capacity). This was achieved through longer real implementation in Jharkhand. The total achieved GHG emission reductions exceeded the target by 12.5 %.

The project was instrumental in removing the barriers to effective implementation of the State-Level Climate Change Action Plans. Through a demonstrations of RE and EE solutions in a variety

[16] Based on the emission factor established in the Project Document for Jharkhand 1.68 tCO2/MWh.
[17] Based on the emission factor established in the Project Document for Manipur 1.56 tCO2/MWh.

of demand sectors, the project highlighted importance of relatively small RE/EE interventions and made the two state Governments aware of such options apart from large scale RE projects. It also helped to focus attention on energy efficiency interventions not only for GHG emission reductions but also for reducing energy demand.

The project has taken efforts for mobilisation of private finance and private sector involvement in adoption of RE and EE measures and ensured visible involvement of the private sector.

Based on the above findings, the overall achievement of the Project Objective is rated Satisfactory (S).

5.4. Efficiency

The main issues examined in relation to efficiency were the length of the project implementation period and to what extent the results have been achieved with the least costly GEF and other resources possible.

The Project was approved for implementation by the GEF CEO on for a period of 48 months. The Project Document was signed by the Government on 20 January 2016 that officially marked start of the project implementation. Therefore, the original closing date was January 2020. However, due to the delayed start of the project, extension of 6 months was granted. As a response to the COVID-19 crisis, GEF adopted a special policy granting a special extension of up to 6 months to all on-going projects. Consequently, the MT project duration was extended to almost 60 months with the new closing date 31 December 2020.

As explained in the previous sections, there were long delays at the start of the project due to the established procedure of project approval that requires UNDP to organize a Local Project Appraisal Committee (LPAC) chaired by the Department of Economic Affairs (DEA). The GoI signed the GEF-approved Project Document in January 2016 and reportedly later in the same year the project was submitted for LPAC consideration. However, the LPAC to consider the project was organized 14 months after the GoI signature in March 2017. As the LPAC considered the project was not sufficiently discussed with all ministries with direct and indirect stakes, it requested to obtain clearances from several ministries. Specific clearance was required from the MDONER because of the Manipur project component.

The next LPAC, organized in November 2017, approved implementation of the Jharkhand component but, due to missing clearance from MDONER, put the Manipur component on hold. Even the 3rd LPAC in July 2018 did not resolve the issue as the Committee required a political clearance for the Manipur component from the Ministry of External Affairs (MEA). It took another 9 months until March 2019 to obtain this clearance but as a follow-up DEA required a clearance from NITI Aayog. The approval for the Manipur component was finally given in May 2019.

In summary, the procedure from the official signature of the Project Document to obtaining all required clearances for the Jharkhand component took 21 months (January 2016 – November

2017) and completion of all mandatory procedures for the Manipur component required 40 months (January 2016 – May 2019), almost the full original planned duration of the project.

Although a number of letters had reportedly been sent from UNDP to MoEFCC to accelerate the mandatory procedures for starting of the project implementation, the clearance procedures were much longer than expected due to slow reaction of multiple national institutions. It appears that there is not much UNDP as the GEF Project Agency can do to expedite the mandatory clearance procedures.

Thanks to early establishment of the central and state PMUs, the project team in cooperation with the state-level entities were able to identify the required activities, undertake consultations with relevant stakeholders and launch activities under Component 1 in the 1st year and under Component 2 in the 2nd year of the project. Consequently, the implementation proceeded smoothly and assessments and studies conducted in parallel in both states during the 'waiting period' were readily available for commencement of demonstration investment activities. Thanks to experience and documents prepared under the Jharkhand component, the project team could launch the activities in Manipur immediately after the final approval for the Manipur component was granted.

Regarding the efficient use of project funds, the evaluation team noted that the allocated budget for project management was not exceeded despite the extended duration of the project. This was achieved partially due to the fact that the RE/EE technical experts in the state-level PMUs were not in place for the entire project period hence the two PMUs operated in a reduced format. Nevertheless, the project has achieved a majority of the planned results.

Based on the above findings, the efficiency in terms of the project timeline and the use of resources is rated **Moderately Satisfactory (MS).**

5.5. Country ownership

In order to examine country ownership, GEF evaluations are required to find evidence that the project fits within stated sector development priorities, and also that outputs, have been developed with involvement of an array of stakeholders and adopted into national strategies, policies and legal codes.

As discussed under the section Relevance above, the project has clear and direct linkages to the NAPCC as well as to the state-level action plans for support to implementation of specific energy efficiency and renewable energy climate change mitigation measures identified in the respective SAPCCs of the Jharkhand and Manipur states.

Throughout the implementation, the project engaged with the two state nodal agencies, state-level distribution companies, urban local bodies, private sector equipment vendors and suppliers, consulting companies specialized in energy auditing, education institutions and other stakeholders from urban and rural communities.

A confirmation of strong ownership of the project at the level of the two states is the fact that the two states have mobilized almost 23 million US$ in parallel financing from a variety of sources

through funding convergence for various subsidy schemes for RE/EE investments. In-kind support and extensive uptake of replication projects by municipalities, health care facilities, schools, as well as farmers further confirmed this commitment to the project results. However, such ownership is less visible at the national level where relevant entities of the central Government such as MoEFCC, MNRE and BEE will have to take more proactive approaches for replication of the pilots in other states.

5.6. Mainstreaming

The focus of this section is to discuss to what extent was the project mainstreaming UNDP priorities such as poverty alleviation, improved governance, and women's empowerment**,** i.e. whether it is possible to identify and define positive or negative effects of the project on local populations**,** whether gender issues had been taken into account in project design and implementation and in what way has the project contributed to greater consideration of gender aspects.

The project had been developed in parallel with development of the respective policies and strategies for gender mainstreaming of the GEF[18] and [19]UNDP that express commitment to enhancing the degree to which the GEF and its implementing agencies promote the goal of gender equality through GEF-funded projects. As the PIF was approved in March 2014, no gender analysis and action plan were prepared for the Project Document.

Although advancing gender equality had not been specifically mainstreamed in the project preparation and implementation, some of the project interventions helped to ascertain greater decision-making role of women especially in cases of RE measures integrated with livelihood activities.

These interventions helped in revenue growth and positively impacted the confidence of nearly 200 women associated with these self-help groups (SHGs). In order to upscale some of these activities, the MT project engaged with the Jharkhand Livelihood Promotion Society (JSLPS) that works as a nodal agency for effective implementation of the National Rural Livelihood Mission (NRLM) Project in the state. Based on the demonstration supported by the MT project, JSLPS decided to co-power all its agriculture micro/mini enterprises by solar PV in a phased manner. This initiative is going to cover nearly 200 such enterprises in about 1,800 villages across the state with involvement of almost 200,000 women.

The MT project had commendable focus on poverty alleviation through engagement with the social enterprise Life Education and Development Support (LEADS) working with Farmer Producing Organizations (FPOs) and other SHGs for community livelihood improvement projects. The MT project interventions were integrated into the LEADS Rural Access to Clean Energy (RACE) programme that focuses on strengthening the organizational capacities of local Civil

[18] Policy on Gender Mainstreaming, Global Environmental Facility, 2012
[19] Gender Equality Strategy, 2014-2017, UNDP 2014

Society Organizations (CSOs) in the area of clean energy. This initiative is also demonstration of the UNDP rights-based approach facilitating development of clean energy solutions for duty bearers, i.e. poor, vulnerable and marginalized groups in 4 districts of Jharkhand.

A concrete example of the gender focus the MT project support for local women led SHGs to utilize RE technologies with the existing micro enterprises. The intervention focused on improving the energy access for micro/mini enterprises, many managed by women and included establishment of a RTS plants equipped to power the following facilities:

a) solar powered cold room in Mandi village

b) solar powered units for processing and packaging of agricultural products (chilli, ragi, millet) in Ramgarh

c) solar powered manufacturing unit equipped with 10 sewing machines for production of face masks and sanitary pads in Khunti village

d) 4 rooftop solar projects in partnership with SEVA-Manipur for production of face masks during the COID-19 pandemic, with support of 10 women SHGs.

In addition, women farmers were supported in Jharkhand for obtaining a solar water pump.

The MT project financed and installed the RTS plants while all other expenses were covered by the partners. The above facilities solved the challenge of intermittent power delivery and enabled the beneficiary SHGs to fully realize livelihood opportunities. The operating model of the facilities is based on partnership share so workers earns shares for the production that are transferred into daily earnings INR 300-400 per working member.

Although the decision to provide assistance to the rural communities proves social inclusiveness of the project, the aspect of mainstreaming of women and marginalized communities was not followed thoroughly in the project implementation. Some information on involvement of women in the project was available, for example the PIRs reported in some cases on involvement of females in capacity building activities. However, such reporting was more *ad-hoc* as PMU did not systematically collect gender-disaggregated data on various activities.

It is recognized that gender equality and the empowerment of women and their access to sustainable energy have a significant positive impact on sustainable economic growth and inclusive social development, which are key drivers of poverty alleviation and social progress. Due to different roles, perception and opportunities for men and women in contributing to and benefiting from energy-efficient technologies, it is important to ensure that gender relations are taken into consideration in future RE and EE interventions.

5.7. Sustainability

Sustainability of the project is judged by the commitment of the beneficiary country to continue and replicate the project activities beyond the project completion date. The evaluation identifies key risks to sustainability and explains how these risks may affect continuation of the project

benefits after the project closes. The assessment covers institutional/governance risks, financial, socio-political, and environmental risks.

Institutional framework and governance:

The institutional sustainability is embedded in the involvement of the two nodal agencies, JREDA and MANIREDA, their affiliation with the two state governments (e.g. the Department of Energy in Jharkhand, and the Department of Power in Manipur). The political leadership coupled with a requisite alignment of national and local policies enables the two agencies to serve as the state-level hubs for promotion and deployment of RE and EE measures.

Based on the above, the institutional framework and governance sustainability is rated: **Likely (L).**

Financial sustainability: The financial sustainability is judged by the commitment of the project stakeholders for continued support for sustaining the already realized project benefits and their extension to new set of appliances.

Financing is an important factor for the overall sustainability of the MT project results as availability of funding will be critical for the continued involvement of the state government, public sector agencies and private sector investors. The project was quite successful in mobilization of external funding in both states for replications and scaleups of initial demonstration projects. However, this success was achieved through convergence of funding for subsidy-based programmes where the MT project funding was included as part of the subsidy schemes.

Although the project supported identification and evaluation of several available financing options for implementation of RE and EE measures in various demand sectors, very few non-grant financing instruments have been put into operation for increased access to low-cost financing of RE/EE investments.

Limited amount of debt-financing for RTS and EE investment projects thus continues to be a barrier due to several factors, in particular limited knowledge, understanding and awareness of the opportunities and risks for lending, particularly in the RE market segment. The limitations included high lender's cost of due diligence due to the small size and scattered locations of RTS projects, poor credit rating of potential RTS customers and high-interest rates for loan funding from domestic financial sources. The MTR report for this project pointed out that the way forward is awareness and training programmes for financial institutions including private and public banks, and non-banking financial institutions. Three credit have been operationalised across CNI segment and institutional sector:

1. State Bank of India (financing World Bank line of credit)
2. Punjab National Bank (financing World Bank line of credit)
3. Small Industries Development Bank of India (credit line for financing RTS implementation in MSME segment)

4. Small Industries Development Bank of India (credit line for implementing EE and technology upgrade measures for MSME units).

A dedicated assignment has been commissioned in Jharkhand for supporting CNI segment and private institutions in securing dedicated finance for RTS implementation and financing both RE and EE interventions across the MSME segment.

Specific credit line from state cooperatives wasmobilised for financing of 51 e-vehicles (out of total 65) in Manipur.

Based on the above, financial sustainability of the project is rated **Likely (L).**

Socio-political sustainability: The main socio-political risks to sustainability of the project results arise from conditions outside the project such as potential future economic disruptions with impact on the project beneficiary sectors in India. However, the risk arising from such external factors is low due to high acceptance of the RE and EE interventions that has been proven through deployment of RTS across over 60 private educational institutions in both states, creation of smart livelihood centres in Jharkhand and solarisation of more than 50 community centres in Manipur, as well as successful launch of the e-mobility scheme in Manipur. Sustainability is ensured through linking the RE solutions with income generating activities and through partnering with SHGs such as farmers and crop processors, and community cooperatives, ensuring equitable and inclusive distribution of the benefits offered by the RE solutions in the target communities.

Establishment of the RE knowledge park in Manipur is a specific example of promotion of socio-economic sustainability as it showcases usage of various RE -based technologies and solutions for wider adoption. In promotion of RE and EE solutions, it is important to enforce technical standards and certifications so that installed units, components, installation practices, and maintenance procedures are all sufficient to ensure reliable system operation.

Based on the above, socio-political sustainability of the project is rated **Likely (L).**

Environmental sustainability: The project generates a positive environmental effect through promotion and facilitation of RE and EE solutions for savings of energy and reduction of GHG emissions. The positive environmental effects are summarized under the Progress to Objective above.

Based on the above, the environmental sustainability is rated **Likely (L).**

As the overall rating of sustainability can't be higher than the lowest rating of any of the four sustainability criteria above, the overall rating of sustainability is **Moderately Likely (L).**

5.8. Exit strategy

An exit strategy is explicitly linked to sustainability in that it considers means of ensuring sustainability of the project achievements after the end of the technical and financial support by the donor. A sound exit strategy should be planned early in the project implementation and should

be based on established partnerships and local linkages, on developed local organizational and human capacities and on mobilization of local and external resources.

At the operational closure, the project does not have a written exit strategy as a concise document outlining steps and activities to ensure sustainable management of the achieved results by the project stakeholders after the end of the donor support.

The summary of ratings of the mandatory evaluation criteria is in the Table 16 below.

Table 19: Overall Project Rating

Evaluation Criteria	Evaluators' Rating
Monitoring and evaluation: design at entry	Satisfactory (S)
Monitoring and evaluation: implementation	Moderately Satisfactory (MS)
Overall quality of monitoring and evaluation	**Moderately Satisfactory (MS)**
Quality of UNDP Implementation	Moderately Satisfactory (MS)
Quality of Execution - Executing Agency	Moderately Satisfactory (MS)
Overall quality implementation / execution	**Moderately Satisfactory (MS)**
Relevance	**Relevant**
Effectiveness	
Outcome 1	Satisfactory (S)
Outcome 2	Satisfactory (S)
Outcome 3	Satisfactory (S)
Efficiency	**Moderately Satisfactory (MS)**
Overall Project Objective rating	**Satisfactory (S)**
Overall likelihood of sustainability	**Likely (L)**
Institutional framework and governance	Likely (L)
Financial	Likely (L)
Socio-political	Likely (L)
Environmental	Likely (L)

6. CONCLUSIONS AND RECOMMENDATIONS

This section contains conclusions as judgements based on the findings provided in the previous section. A short summary of relevant finding precedes each conclusion that is followed by a recommendation as a corrective action proposed to be taken by relevant project stakeholders to address the deficiencies identified in the findings and conclusions.

This Terminal Evaluation makes two types of recommendations. Recommendations on substantive matters are provided for consideration of the national project partners in order to ensure the project results are consolidated and sustained by relevant project stakeholders. These recommendations are suggested for implementation as soon as possible using the existing institutional capacities and frameworks that have been created by the current project.

The implementation experience from the MT project allows that some conclusions could be generalized for all UNDP programming areas. Recommendations of this type are provided for consideration of UNDP in order to improve the project design in general.

Recommendations for the design, implementation, monitoring and evaluation of the project

Conclusion 1: Despite consultations with an array of stakeholders in the preparatory phase of the MT project, insufficient attention was given to mandatory administrative procedures for approval and clearance of the project at the level of the national Government.

Recommendation 1: For preparation of future projects with implementation focus at the state level, UNDP CO should ensure that all mandatory procedures for project approval and clearance are identified and thoroughly discussed with relevant entities of the national Government.

Conclusion 2: The complexity of the approval process for the project caused considerable delays at the beginning of the project implementation.

Recommendation 2: UNDP CO in cooperation with the Government of India should consider streamlining of the approval process for the UNDP-implemented GEF-funded projects. In particular, the LPAC for approval of the projects should be organized within 3 months after approval of the projects for implementation by the GEF CEO.

Conclusion 3: Deviations from the project management arrangements stipulated in the Project Document contributed to delays in the project implementation.

Recommendation 3: For implementation of GEF-funded projects, UNDP CO in cooperation with MoEFCC should strictly adhere to the management arrangements outlined in the Project Document, including organization of the Inception Workshop within 3 months of the ProDoc signature and regular meetings of the PSC.

Conclusion 4: Although the MT project was supposed to facilitate shift towards market-based solutions, the project focussed mostly on creation of institutional frameworks and building technical capacities for RE/EE solutions. There focus on financial intermediaries was only marginal and caused that the project did not facilitate the required move from grant-based financing to market-based financing solutions.

Recommendation 4: UNDP CO should ensure that projects on transformation to market-based solutions contain sizeable component for capacity building of financial institutions.

Actions to follow up or reinforce initial benefits from the project

Conclusion 5: The MT project was expected to have a transformative impact on the RE and EE markets in India. Despite identification and evaluation of several available financial mechanisms, replication and upscaling of the pilot demonstration projects was grants-based and the project moved to establishment of few sustainable market-based financial mechanisms with involvement of the banking sector.

Recommendation 5: MoEFCC in cooperation with the state nodal agencies JREDA and MANIREDA should intensify engagement with the national and state-level financial institutions in order to lower their risk perception for financing RE and EE projects and leverage additional private sector and commercial bank funds for replication and upscaling of the RE and EE solutions developed by the MT project.

Conclusion 6: Development of knowledge products including a web-based portal is essential for replication and upscaling of the demonstrated RE/EE solutions and further adoption of relevant products and services by various energy demand segments, in particular MSMEs.

Recommendation 6: MoEFCC, MNRE and the two project nodal agencies should consider establishment of a comprehensive web information portal on RE/EE with all relevant information like case studies and reports, vendor information, subsidy information, initiatives by different IDA's, initiatives in the two states including success stories as well as shortcomings.

Proposals for future directions underlining main objectives

Conclusion 7: For obtaining government subsidy for a RE/EE investments, owners of the projects are obliged to implement the project through a state entity. This requirement many times results in poor quality of the project implementation.

Recommendation 7: The national and state governments should consider options for implementation of investment projects through private intermediaries.

Conclusion 8: The project results have a potential for replication to other states in India. The replication pathway was not clearly defined in the Project Document.

Recommendation 8: The Government should encourage national institutions, in particular MNRE and BEE, to assume active role in replication of the MT project results to other states.

6.1. Lessons learned and best practices related to project performance and sustainability

Awareness and information campaigns targeting private sector companies and financial intermediaries are of paramount importance for projects on removal of financial barriers to development of markets. There are direct financial benefits from energy savings and indirect reputational benefits from reduction of GHG emissions. Good understanding of the direct as well as indirect benefits associated with RE and EE investments by the private and financial sectors could serve as a key driver towards development of markets in relevant RE and EE goods and services.

There are also special lessons learned from the experience with the remote modality for this evaluation. The Covid-19 pandemic has put some constraints on the evaluative activities, in particular to conduct field mission for data collection and limited possibilities for triangulation of results obtained during desk reviews through observation and direct contact with project stakeholders and beneficiaries.

In a normal situation, it is usually possible to organize all planned face-to-face meetings with project stakeholders and beneficiaries during a period of a standard one-week field mission of an international consultant. The remote conduct of this evaluation proved to be more demanding for timely organization of the planned meetings as some stakeholders felt more freedom of choice that resulted in postponement of some interviews and few of the stakeholders even refused to have a virtual meeting with the evaluation team. Active involvement of UNDP CO proved to be an important factor for organization of virtual meetings as the UN office can more easily convince national stakeholders and beneficiaries to adhere to the planned schedule of meetings with the evaluation team.

Annex 1: Evaluation Terms of Reference

Background

In accordance with UNDP and GEF M&E policies and procedures, all full and medium-sized UNDP support GEF financed projects are required to undergo a terminal evaluation upon completion of implementation. These terms of reference (TOR) sets out the expectations for a Terminal Evaluation (TE) of the Market Transformation and Removal of Barriers for Effective Implementation of the State Level Climate Change Action Plans (PIMS #4606).

The essentials of the project to be evaluated are as follows:

Project Summary Table

<table>
<tr><td>Project Title:</td><td colspan="5">Terminal Evaluation (TE) of the Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans</td></tr>
<tr><td colspan="2">GEF Project ID:</td><td>85842</td><td></td><td>at endorsement (US$)</td><td>at completion (US$)</td></tr>
<tr><td colspan="2">UNDP Project ID:</td><td>4606</td><td>GEF financing:</td><td>3,744,500</td><td>3,744,500</td></tr>
<tr><td colspan="2">Country:</td><td>India</td><td>IA/EA own:</td><td>500,000</td><td></td></tr>
<tr><td colspan="2">Region:</td><td>Asia</td><td>Government:</td><td>12,588,745</td><td></td></tr>
<tr><td colspan="2">Focal Area:</td><td>Climate Change</td><td>Other:</td><td>5,242,300 – Jharkhand
6,668,955 – Manipur</td><td></td></tr>
<tr><td colspan="2">FA Objectives, (OP/SP):</td><td>CCM-3</td><td>Total co-financing:</td><td>25,000,000</td><td></td></tr>
<tr><td colspan="2">Executing Agency:</td><td>Ministry of Environment, Forests & Climate Change (MOEFCC)</td><td>Total Project Cost:</td><td>28,744,500</td><td></td></tr>
<tr><td colspan="2" rowspan="2">Other Partners involved:</td><td rowspan="2"></td><td colspan="2">ProDoc Signature (date project began):</td><td>20th January 2016</td></tr>
<tr><td>(Operational) Closing Date:</td><td>Proposed:
31st Dec 2019</td><td>Actual:
30th March 2021</td></tr>
</table>

Duties and Responsibilities

The goal of India SAPCC project is the reduction of GHG emissions achieved through implementation of RE and EE solutions at state level as identified in the State Action Plan on Climate Change of Jharkhand and Manipur states. This is to be achieved by removal of the key barriers that prevent effective implementation of SAPCC, with focus on RE and EE actions. The project was approved during GEF 5 programming cycle with a total budget of USD 3,744,500. The implementing partner of the projects is Ministry of Environment, Forests & Climate Change (MOEFCC).

The TE will be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the UNDP Evaluation Guidance for GEF Financed Projects.
The objectives of the evaluation are to assess the achievement of project results, and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.

Evaluation Criteria & Ratings

An assessment of project performance will be carried out, based against expectations set out in the Project Logical Framework/Results Framework, which provides performance and impact indicators for project implementation along with their corresponding means of verification. The evaluation will at a minimum cover the criteria of relevance, effectiveness, efficiency, sustainability and impact. Ratings must be provided on the following performance criteria. The completed table must be included in the evaluation executive summary.

Project Finance / Co-Finance

The Evaluation will assess the key financial aspects of the project, including the extent of co-financing planned and realized. Project cost and funding data will be required, including annual expenditures. Variances between planned and actual expenditures will need to be assessed and explained. Results from recent financial audits, as available, should be taken into consideration. The evaluator(s) will receive assistance from the Country Office (CO) and Project Team to obtain financial data in order to complete the co-financing table below, which will be included in the terminal evaluation report.

Co-financing (type/source)	UNDP own financing (mill. US$)		Government (mill. US$)		Partner Agency (mill. US$)		Total (mill. US$)	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants								
Loans/Concessions								
• In-kind support								
• Other								
Totals								

Evaluation Approach and Method

An overall approach and method[1] for conducting project terminal evaluations of UNDP supported GEF financed projects has developed over time. The evaluator is expected to frame the evaluation effort using the criteria of **relevance, effectiveness, efficiency, sustainability, and impact,** as defined and explained in the UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects. A set of questions covering each of these criteria have been drafted and are included with this TOR in **Annex C**. The evaluator is expected to amend, complete and submit this matrix as part of an evaluation inception report, and shall include it as an annex to the final report.
Considering the COVID outbreak evaluation will take place through virtual interviews.

[1] For additional information on methods, see the Handbook on Planning, Monitoring and Evaluating for Development Results, Chapter 7, pg. 163

Interviews will be held with the following organizations and individuals at a minimum:

1. Joint Secretory, MoEFCC
2. Director, MoEFCC
3. Director/ Project Director of Jharkhand Renewable Energy Development Agency
4. PCCF/APCCF Forest Department, Jharkhand
5. Director of Manipur Renewable Energy Development Agency
6. Director, Directorate of Environment and Climate Change, Manipur

The evaluator will review all relevant sources of information, such as the project document, project reports including Annual APR/PIR and other Reports, project budget revisions, midterm review, progress reports, GEF focal area tracking tools, project files, national strategic and legal documents, and any other material that the evaluator considers useful for this evidence-based assessment. A list of documents that the project team will provide to the evaluator for review is included in TOR Annex B of this Terms of Reference.
Methodological approaches may include the following:

- Evaluation should employ a combination of both qualitative and quantitative evaluation methods and instruments.
- **Document review of all relevant documentation.** This would include a review of inter alia
    - Project document (contribution agreement).
    - Theory of change and results framework.
    - Programme and project quality assurance reports.
    - Annual workplans.
    - Activity designs.
    - Consolidated quarterly and annual reports.
    - Results-oriented monitoring report.
    - Highlights of project board meetings.
    - Technical/financial monitoring reports.
- **Semi-structured interviews** with key stakeholders including key government counterparts, donor community members, representatives of key civil society organizations, UNCT members and implementing partners:
    - **Development of evaluation questions** around relevance, effectiveness, efficiency and sustainability and designed for different stakeholders to be interviewed.

- Key informant and focus group discussions with men and women, beneficiaries and stakeholders.
- All interviews should be undertaken in full confidence and anonymity. The final evaluation report should not assign specific comments to individuals.

- **Surveys and questionnaires** including participants in development programmes, UNCT members and/or surveys and questionnaires involving other stakeholders at strategic and programmatic levels.
- **Virtual meetings for** on-site validation of key tangible outputs and interventions.
- The evaluator is expected to follow a participatory and consultative approach that ensures close engagement with the evaluation managers, implementing partners and direct beneficiaries.
- **Other methods** such as outcome mapping, observational visits, group discussions, etc.
- **Data review and analysis** of monitoring and other data sources and methods.

Ensure maximum validity, reliability of data (quality) and promote use; the evaluation team will ensure triangulation of the various data sources.

Evaluation Products (Deliverables)

These products could include:

- **Evaluation inception report (10-15 pages).** The inception report should be carried out following and based on preliminary discussions with UNDP after the desk review, and should be produced before the evaluation starts (before any formal evaluation interviews, survey distribution or field visits) and prior to the country visit in the case of international evaluators.
- **Evaluation debriefings.** Immediately following an evaluation, UNDP may ask for a preliminary debriefing and findings.
- **Draft evaluation report (within an agreed length).**[2] The programme unit and key stakeholders in the evaluation should review the draft evaluation report and provide an amalgamated set of comments to the evaluator within an agreed period of time, addressing the content required (as agreed in the TOR and inception report) and quality criteria as outlined in these guidelines.
- **Evaluation report audit trail.** Comments and changes by the evaluator in response to the draft report should be retained by the evaluator to show how they have addressed comments.
- **Final evaluation report.**
- **Presentations to stakeholders and/or the evaluation reference group** (if requested in the TOR).
- **Evaluation brief and other knowledge products** or participation in knowledge-sharing events, if relevant.

Competencies

Evaluation Ethics

"This evaluation will be conducted in accordance with the principles outlined in the UNEG 'Ethical Guidelines for Evaluation'. The consultant must safeguard the rights and confidentiality of information providers, interviewees and stakeholders through measures to ensure compliance with legal and other relevant codes governing collection of data and reporting on data. The consultant must also ensure security of collected information before and after the evaluation and protocols to ensure anonymity and confidentiality of sources of information where that is expected. The information knowledge and data gathered in the evaluation process must also be solely used for the evaluation and not for other uses with the express authorization of UNDP and partners."

---

[2] A length of 40 to 60 pages including executive summary is suggested.

Implementation Arrangements

The principal responsibility for managing this evaluation resides with the UNDP CO in *India*. Due to COVID pandemic evaluation is proposed to be carried out through virtual meetings.

Time frame and payement schedule for the evaluation process

The total duration of the evaluation will be *14* days according to the following plan:
The evaluation team is expected to deliver the following:

Deliverable	Content	Timing	Responsibilities
Inception Report	Evaluator provides clarifications on timing and method	No later than 2 weeks before the evaluation mission.	Evaluator submits to UNDP CO
Presentation	Initial Findings	End of evaluation mission	To project management, UNDP CO
Draft Final Report	Full report, (per annexed template) with annexes	Within 3 weeks of the evaluation mission	Sent to CO, reviewed by RTA, PCU, GEF OFPs
Final Report*	Revised report	Within 1 week of receiving UNDP comments on draft	Sent to CO for uploading to UNDP ERC.

*When submitting the final evaluation report, the evaluator is required also to provide an 'audit trail', detailing how all received comments have (and have not) been addressed in the final evaluation report.

Activity	**Number of working days**	**Completion Da**
Preparation	*04* days (*recommended: 2-4)*	*10/2/2021*
Evaluation Mission (Virtual)	*5* days *(r: 7-15)*	*15/2/2021*
Draft Evaluation Report	*5* days *(r: 5-10)*	*25/2/2021*
Final Report	*2* days *(r: 1-2)*	*10/3/2021*

Required Skills and Experience

Evaluation Team Composition and required Competencies

The evaluation team will be composed of **one international and one national evaluator**. The consultants shall have prior experience in evaluating similar projects. Experience with GEF financed projects is an advantage. International evaluator will be designated as the team leader and will be responsible for finalizing the report. The evaluators selected should not have participated in the project preparation and/or implementation and should not have conflict of interest with project related activities.

Note: ***For the National consultant position a separate procurement notice is advertised.***

The selection of Consultant will be aimed at maximizing the overall "team" qualities in the following areas:

Educational Qualification & Experience:

S. No.	Technical Criteria	Marking (70)
1	Minimum *10* years of relevant professional experience with post graduate degree in engineering/ environment/ management or related filed domain	10 Marks
2	Previous experience of carrying out mid-term review/ terminal evaluation of GEF projects: 5 marks for each experience maximum up to 20 marks	20 Marks
3	Previous experience with results-based monitoring and evaluation methodologies.	20 Marks
4	Proven technical knowledge of solar PV system, rural livelihood and climate change and mitigation activities	20 Marks

Application submission process and criteria for selection

Individual consultants are invited to submit applications together with their CV for these positions. The application should contain a current and complete C.V. in English with indication of the e-mail and phone contact. Only shortlisted candidates will be requested to submit a price offer indicating the total cost of the assignment.

UNDP applies a fair and transparent selection process that will take into account the competencies/ skills of the applicants as well as their financial proposals. Qualified women and members of social minorities are encouraged to apply.

Technically qualified consultants will be requested to submit their daily fee rate i.e. consultants who score more than 70% i.e. 49 marks with respect to the above-mentioned evaluation criteria. **Consultant should not specify their consultancy fee on their CV or with the submission. The CV will not be evaluated further in case the consultant submits the same**.

The Consultant is required to submit the following documents, **in a single combined PDF file**, as the system has provision for uploading only one attachment:

- **Personal CV** and a Personal History Form (P11 form) **with relevant experience** to the TOR; and at least 3 professional references

- **Short technical proposal** (max 2-pages) including methodology, approach & assessment criteria, process followed, data collection and analytical tools.
- No Financials (Daily Fee) to be submitted at this stage.

Important Note: Please ensure that all the documents to be uploaded should be combined in a single PDF file before uploading as the system has provision of uploading only one document

Annex 2: Evaluation Matrix

Evaluative Criteria Questions	Indicators	Sources	Methodology
Relevance: How does the project relate to the main objectives of the GEF focal area, and to the environment and development priorities at the local, regional and national levels?			
• Does the project relate to the GEF Climate Change focal area and has it been designed to deliver global environmental benefits in line with relevant international climate change objectives?	• The project includes the relevant GEF outcomes, outputs and indicators • The project makes explicit links with global climate action goals	• Project Document • GEF-5 Focal Area Strategy	• Desk Review of Documents
• Is the project aligned to national development objectives, broadly, and to national energy efficiency priorities specifically?	• The project design includes explicit links (indicators, outputs, outcomes) to the national development policy/national energy policies	• Project Document • National development strategy, energy policies, etc.	• Desk Review of Documents
• Is the project's Theory of Change relevant to addressing the development challenge(s) identified?	• The Theory of Change clearly indicates how project interventions and projected results will contribute to the reduction of the three major barriers to low carbon development (Policy, institutional/ technical capacity and financial)	• Project Document • PIF	• Desk Review of Documents
• Does the project directly and adequately address the needs of beneficiaries at local and regional levels?	• The Theory of Change clearly identifies beneficiary groups and defines how their capabilities will be enhanced by the project	• Project Document • PIF	• Desk Review of Documents
• Is the project's results framework relevant to the development challenges have the planned results been achieved?	• The project indicators are SMART • Indicator baselines are clearly defined and milestones and targets are included	• Project Document • PIF	• Desk Review of Documents

	• The results framework is comprehensive and demonstrates systematic links to the theory of change		
• Have the relevant stakeholders been adequately identified and have their views, needs and rights been considered during design and implementation?	• The stakeholder mapping and associated engagement plan includes all relevant stakeholders and appropriate modalities for engagement. • Planning and implementation have been participatory and inclusive	• Project Document • Inception report • Stakeholder mapping/engagement plan and reporting • Quarterly Reports • Annual Reports (PIR)	• Desk Review of Documents • Stakeholder Interviews
• Have the interventions of the project been adequately considered in the context of other development activities being undertaken in the same or related thematic area?	• A partnership framework has been developed that incorporates parallel initiatives, key partners and identifies complementarities	• Project Document • Quarterly Reports • Annual Reports (PIR) • Stakeholder mapping/engagement plan and reporting	• Desk Review of Documents • Stakeholder Interviews
• Did the project design adequately identify, assess and design appropriate mitigation actions for the potential social and environmental risks posed by its interventions?	• The SES checklist was prepared and all reasonable risks were identified with appropriate impact and probability ratings and risk mitigation measures specified	• Project Document • SES Annex	• Desk Review of Documents
Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved?			
• Has the project achieved its output and outcome level targets?	• The project has met or exceeded the output and outcome indicator end-of-project targets	• Quarterly Reports	• Desk Review of Documents

			• Annual Reports (PIR) • Site visit/field reports	• Interviews with project team, stakeholders and beneficiaries
	• Have lessons learned been captured and integrated into project planning and implementation?	• Lessons learned have been captured periodically and/or at project end	• Validation Workshop Minutes *(if available)* • Quarterly Reports • Annual Reports (PIR)	• Desk Review of Documents • Interviews with project team, stakeholders and beneficiaries
	• Has the M&E plan been well-formulated, and has it served as an effective tool to support project implementation?	• The M&E plan has an adequate budget and was adequately funded • The logical framework was used during implementation as a management and M&E tool • There was compliance with the financial and narrative reporting requirements (timeliness and quality) • Monitoring and reporting has been at both the activity and results levels	• Project Document • M&E Plan • AWPs • FACE forms • Quarterly Narrative Reports • Site visit reports	• Desk Review of Documents • Interviews with project team and government stakeholders
	• Were relevant counterparts from the Government and civil society involved in project implementation, including as part of the Project Board?	• The Project Board participation included representatives from key project stakeholders	• Project Board Minutes *(if available)*	• Interviews with project staff, stakeholders and beneficiaries
	• How effective were the partnership arrangements under the project and to what extend did they contribute to achievements of the project results?	• A partnership framework has been developed that ensured coordination of parallel initiatives, involvement of key partners and identification of complementarities	• Annual Reports (PIR) • Quarterly reports	• Desk Review of Documents

			• Interviews with project team, stakeholders and other donors
• How well were risks (including those identified in the Social and Environmental Screening (SES) Checklist), assumptions and impact drivers being managed?	• A clearly defined risk identification, categorization and mitigation strategy (updated risk log in ATLAS)	• UNDP ATLAS Risk Log • M&E Reports	• Desk Review of Documents • Interviews with project team, stakeholders and beneficiaries
• Efficiency: Was the project implemented efficiently, in-line with international and national norms and standards?			
• Did the project adjust dynamically to reflect changing national priorities/external evaluations during implementation to ensure it remained relevant?	• The project demonstrated adaptive management and changes were integrated into project planning and implementation through adjustments to annual work plans, budgets and activities • Changes to AWP/Budget were made based on mid-term or other external evaluation • Any changes to the project's planned activities were approved by the Project Board • Any substantive changes (outcome-level changes) approved by the Project Board and donor, as required	• Annual Work Plans • Validation Workshop Minutes • Quarterly Reports • Annual Reports (PIR) • Project Board meeting minutes *(if available)*	• Desk Review of Documents • Interviews with project team stakeholders and beneficiaries
• Was the process of achieving results efficient? Did the actual or expected results (outputs and outcomes) justify the costs incurred? Were the resources effectively utilized?	• The project achieved the planned results in an efficient manner • Funds used for project implementation were utilized affectively and contributed to achievement of project results	• Annual Workplans • Quarterly Reports • Project document	• Desk Review of Documents • Interviews with project team, stakeholders, beneficiaries

	• What were the strengths and weaknesses of the implementation modality?	• The project implementation followed the division of responsibilities between the project implementing partners in an efficient manner	• Annual Reports (PIR) • Quarterly reports	• Desk Review of Documents • Interviews with project team, stakeholders, beneficiaries
	• Was co-financing adequately estimated during project design (sources, type, value, relevance), effectively tracked during implementation? Which were the reasons for any differences between expected and realised co-financing?	• Co-financing was realized in keeping with original estimates • Co-financing was tracked continuously throughout the project lifecycle and deviations identified and alternative sources identified • Co-financiers were actively engaged throughout project implementation	• Annual Work Plans (AWPs) • Validation Workshop Minutes *(if available)* • Quarterly Reports, including financial reports • Annual Reports (PIR)	• Desk Review of Documents • Interviews with project team stakeholders, other donors and beneficiaries
	• Was the level of implementation support provided by UNDP adequate and in keeping with the implementation modality and any related agreements?	• Technical support to the Executing Agency and project team were timely and of acceptable quality. • Management inputs and processes, including budgeting and procurement, were adequate	• UNDP project support documents (emails, procurement/ recruitment documents) • Quarterly Reports • Annual Reports (PIR)	• Desk Review of Documents • Interviews with project team, UNDP personnel
	• Were financial audit/spot check findings adequately addressed and relevant changes made to improve financial management?	• Appropriate management responses and associated actions were taken in response to audit/spot check findings. • Successive audits demonstrated improvements in financial management practices	• Project Audit Reports (if available)	• Desk Review of Documents

• Sustainability: To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results?			
• Are there political, social or financial risks that may jeopardize the sustainability of project outcomes?	• The exit strategy includes explicit interventions to ensure sustainability of relevant activities	• Program Framework Document • Risk Log	• Desk Review of Documents
• What are the factors that will require attention in order to improve prospects of sustainability and potential for replication?	• The exit strategy includes explicit interventions to ensure sustainability of relevant activities and identifies relevant factors requiring attention in the future	• Program Framework Document	• Desk Review of Documents
• Do the legal frameworks, policies, and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits?	• The exit strategy identifies relevant socio-political risks and includes explicit interventions to mitigate same	• Program Framework Document • Risk Log	• Desk Review of Documents
• Have key stakeholders identified their interest in project benefits beyond project-end and accepted responsibility for ensuring that project benefits continue to flow?	• Key stakeholders are assigned specific, agreed roles and responsibilities outlined in the exit strategy	• Program Framework Document • Risk Log	• Desk Review of Documents
• Are there ongoing activities that may pose an environmental threat to the sustainability of project outcomes?	• The exit strategy identifies relevant environmental risks and includes explicit interventions to mitigate same	• Program Framework Document • Risk Log	• Desk Review of Documents
Impact: Are there indications that the project has contributed to, or enabled progress toward, reduced environmental stress and/or improved ecological status?			
• Are there verifiable improvements in ecological status, or reductions in ecological stress, that can be linked directly to project interventions?	• The project has contributed directly to improved ecological conditions, including through reduced GHG emissions for energy generation	• Quarterly Reports • Annual Reports (PIR)	• Desk Review of Documents

CROSS-CUTTING ISSUES: PROMOTION OF UN VALUES FROM A HUMAN DEVELOPMENT PERSPECTIVE			
Evaluation Questions	**Indicators**	**Sources**	**Methodology**
Supporting policy dialogue on human development issues			
• To what extent did the initiative support the government in monitoring achievement of MDGs? • What assistance has the initiative provided supported the government in promoting human development approach and monitoring MDGs? • To what extent do the project objectives conform to agreed priorities in the UNDP country programme document (CPD) and UNDAF?	• Level of contribution of the project to the achievement of MDGs • Level of alignment of the project objectives with the CPD and UNDAF	• Project documents • Evaluation reports • HDR reports • MDG reports • National Planning Commission • Ministry of Finance	• Interviews with government partners • Desk review of secondary data
Contribution to gender equality			
• To what extent was the UNDP initiative designed to appropriately incorporate in each outcome area contributions to attainment of gender equality? • To what extent did UNDP support positive changes in terms of gender equality and were there any unintended effects? • Provide example(s) of how the initiative contributes to gender equality. • Can results of the programme be disaggregated by sex?	• Level and quality of monitoring of gender related issues	• Project documents • Evaluation reports • UNDP staff • Government partners • Beneficiaries	• Interviews with UNDP staff and government partners • Observations from field visits • Desk review of secondary data
Addressing equity issues (social inclusion)			

	• How did the UNDP initiative take into account the plight and needs of vulnerable and disadvantaged to promote social equity, for example, women, youth, disabled persons? • To what extent have indigenous peoples, women, conflict-displaced peoples, and other stakeholders been involved in pro- ject design? • Provide example(s) of how the initiative takes into account the needs of vulnerable and dis- advantaged groups, for example, women, youth, disabled persons • How has UNDP programmed social inclusion into the initiative?	• Level and quality of monitoring of social inclusion related issues	Project documents Evaluation reports UNDP staff Government partners • Beneficiaries	• Interviews with UNDP staff and government partners • Observations from field visits • Desk review of secondary data

Annex 3: List of People Interviewed

Name	Organization	Role in the project
Preeti Soni	UNDP CO	Chief - Climate Change, Resilience and Energy
Saba Kalam	UNDP CO	Project Focal Point
Dr. Palleria	MoEFCC	Scientist
Sunil Shekher	MT Project	National Project Manager
Suvra Majumdar	MT Project	State Project Manager - Jharkhand
Goutam Banik	MT Project	State Project Manager - Manipur
Nilesh Kumar	JREDA	Manager and State PMU Supervisor
Babita Thanjum	MANIREDA	Programme Officer
T. Brajakumar Singh	DoE&CC, Manipur	Joint Director
Biyani	Raj Ceramics	Owner
Mahendra Kumar	LEADS	Representative

Annex 4: List of Documents Consulted

1. Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans, Project Document, UNDP/GEF 2015
2. Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans, Inception Report, UNDP 2017
3. Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans, MTR Report, UNDP 2019
4. Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans, Inception Report, UNDP 2017
5. Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans, MTR Report, UNDP 2019
6. Annual Project Implementation Reviews (PIRs), UNDP/GEF, 2018-2020
7. Combined Delivery Reports (CDRs), UNDP, 2016-2020
8. Jharkhand Action Plan on Climate Change, Government of Jharkhand, 2014
9. Manipur State Action Plan on Climate Change, Government of Manipur, 2013
10. India UNDAF 2013-2017, UNDP, 2012
11. Sustainable Development Framework 2018-2022, GoI and UNDP, 2017
12. PSC Meeting Minutes, UNDP, 2019
13. GEF Evaluation Policy, GEF IEO, 2019
14. UNDP Revised Evaluation Policy, UNDP, 2019
15. Guidelines for GEF Agencies in Conducting Terminal Evaluation for Full-sized Projects, GEF, 2017
16. UNDP Evaluation Guidelines, Independent Evaluation Office of UNDP, 2019
17. Project-level Evaluation: UNDP Evaluation Guidance for GEF Financed Projects, UNDP, 2012
18. Outcome-Level Evaluations, A Companion Guide, UNDP, 2011
19. Glossary of Key Terms in Evaluation and Results Based Management, OECD, 2010
20. Ethical Guidelines for Evaluations, UNEG, 2008
21. Project-level Evaluation: UNDP Evaluation Guidance for GEF Financed Projects, UNDP, 2012
22. Outcome-Level Evaluations, A Companion Guide, UNDP, 2011
23. Glossary of Key Terms in Evaluation and Results Based Management, OECD, 2010
24. Ethical Guidelines for Evaluations, UNEG, 2008

Annex 5: Project Stakeholder Map from the Project Document

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 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.
Government – State Level	
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	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

Stakeholder	Role in Project Implementation
Commissions (SERCs) and State electricity	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, 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)	The GEF project agency for the proposed project to ensure that the project will deliver its objectives and carry out monitoring & evaluation, and facilitate the budgetary provisions.
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 supplying the related equipment for the project
CSO and NGOs	
Civil Society Organizations	Expected to generate ownership among identified stakeholders for the implementation of selected RE and EE interventions
Academic and Research Institutes	
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

Annex 6: Project Results Framework (at the Project Inception)

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 CO2eq avoided

Strategy	Objectively Verifiable Indicators			Means of Verification	Critical Assumptions
	Description	**Baseline**	**Target**		
Project goal: Reduced GHG emissions achieved through implementation of RE and EE solutions at the state level as identified in the SAPCCs	Cumulative CO2 emission reduced from start of project to End-Of-Project (EOP), (million tCO2e)	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
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	Total energy savings achieved from implemented RE and EE mitigation actions by EOP, MWh Total installed capacity of RE systems (MW) by EOP Number of people that benefitted directly or indirectly with improved energy access in the two states through the project interventions by the EOP (million). (This includes, improved job opportunity, quality of life and education.)	0 0 0	190,452 28 17.8	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
Component 1: Framework for the implementation of climate change mitigation options in the selected states SAPCCs					
Outcome 1: 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 adopts the developed diligent data collection and MRV systems
Output 1.2: 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
Output 1.3: 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 investments for implementation of selected RE and EE mitigation 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	Continued support and participation from state agencies and ministries at national level. Enough technical and financial capacity available in the state for implementation of projects
Output 2.1: 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 supportive of implementing the selected RE and EE actions
Output 2.2: 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 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/EE mitigation actions by co-financing institutions and public and private sector
Output 2.4: Established public private partnerships (PPP) for implementation and scaling up of selected RE and EE actions in Manipur and Jharkhand	Number of replication projects on the selected RE and EE mitigation actions implemented by EOP No. of PPP business models developed by Year 3	0 0	32 9	Project assessment reports Comparative assessment report of PPP business models for RE and EE implementation	Continued interest in the selected RE/EE mitigation actions by co-financing institutions and public and private sector All state agencies supportive of implementing the selected RE and EE actions
Output 2.5: Implemented nine RE and EE investment projects in Manipur and Jharkhand innovative financial models developed by end of year 1	No. of demonstration investment projects based on innovative financial models developed by end of year 1 No. of demo investment projects implemented by EOP	0 0	9 5	Performance assessment reports from investment projects M&E reports of the demonstration	All state agencies upportive of implementing the investment projects
Output 2.6: Completed implementation manual and workshops for supporting the implementation of selected public private partnership models for RE and EE actions	No. of implementation manuals developed by Year 3 (one manual for each state) No. of workshops conducted on sensitizing the state agencies on proposed models by Year 4	0 0	2 2	Implementation manuals Workshop proceedings	Continued support and participation of the state governments and workshop proceedings are approved by state nodal agencies
Component 3: Capacity development of concerned state level officials for implementation of respective SAPCC					
Output 3.1: Aligned state sectoral budgets for development plans to include climate change mitigation actions related expenses	Allotment of budget for climate change actions in departmental budgets by year 2	0	2	Review report	Continued support and participation from State agencies and sharing of state documents

Output 3.2: Completed training and capacity building programs on the developed MRV systems for the State officials	No. of handbooks and guidelines prepared for MRV system by year 3 No. of training undertaken on the new MRV system by EOP	0 0	2 5	Handbook and guidelines Training curricula and session reports	Continued support and participation from the state agencies Continued support and participation of the state agencies
Output 3.3: 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	Meeting reports	Interested state agencies in both states for inter-state exchange of information and technology
Output 3.4: Conducted inter-state study trips and stakeholder interaction workshops	No. of study trips undertaken by EOP No of workshops undertaken by EOP	0 0	4 4	Study trip reports Proceedings of the workshop	Continued support and participation from state nodal agencies Interested state agencies in both states for attending the workshops on RE and EE mitigation actions and market transformation strategies
Output 3.5: Established and operational information dissemination system on lessons learnt from investment projects undertaken on priority RE and EE actions.	No. of brochures, case study reports and other printed material published and disseminated by year 4 No of users of the system/year starting Year 4	0 0	10 2,500	Printed brochures, case study reports and other printed material Web portal Number of hits on the web site	Public and Private sector agencies take higher amount of interest in disseminating the learning's 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 7: Performance Rating of GEF Projects

The main dimensions of project performance on which ratings are provided in terminal evaluation are outcomes, sustainability, quality of monitoring and evaluation, quality of implementation, and quality of execution.

Outcome ratings

The overall ratings on the outcomes of the project will be based on performance of the criteria of relevance, effectiveness and efficiency. A six-point rating scale is used to assess overall outcomes.

Highly Satisfactory (HS)	Level of outcomes achieved clearly exceeds expectations and/or there were no short comings
Satisfactory (S)	Level of outcomes achieved was as expected and/or there were no or minor short comings
Moderately Satisfactory (MS)	Level of outcomes achieved more or less as expected and/or there were moderate short comings
Moderately Unsatisfactory (MU)	Level of outcomes achieved somewhat lower than expected and/or there were significant shortcomings
Unsatisfactory (U)	Level of outcomes achieved substantially lower than expected and/or there were major short comings
Highly Unsatisfactory (U)	Only a negligible level of outcomes achieved and/or there were severe short comings
Unable to Assess (UA)	The available information does not allow an assessment of the level of outcome achievements

Sustainability Ratings

The sustainability will be assessed taking into account the risks related to financial, sociopolitical, institutional, and environmental sustainability of project outcomes. The evaluator may also take other risks into account that may affect sustainability. The overall sustainability will be assessed using a four-point scale.

Likely (L)	There is little or no risks to sustainability
Moderately Likely (ML)	There are moderate risks to sustainability
Moderately Unlikely (MU)	There are significant risks to sustainability
Unlikely (U)	There are severe risks to sustainability
Unable to Assess (UA)	Unable to assess the expected incidence and magnitude of risks to sustainability

Monitoring and Evaluation Ratings

Quality of project M&E are assessed in terms of design and implementation on a six point scale:

Highly Satisfactory (HS)	There were no short comings and quality of M&E design / implementation exceeded expectations
Satisfactory (S)	There were no or minor short comings and quality of M&E design / implementation meets expectations
Moderately Satisfactory (MS)	There were some short comings and quality of M&E design/implementation more or less meets expectations
Moderately Unsatisfactory (MU)	There were significant shortcomings and quality of M&E design / implementation somewhat lower than expected
Unsatisfactory (U)	There were major short comings and quality of M&E design/implementation substantially lower than expected
Highly Unsatisfactory (U)	There were severe short comings in M&E design/ implementation
Unable to Assess (UA)	The available information does not allow an assessment of the quality of M&E design / implementation

Implementation and Execution Rating

Quality of implementation and of execution will be rated separately. Quality of implementation pertains to the role and responsibilities discharged by the GEF Agencies that have direct access to GEF resources. Quality of Execution pertains to the roles and responsibilities discharged by the country or regional counterparts that received GEF funds from the GEF Agencies and executed the funded activities on ground. The performance will be rated on a six-point scale.

Highly Satisfactory (HS)	There were no short comings and quality of implementation / execution exceeded expectations
Satisfactory (S)	There were no or minor short comings and quality of implementation / execution meets expectations
Moderately Satisfactory (MS)	There were some short comings and quality of implementation / execution more or less meets expectations
Moderately Unsatisfactory (MU)	There were significant shortcomings and quality of implementation / execution somewhat lower than expected
Unsatisfactory (U)	There were major short comings and quality of implementation / execution substantially lower than expected
Highly Unsatisfactory (U)	There were severe short comings in quality of implementation / execution
Unable to Assess (UA)	The available information does not allow an assessment of the quality of implementation / execution

Annex 8: Evaluation Report Outline

i. Opening page:

- Title of UNDP supported GEF financed project
- UNDP and GEF project ID#s.
- Evaluation time frame and date of evaluation report
- Region and countries included in the project
- GEF Operational Program/Strategic Program
- Implementing Partner and other project partners
- Evaluation team members
- Acknowledgements

ii. Executive Summary

- Project Summary Table
- Project Description (brief)
- Evaluation Rating Table
- Summary of conclusions, recommendations and lessons

iii. Acronyms and Abbreviations

1. Introduction

- Purpose of the evaluation
- Scope & Methodology
- Structure of the evaluation report

2. Project description and development context

- Project start and duration
- Problems that the project sought to address
- Immediate and development objectives of the project
- Baseline Indicators established
- Main stakeholders
- Expected Results

3. Findings

(In addition to a descriptive assessment, all criteria marked with (*) must be rated)

3.1 Project Design / Formulation

- Analysis of LFA/Results Framework (Project logic /strategy; Indicators)
- Assumptions and Risks
- Lessons from other relevant projects (e.g., same focal area) incorporated into project design
- Planned stakeholder participation
- Replication approach

- UNDP comparative advantage
- Linkages between project and other interventions within the sector
- Management arrangements

3.2 Project Implementation

- Adaptive management (changes to the project design and project outputs during implementation)
- Partnership arrangements (with relevant stakeholders involved in the country/region)
- Feedback from M&E activities used for adaptive management
- Project Finance:
- Monitoring and evaluation: design at entry and implementation (*)
- UNDP and Implementing Partner implementation / execution (*) coordination, and operational issues

3.3 Project Results

- Overall results (attainment of objectives) (*)
- Relevance (*)
- Effectiveness & Efficiency (*)
- Country ownership
- Mainstreaming
- Sustainability (*)
- Impact

4. Conclusions, Recommendations & Lessons

- Corrective actions for the design, implementation, monitoring and evaluation of the project
- Actions to follow up or reinforce initial benefits from the project
- Proposals for future directions underlining main objectives
- Best and worst practices in addressing issues relating to relevance, performance and success

5. Annexes

- ToR
- Itinerary
- List of persons interviewed
- Summary of field visits
- List of documents reviewed
- Evaluation Question Matrix
- Questionnaire used and summary of results
- Evaluation Consultant Agreement Form

Annex 9: Evaluation Consultant Agreement Forms

Agreement to abide by the Code of Conduct for Evaluation in the UN System

Evaluators:

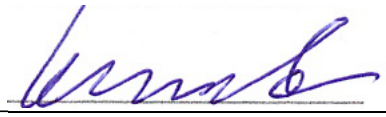
1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Name of Consultant: Dalibor Kysela

Name of Consultancy Organization (where relevant)**:** N.A.

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at Vienna 21 February 2021

Signature: 

Agreement to abide by the Code of Conduct for Evaluation in the UN System

Evaluators:

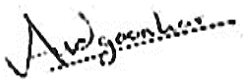
1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Name of Consultant: Ameya Subodh Udgaonkar

Name of Consultancy Organization (where relevant)**:** PwCPL

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at New Delhi February 2021



Signature: _____

Agreement to abide by the Code of Conduct for Evaluation in the UN System

Evaluators:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Name of Consultant:

Name of Consultancy Organization (where relevant)**:** _____N.A._____

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at

Signature: _____

Annex 10: Audit Trail – annexed as separate file

Annex 11: Evaluation Report Clearance Form

Evaluation Report Reviewed and Cleared by

UNDP Country Office

Name: Ruchi Pant

Signature: _____ Date: _____

UNDP GEF RTA

Name: Milou Beerepoot

Signature: _____ Date: 16 August 2021