



Project Implementation Report

(1 July 2022 – 30 June 2023)

Project Title:	Promoting Energy Efficiency and Renewable Energy in Selected Micro SME Clusters in India
GEF ID:	3553
UNIDO ID:	103029
GEF Replenishment Cycle:	<i>GEF-4</i>
Country(ies):	India
Region:	<i>SA - Southeast Asia</i>
GEF Focal Area:	<i>Climate Change Mitigation (CCM)</i>
Integrated Approach Pilot (IAP) Programs ¹ :	NA
Stand-alone / Child Project:	Stand-alone Project
Implementing Department/Division:	<i>ENE / ESI</i>
Co-Implementing Agency:	Not Applicable
Executing Agency(ies):	Bureau of Energy Efficiency (BEE)
Project Type:	<i>Full-Sized Project (FSP)</i>
Project Duration:	<i>60</i>
Extension(s):	<i>6</i>
GEF Project Financing:	USD 7,172,098
Agency Fee:	USD 727,000
Co-financing Amount:	USD 26,200,000
Date of CEO Endorsement/Approval:	2/1/2011
UNIDO Approval Date:	3/14/2011
Actual Implementation Start:	4/11/2011
Cumulative disbursement as of 30 June 2023:	USD 6,706,725.94

¹ Only for **GEF-6 projects**, if applicable

Mid-term Review (MTR) Date:	1/2/2018
Original Project Completion Date:	12/31/2015
Project Completion Date as reported in FY22:	12/31/2022
Current SAP Completion Date:	12/31/2022
Expected Project Completion Date:	12/31/2022
Expected Terminal Evaluation (TE) Date:	4/26/2023
Expected Financial Closure Date:	12/31/2023
UNIDO Project Manager²:	Sanjaya Shrestha

I. Brief description of project and status overview

Project Objective
<p>Project Objective:</p> <p>The project aims to develop and promote a market environment for introducing energy efficient (EE) technologies and enhancing the use of renewable energy (RE) technologies in process applications in 5 sectors (ceramic production, hand tool production, foundries, brass production, and dairy production). The project further envisions scaling up the activities to a national level in order to reduce energy use per unit of product, improve the productivity and competitiveness of units, thereby reducing the overall carbon emissions and improving the local environment.</p> <p>Project Components:</p> <p>The project has been working at cluster levels, as well as a policy level to achieve its aim. It has the following components:</p> <ul style="list-style-type: none"> • Increased capacity of suppliers of energy efficiency/renewable energy product suppliers/ service providers/ finance providers. • Increasing the level of end-user demand and implementation of energy efficiency and renewable energy technologies and practices by MSMEs. • Scaling up of the project to a national level and strengthening policy, institutional and decision-making frameworks • Desired Outcome of the Project: • Creating a scope for energy savings, by increasing the level of end-user demand and implementation of energy efficiency and renewable energy technologies and practices by MSMEs. • Encouraging the use of renewable energy in various industrial applications. • Improve the productivity and competitiveness of units. • Reduce overall carbon emissions and improve the local environment. <p>I. Annual GHG emission reduction (CO₂eq) - 84,700 tonnes saved per year as a direct result of this project</p>

² Person responsible for report content

- II. Cumulative GHG emission reduction (CO₂eq) - 1,270,500 tonnes saved over a 15 years lifetime of EE measures introduced
- III. Quantity of energy saved - 276,600 MWh per year as a direct result of this project
- IV. Volume of investments in EE/RE technologies-USD 16 million

Baseline

Under the baseline, investments in energy efficiency will be drastically limited within these sectors because of the lack of existing EE and RE technologies available in the market geared towards MSMEs. Because these technologies are not currently available, it is likely that only some level of best operating practices would be the indirect result of other projects geared towards energy efficiency in industry in India. It is estimated that among MSMEs where best-operating practices were identified as a potential source of saving, 20% would utilise these best practices.

Even if some of the investments materialize without GEF support, they are expected to take longer to be implemented (relative to the alternative scenario below, with GEF intervention). This would require investment by the local service providers or other entrepreneurs which is not currently expected.

Greenhouse gas reductions: The greenhouse gas reductions under the baseline scenario for the companies within the 5 sectors addressed in this programme would be approximately 3,900 tonnes of CO₂e per year – with reductions of 59,000 tonnes over a 15-year period.

Please refer to the explanatory note at the end of the document and select corresponding ratings for the current reporting period, i.e. FY23. Please also provide a short justification for the selected ratings for FY23.

In view of the GEF Secretariat's intent to start following the ability of projects to adopt the concept of adaptive management³, Agencies are expected to closely monitor changes that occur from year to year and demonstrate that they are not simply implementing plans but modifying them in response to developments and circumstances or understanding. In order to facilitate with this assessment, please introduce the ratings as reported in the previous reporting cycle, i.e. FY22, in the last column.

Overall Ratings ⁴	FY23	FY22
Global Environmental Objectives (GEOs) / Development Objectives (DOs) Rating	<i>Moderately Satisfactory (MS)</i>	<i>Moderately Satisfactory (MS)</i>
Implementation Progress (IP) Rating	<i>Satisfactory (S)</i>	<i>Satisfactory (S)</i>
<i>Using the progress rationale reported in section II, please briefly justify the selected FY23 IP ratings versus the IP ratings reported in FY22.</i>		

³ Adaptive management in the context of an intentional approach to decision-making and adjustments in response to new available information, evidence gathered from monitoring, evaluation or research, and experience acquired from implementation, to ensure that the goals of the activity are being reached efficiently

⁴ Please refer to the explanatory note at the end of the document and assure that the indicated ratings correspond to the narrative of the report

Overall Risk Rating	<i>Moderate Risk (M)</i>	<i>Moderate Risk (M)</i>

II. Targeted results and progress to-date

Please describe the progress made in achieving the outputs against key performance indicator's targets in the project's **M&E Plan/Log-Frame at the time of CEO Endorsement/Approval**. Please expand the table as needed.

Project Strategy	KPIs/Indicators	Target level	Progress in till date
Component 1: Increased capacity of suppliers of EE/RE product suppliers/ service providers/ finance providers			
Outcome 1: The capacity of suppliers of EE/RE product suppliers/service providers/finance providers to support the expansion of EE/RE in the clusters is increased			
Output 1.1: EE/RE technologies that are adjusted for local needs introduced to the local market in 5 energy intensive MSME sectors.	<ul style="list-style-type: none"> Detailed techno-economic studies at the unit (MSME) level to determine feasible options for EE and RE through improvements in technologies and operating practices. Adjustment of existing technologies for the introduction of at least 12 emerging/ improved EE/RE technologies and/or Best Operating Practices to be introduced. Documentation of the benefits (energy savings, quality improvement, GHG reduction etc.) in the demonstration and replication units (prepare one case study for each sector). At least 16 awareness workshops to showcase the results of technology demonstrations (conduct at least 2 awareness workshops per cluster in the Foundries and Brass clusters, and 2 total awareness workshops in each of the other sectors – Hand tools, Ceramics, and Dairy) 	<ul style="list-style-type: none"> Detailed techno-economic studies at the unit (MSME) level Introduction of at least 12 emerging/improved EE/RE technologies Documentation of the benefits (energy savings, quality improvement, GHG reduction etc.) At least 16 awareness workshops to showcase the results of technology demonstrations 	<ul style="list-style-type: none"> Identified more than 500 potential units in 12 clusters Conducted more than 300 walk-through audits Conducted around 150 Detailed Energy Audits (DEA) – (Cluster Leaders & Consultants) Developed more than 300 case studies Conducted 46 awareness workshops for knowledge dissemination in 12 clusters Identified 65 Energy Efficient Technologies across the clusters that are identified for replication within the clusters Around 1500 MSMEs directly benefitted from the project's activities, which included awareness workshops, capacity building and training programmes, inter-cluster visits and study tours. 770 of these MSMEs implemented a total of some 1876 energy efficiency and renewable energy measures. These MSMEs invested in total INR 2.53 billion (USD 31 million), and thereby achieve INR 1.46 billion (USD 18 million) annual savings, conserve 24,315 tons of oil equivalent (TOE) energy and avoid 147,326 tons of greenhouse gas (GHG) emissions. A project summary dialogue was held on 29th June 2022, at UN

Project Strategy	KPIs/Indicators	Target level	Progress in till date
			<p>Conference Hall, 55-Lodi Estate, New Delhi. The event was attended by Govt. officials, UNIDO officials, Consultants and MSME unit Owners.</p> <ul style="list-style-type: none"> 12 “Project knowledge sharing workshop on EE & RE technologies implemented in Cluster” were organized in MSME Clusters during Aug-Sep 2022. A National Conclave on Accelerating Energy Efficiency in Micro, Small and Medium Enterprises was organized on 9th December, 2022 and 2 Regional Conclaves were organized (Dairy & Foundry Sector). 16 technology demonstration workshops were organized- 04 workshops in Foundry sector (Coimbatore (2), Belgaum (2)), 04 workshops in the Dairy sector (Gujarat (2) Kerala (2)), 04 workshops in Ceramic sector (Thangadh (2) & Morbi (2)), 02 workshops in Hand Tool sector (Jalandhar (2)) and 02 workshops in the Brass sector (Jamnagar (2))
Output 1.2: Increased ability of Local Service Providers (EE and RE product and service suppliers) to provide assistance and advice to MSMEs within the sectors	<ul style="list-style-type: none"> 15 Local Service Providers/industry associations in 12 clusters identified for training and assistance in implementing the new technologies/Best Operating Practices. 200 Detailed Project Reports prepared for MSMEs by Local Service Providers in 12 clusters. 24 product and service providers operating in each cluster actively marketing EE/RE products. (up from 4 currently). 	<ul style="list-style-type: none"> 15 Local Service Providers/industry associations in 12 clusters 200 Detailed Project Reports 24 product and service providers operating 	<ul style="list-style-type: none"> 800 Local Service Providers (LSP's) were identified on Technologies and Equipment in 12 clusters Equipment-wise training modules were developed for training the Local Service Providers (LSP's). Conducted 38 capacity building training programmes and trained about 250 LSPs on latest technologies and equipment in 12 clusters Developed 245 Detailed Project Reports (120 Bankable DPRs by consultants and 125 DPRs by Cluster Leaders) on Energy Efficient technologies The project organized around 26 B2B Exhibitions and Vendor Interfacing events for 5 Sectors & 23 clusters.
Output 1.3: Increased ability of local industry associations to provide assistance and advice to MSMEs	<ul style="list-style-type: none"> Implementation of 12 “Energy Management Cells” within cluster-level industry associations/other 	<ul style="list-style-type: none"> Implementation of 12 “Energy Management Cells” 	<ul style="list-style-type: none"> Established an Energy Management Cell (EMC) at each of the 12 clusters. Each EMC was fully equipped with portable energy audit instruments and a

Project Strategy	KPIs/Indicators	Target level	Progress in till date
within the clusters with the establishment/enhancement of "Cluster level energy management cells".	<ul style="list-style-type: none"> cluster-level institutions for carrying out EE/RE assistance in their respective clusters. Needs assessments for these 12 institutions for the implementation of Energy Management Cells within them. Strengthening of these 12 "Energy Management Cells" by providing material support (energy audit tools) and soft support (knowledge and training) 	<ul style="list-style-type: none"> Needs assessments of 12 institutions for the implementation of EMC Strengthening of these 12 "Energy Management Cells" Templates and examples for the financial assessment 	<ul style="list-style-type: none"> cluster leader was appointed to head the EMC and regularly conduct energy audits and developed case studies to sensitize the industries in the cluster. Based on the success of EMCs in 12 MSME clusters, the project counterpart (BEE) set up 17 additional EMCs with State Designated Agencies (SDAs) in different states to help MSMEs to reduce their carbon footprint. Training for cluster leaders, Industry cluster association representatives and MSME unit personnel on handling energy audit instruments Project has developed a report on the business models for the Sustainability of EMCs.
Output 1.4: Enhanced financing opportunities for EE/RE projects and implementation measures.	<ul style="list-style-type: none"> Templates and examples for financial assessment of EE/RE projects developed for use in training and dissemination Banking/investor experts in 5 banks/financial institutions trained in the assessment of bankable projects and support mechanisms 	<ul style="list-style-type: none"> Templates and examples for the financial assessment Banking/investor experts in 5 banks/financial institutions training 	<ul style="list-style-type: none"> About 12 applications on different EE/RE projects were submitted for financial assistance to Banks which are yet to be approved. 15 training workshops were conducted for bankers and financial institution representatives. Training modules were developed on Energy Efficiency & Renewable Energy Technologies.
Component 2 – Increased end-use demand and implementation of EE and RE by MSMEs			
Outcome 2: The level of end-use demand and implementation of EE and RE technologies and practices by MSMEs in increased			
Output 2.1: Increased demand for EE/RE products/services and increased ability to apply for financing among the units in the 5-energy intensive MSME sectors for EE/RE technologies.	<ul style="list-style-type: none"> Ongoing awareness generation/ training programmes for entrepreneurs – at least 50 awareness workshops conducted to reach 1200 or more entrepreneurs as well as four national-level project conferences conducted. In consultation with industry associations, choosing MSMEs and implementing joint partnerships including adapted technologies 	<ul style="list-style-type: none"> Ongoing awareness generation/ training programmes for entrepreneurs at least 50 awareness workshops to reach 1200 participants 29 total Pilot Demo Projects 200 bankable Detailed Project Reports A total of 120 EE/RE projects implemented in the 12 clusters At least 100 applications for 	<ul style="list-style-type: none"> Two National workshops and one Stakeholder consultation meeting were organized. Organized 98 capacity building workshops for MSME enterprises on various aspects of energy efficiency in the 12 clusters with more than 2650 participants A project summary dialogue was held on 29th June 2022, at UN office which was attended by Govt. officials, UNIDO officials, Consultants and Industry cluster representatives. 12 "Project knowledge sharing workshop on EE & RE

Project Strategy	KPIs/Indicators	Target level	Progress in till date
	<p>and Best Operating Practices ("case studies") in each of the 5 sectors with local producers of EE/RE technologies (Local Service Providers) and MSMEs – 29 total projects implemented with handholding of these 29 units to ensure optimal deployment of improved technologies and to build confidence and capabilities.</p> <ul style="list-style-type: none"> The development of around 200 bankable Detailed Project Reports which can be used for investment decisions A total of 120 EE/RE measures implemented in the 12 clusters. At least 100 applications for financial assistance (loan/investments) submitted by MSMEs with 36 additional funded 	financial assistance (loans/investments)	<p>technologies implemented in Cluster" were organized in MSME Clusters during Aug-Sep 2022.</p> <ul style="list-style-type: none"> A National Conclave on Accelerating Energy Efficiency in Micro, Small and Medium Enterprises was organized on 9th December, 2022 and 2 Regional Conclaves were organized for Dairy and Foundry Sectors. 27 Pilot demonstration projects identified and approved; 21 projects have been successfully implemented. Developed 120 bankable Detailed Project Reports on Energy Efficient technologies
Output 2.2: Increased awareness and implementation of Best Operating Practices for energy management and EE/RE technologies in MSMEs in 12 energy intensive MSME clusters.	<ul style="list-style-type: none"> At least 500 experts, engineers, and staff trained in RE/EE technology basics and Best Operating Practices and at least 250 implementing Best Operating Practices during the complete project cycle. 	<ul style="list-style-type: none"> At least 500 experts, engineers, and staff trained in RE/EE technology basics 	<ul style="list-style-type: none"> Organized 12 cluster-specific 3-days residential training workshops at Ambedkar Institute of Productivity-National Productivity Council, Chennai. Trained more than 230 cluster level enterprise representatives on "Best Operating Procedures for Energy management in MSMEs and handling of Energy audit Instruments." Project conducted 15 training workshops on the Design & Implementation of Energy Management System as per IS/ISO 50001 in Select MSME Sector/Cluster.
Component 3 – Scaling up of the project to a national level			
Outcome 3: The project is scaled up to a national level			
Output 3.1: Cooperation and synergies established and enhanced within the project clusters through information	<ul style="list-style-type: none"> At least 7 study tours/exchange visits carried out under a 'knowledge exchange program to share lessons 	<ul style="list-style-type: none"> At least 7 study tours/exchange visits web-sites 	<ul style="list-style-type: none"> Organized four international study tours for Foundry, Hand Tools, Ceramic, Dairy sectors to Japan, China and New Zealand.

Project Strategy	KPIs/Indicators	Target level	Progress in till date
sharing on best practices and joint workshops	<ul style="list-style-type: none"> and experiences among the various clusters. Existing web-sites in foundry and dairy sectors strengthened to include more information on EE/RE technologies and Best Operating Practices. 		<ul style="list-style-type: none"> Organized four inter-cluster visits for the cluster representatives to share and learn best practices. The Project has developed a knowledge-based portal to showcase the project activities, incorporate developed case studies, Detailed Project Report, Detailed Energy Audits report, vendors details. Knowledge Products-Technology compendiums, tutorial videos, best operating practices, case studies etc. are available on project's webpage on BEE's SIDHIEE website.
Output 3.2: Expansion of the project to affect new clusters at a later date throughout the country	<ul style="list-style-type: none"> Preparation of Project Proposals for EE/RE projects (similar to this one) in MSME clusters not covered in this project. (4 new Foundry clusters, the Ludhiana Hand Tools cluster, 1 more Ceramics cluster in India, 1 more Brass cluster, 1 more Dairy cluster). Preparation of more detailed information booklets for each of the 5 sectors on the technologies, returns on investment, etc 	<ul style="list-style-type: none"> Preparation of Project Proposals for EE/RE projects (similar to this one) in MSME clusters Preparation of more detailed information material (brochures, booklets) 	<ul style="list-style-type: none"> Upscaling activities in the 26 clusters were executed by project partners <p>Achievements under Upscaling phase of the project:</p> <ul style="list-style-type: none"> 36 awareness workshops were conducted in different clusters 28 Technology based compendiums were finalized for each cluster and distributed to MSME clusters for adoption. Implemented Energy Efficiency and Renewable Energy measures in 770 industries in 26 clusters. 75% of EE technologies of total implementations have been implemented. 25% of RE technologies of total implementations have been implemented.
Component 4 – Strengthening policy, institutional and decision-making frameworks			
Outcome 4: Policy, institutional and decision-making frameworks strengthened			
Output 4.1: Improved monitoring and evaluation of energy use and development of a benchmarking system	<ul style="list-style-type: none"> At least 24 detailed energy audits conducted in various sectors including investment options, payback periods, current barriers to implementation, and energy use/CO2eq emissions prevented 	<ul style="list-style-type: none"> At least 24 detailed energy audits conducted At least 12 detailed cluster-level energy use database and Benchmarking A survey conducted on locally available biomass resources 	<ul style="list-style-type: none"> Project has till now conducted 150 Detailed Energy Audits The project developed a cluster level/unit level cloud-based data analytics tool for energy-use database and benchmarking system and training provided to 12 cluster leaders and 40 cluster representatives.

Project Strategy	KPIs/Indicators	Target level	Progress in till date
	<p>from the technologies/practices.</p> <ul style="list-style-type: none"> At least 12 detailed cluster-level energy use databases prepared (one for each cluster); these would form the basis of benchmarking systems A survey conducted on locally available biomass resources and sustainability of biomass supply determined. (In the Foundry and Brass Sectors) Sustainability standards developed for biomass use. 	<ul style="list-style-type: none"> Sustainability standards developed for biomass use. 	
Output 4.2: Mainstreaming EE and RE into national policies and programmes on MSMEs Development	<ul style="list-style-type: none"> Detailed report prepared on the policy and regulatory framework needed to accelerate the diffusion of energy-efficient and renewable energy technologies in the 5MSME sectors. The report will also discuss improved RE options and related policy issues, and issues related to supply of piped NG in the clusters. Roadmap prepared for strengthening energy efficiency on end use and supply side, based on interactions with existing cluster level associations, other institutions at the cluster level with BEE, MoMSME & MNRE. The roadmap will specifically relate to state level programs where these clusters are located 	<ul style="list-style-type: none"> Detailed report prepared on the policy and regulatory framework Roadmap prepared for strengthening energy efficiency on end use and supply side 	<ul style="list-style-type: none"> Project has developed a report on policy and regulatory framework needed to accelerate the diffusion of EE/RE technologies in the MSMEs sector.

III. Project Risk Management

1. Please indicate the overall project-level risks and the related risk management measures: (i) as identified in the CEO Endorsement document, and (ii) progress to-date. Please expand the table as needed.

	(i) Risks at CEO stage	(i) Risk level FY 22	(i) Risk level FY 23	(i) Mitigation measures	(ii) Progress to-date	New defined risk ⁵
1	Technical risk: EE and RE technologies for enhancing efficiency and meeting growing energy needs of MSMEs and improving them Competitiveness are not mature yet.	Modest risk (M)	Modest risk (M)	This risk must be balanced against a substantial potential to achieve efficiency breakthroughs and a substantial enhancement of the share of renewable energy. In adapting the technologies, great attention will be paid to the development process and initial implementation of case studies. This approach has been well demonstrated in the U.S., Europe, and China.	The risk was mitigated through the implementation of demonstration projects and documenting them in case studies. At the cluster level, technologies encouraged by the project are mainly mature and proven technologies. As the project progressed it ensured that sufficient capacity existed to implement and manage these technologies. A total of 21 demonstration projects implemented. Furthermore, 98 capacity building workshops were held on best operating practices, strengthen capacities of local service providers and energy efficient technologies. Participants in these workshops were unit owners, operators, cluster leaders and local service providers. The series of workshops held further helped to mitigate this risk.	<input type="checkbox"/>
2	Economic risk: Increased investments on EE and RE technologies are not sufficiently economically attractive.	Low risk (L)	Low risk (L)	This risk will be tracked by a detailed evaluation of payback periods for each technology which is adapted according to different fuel price scenarios. The risk will be mitigated by ensuring that the initial evaluations of the potential for savings are sufficient to warrant investment and replication, and re-checked as the adaptation and market introduction takes place	To reduce this barrier, a detailed evaluation of payback periods was conducted for each of the selected technology. Techno-economic analysis were conducted for various technologies including biomass gasifier, harmonic mitigation, power factor correction, solar thermal, induction furnace, insulation, EE motors, EE fans energy efficient gas-fired furnaces technologies. Furthermore, the risk was reduced by the financial support for demonstration of 21 projects, as well as developed 150 detailed energy audits 200	<input type="checkbox"/>

⁵ New risk added in reporting period. Check only if applicable.

	(i) Risks at CEO stage	(i) Risk level FY 22	(i) Risk level FY 23	(i) Mitigation measures	(ii) Progress to-date	New defined risk ⁵
					bankable DPR's & 98 workshops for dissemination of best operating practices.	
3	Market risk: Increased investments on EE and RE technologies do not provide higher returns as well as development of markets	Modest risk (M)	Modest risk (M)	This project will address both supply and demand side barriers to promote technically feasible and economically viable EE/RE options that offer attractive Return on Investments (ROI). Simultaneously, the project will facilitate financing of these EE/RE options.	Investments in RE and EE technologies are increasing in India, and thus the market for such technologies are improving as the project progressed. Demand side was addressed by doing energy audits and sharing of best practices (BOP).	<input type="checkbox"/>
4	Financial risks: MSMEs involved in Demonstration of improved energy efficiencies and Renewable energies are not able to make bankable projects or attract required finances from the financial institutions.	Low risk (L)	Low risk (L)	While a lack of investment capital in absolute terms is very unlikely, it is possible that banks/investors will shy away from what are perceived as "new technologies" in the MSME sector, which already has some problems related to financial reporting and obtaining credit. However, this is actually a crucial barrier to industrial development that must be addressed. The risk is deemed as low because of existing commitments by SIDBI and IREDA which will at least be sufficient to initiate the market. The project will address the risk by working closely with investors/banks from the outset of the project.	This risk was considered to be low, due to existing commitments in the overall energy efficiency and renewable energy markets by specialized financial institutions such as SIDBI and IREDA. Despite financing being a small portion of the project, the identification of additional experts and agencies willing to provide financial services to MSMEs for EE/RE projects were initiated.	<input type="checkbox"/>
5	Policy risk: Fall in electricity /fossil fuel prices.	Low risk (L)	Low risk (L)	Electricity demand has been increasing at higher pace than production for the past 10 years, and the trend in fossil fuel prices is upwards.	The electricity demand and prices are ever increasing and so is the trend with fossil fuel demand and prices. This risk therefore remained low.	<input type="checkbox"/>
6	Policy risk: Supportive policy framework not in place or implemented	Low risk (L)	Low risk (L)	The Government of India has accorded priority to EE and RE technologies measures in SME sector, and BEE is already working towards this.	This risk remained low as the Government of India has continued to assign priorities to EE and RE technology measures in the SME sector, and BEE is already working towards this.	<input type="checkbox"/>

2. If the project received a **sub-optimal risk rating (H, S)** in the previous reporting period, please state the **actions taken** since then to mitigate the relevant risks and improve the related risk rating. Please also elaborate on reasons that may have impeded any of the sub-optimal risk ratings from improving in the current reporting cycle; please indicate actions planned for the next reporting cycle to remediate this.

Not Applicable

3. Please indicate any implication of the **COVID-19** pandemic on the progress of the project.

The COVID-19 pandemic has not only posed threat to the health and lives of millions around the world but also paved the way for systemic social and economic turmoil. The onset of the pandemic compelled the Government of India to impose a nationwide complete lockdown starting from March 25, 2020, which was further extended in phased manner as Lockdown 2.0 to 4.0 up-to May 31, 2020. These lockdowns had pushed the industries to close their production in an unplanned manner, with a huge challenge of severe disruption of supply chain and market closures across the country that impacted personnel in small and large Industrial units

During the Lockdown and relaxation period (June-December 2020), PMU, contractors, and Cluster Leaders continued to engage the MSME units by virtual means. 25 Technology Compendiums for all the clusters were finalised between PMU and contractors in September 2020. The Technology Compendiums, Case studies were then shared with MSME units to get Expression of Interest and submission of implementation plans, to the MSME units, by the contractors during this period.

The project partners resumed the project activities slowly and selectively due to travel restrictions implementation activities under up-scaling contracts from December 1, 2020. The Cluster Leaders as well as the Project Engineers and Project Managers of the project partners started visiting the MSME units to re-start the activities in the up-scaling assignment.

BEE officials, UNIDO project partners and PMU staff were also infected during the second wave of the pandemic in April to June 2021.

The Omicron variant of COVID-19, that peaked in the second half of January, 2022, has had relatively low impact on the project activities, however cluster visits by the PMU team for the verification & validation of up-scaling assignments were cancelled or postponed due to the pandemic. After slight moderation in economic activity during January-2022, growth momentum picked up again in February 2022 amid withdrawal of COVID-19 induced restrictions across states. PMU staff & family members also got COVID-19 infected in the month of April, 2022.

As full relaxations were further given by the government for public gatherings and organizing workshops, due to very less cases of infections, some more workshops were planned from June-2022 to December-2022 in the clusters to disseminate knowledge on the implementation of EE & RE technologies, award the Certificate of Appreciation to the MSME units, and also to showcase the project's achievement in the cluster.

Following were the implications of the COVID-19 pandemic on the progress of the project:

- The deliverables linked with the implementation of EE/RE technologies in MSME units and tCO₂e reduction targets, which are at the core of the project, and timelines for various activities were impacted.
- Activities linked to the project, such as conducting Awareness Workshops for technology demonstration in the clusters, Energy audits through consultancy firms, Contracts of sustainability of EMCs in the clusters, Training programs for Bankers and MSME units, and Inter-cluster visits, were delayed due to the pandemic and various restrictions imposed by the state govt.'s to contain the spread of the pandemic.
- Deliverables and timelines of the contracts, which have been already issued to the firms, have been impacted due to the prolonged restrictions on travels, organizing workshops & meetings etc. All the field visits by the contractors and technology suppliers were withheld, till the situation normalized further and therefore were able to contact the units through phone and email only. Other initiatives such as Benchmarking, Design & development of forging furnaces, Audio-Visual assignment, and development of knowledge products for new clusters, Sector-specific training programs for the MSME units of the clusters were delayed substantially.
- During the Second Wave outbreak of COVID-19, the lockdown was imposed by the respective States, however, the impact was more National except for a few states in the North East part of India. The situation was not in control and some of the state governments were reviewing the

situation closely and extending the imposed restriction on some activities again due to the pandemic; the MSME units took few weeks to start function normally, after restrictions were lifted.

- The first, as well as the second wave of the pandemic altogether, severely impacted the timelines of various planned activities in the scaling-up phase of the project, which are very crucial to achieve the desired targets EE/RE technology implementation and tCO₂e reduction by June 2022 along with the utilization of balanced budget. The third wave related to the Omicron variant of COVID-19, that peaked in the second half of January, 2022, has had a relatively lower impact on the activity levels of the project, however cluster visits by the PMU team for the verification & validation of up-scaling assignments were cancelled or postponed due to the pandemic.

4. Please clarify if the project is facing delays and is expected to request an **extension**.

Not Applicable

5. Please provide the **main findings and recommendations of completed MTR**, and elaborate on any actions taken towards the recommendations included in the report.

The MTR independent assessment took place between January and March 2018, with following objectives

- Assess project's performance and progress towards its results
- Assess remaining barriers in design, management and performance of partners and identify required changes to help achieve expected results
- Develop recommendations and follow-up plan for necessary corrective actions.

The MTR was conducted according to the UNIDO evaluation policy and the UNIDO Evaluation Manual. The evaluation included a desk review of existing project documents, interview of a cross section of project stakeholders in Vienna and India, and field visits to five project clusters representing different project cluster types and sectors and two additional cluster leaders were also interviewed.

The project design, through close partnership with the Bureau for Energy Efficiency (BEE) and the location of the Project Management Unit (PMU) within BEE, while posing challenges for timely implementation, supports incorporating learnings into government programmes and plans like the 2020 3-year plan. Similarly, the development of clusters of similar industries and housing the Energy Management Cells (EMC) in cluster associations also supports creation of visibility, uptake and awareness on Energy Efficiency and Renewable Energy (EE/RE). The project is highly relevant to the existing thinking and planning at the national level and at the Micro, Small, and Medium Enterprises (MSME) level. The national government has increasing focus on EE/RE and climate change and is also encouraging energy efficiencies in MSMEs. This project combines all of these issues into a single project. Furthermore, the project is also in line with MSME cluster needs of increasing their profitability and provision of appropriate tools and support to enable achieving these requirements. Project implementation and management is functioning on a high level. M&E procedures are in place as well as efficient, and cooperation with the 12 clusters is working well. Annual reporting (PIR) is carried out and results are regularly traced against overall objectives and discussed with the main stakeholders. The Project Steering Committee (PSC) meets annually and takes decisions as mandated; this is well documented in meeting minutes.

Recommendations of completed MTR

There is a need for the project partners to have a planning meeting at the earliest for a joint decision on,

- Utilisation of remaining funds within the given time limits.
- 'Redesigning' of project with realistic and appropriate timeframe.
- Closing of project in the given time without utilising all funds.

Other areas for further action are:

- Review and adapt Project Logical Framework and work plan to actual situation
- Provide more direct support given to MSMEs to foster implementation
- Create self-sustaining models for EMCs
- Undertake cluster team members meetings after finalizing updated project plan, for smooth execution
- Identify ways to include small and tiny industries under the project, such as specific components and activities for them

UNIDO: BEE:	<ul style="list-style-type: none"> Start the metering/monitoring of actual savings and the planned benchmarking system at company/cluster/sector level, including resource allocation for it Accelerate the decision making and procurement procedures to improve efficiency and undertake measures to create common understanding and stronger ownership from involved parties (at cluster level) for project success.
	<ul style="list-style-type: none"> Accelerate the decision making and procurement procedures to improve efficiency.
Specific Actions taken towards implementing the recommendations included in the report	
<ul style="list-style-type: none"> UNIDO & BEE had a review meeting to discuss on utilization of remaining funds within the given time limits with realistic workplan to complete specific project components and associated activities within the timelines. After 8th PSC meeting a request letter for extension of the project lines was sent to UNIDO Detailed work plan was prepared to complete the pending activities and utilizing the funds. Pilot projects (21 Nos.) were sanctioned for MSME in few clusters as well as up-scaling of the project activities was initiated to provide more direct support, in terms of funds and technical support, to the MSMEs. During the up-scaling phase small & tiny industries were also engaged for participation in the project activities by providing technical support through consultants; to help them implement EE & RE technologies. Walk through audits were also conducted in MSME units to implement energy conservation measures, thereby helped them reduce energy cost in production. Contracts for development of Cloud based benchmarking software tool for MSMEs was released. As of now, the project has developed a cloud benchmarking tool for Foundry, Hand Tool, Brass, Ceramic, Dairy and Food Processing MSME sector. The MSME units can input energy & production data to the cloud benchmarking Software tool, to record & monitor their energy consumption patterns and compare with the sector/ cluster best specific energy consumption figures. 	
Both UNIDO & BEE have taken appropriate measures, internally, to expedite decision making and procurement procedures.	

IV. Environmental and Social Safeguards (ESS)

1. As part of the requirements for **projects from GEF-6 onwards**, and based on the screening as per the UNIDO Environmental and Social Safeguards Policies and Procedures (ESSPP), which category is the project?

☐ Category A project

☐ Category B project

☐ Category C project

(By selecting Category C, I confirm that the E&S risks of the project have not escalated to Category A or B).

Notes on new risks:

- If new risks have been identified during implementation due to changes in, i.e. project design or context, these should also be listed in (ii) below.*
- If these new/additional risks are related to Operational Safeguards # 2, 3, 5, 6, or 8, please consult with UNIDO GEF Coordination to discuss next steps.*
- Please refer to the [UNIDO Environmental and Social Safeguards Policies and Procedures \(ESSPP\)](#) on how to report on E&S issues.*

Please expand the table as needed.

	E&S risk	Mitigation measures undertaken during the reporting period	Monitoring methods and procedures used in the reporting period
(i) Risks identified in ESMP at time of CEO Endorsement			
(ii) New risks identified during project implementation (if not applicable, please insert 'NA' in each box)			

V. Stakeholder Engagement

1. Using the previous reporting period as a basis, please provide information on **progress, challenges and outcomes** regarding engagement of stakeholders in the project (based on the Stakeholder Engagement Plan or equivalent document submitted at CEO Endorsement/Approval).

As part of the Scaling-up and expanding of the project activities, the project had engaged CII-GBC for executing the scaling-up activities in Dairy, Ceramic, Foundry (Group-A2) sectors and DESL for Hand Tools & Brass and Foundry Sectors (Group-A1). Benchmarking, Data Analytical Tool – DESL, Deloitte for Sustainability of EMC assignment, PwC for policy and Regulatory frame work assignment.

For scaling-up and expanding project activities in 3 more MSME clusters, in addition to previous 23 MSME clusters, the project has engaged CII-GBC for Rajasthan Dairy cluster and DESL for Ludhiana Hand Tools & Faridabad Foundry clusters.

As per the specific requirement raised by few industry associations (Foundry, Ceramic and Steel re-rolling mills sectors), BEE has requested UNIDO to conduct a detailed study of resource efficiency (focusing energy efficiency) in MSMEs in the Foundry, Ceramic and Steel Re-rolling mill sector by engaging sectoral experts for the study. The project engaged sectoral experts through contractors CII-GBC, FICCI, and CII-CEC for MSMEs in Foundry, Steel re-rolling mill and Ceramic sectors respectively.

Progress

- Monthly review meetings are held with BEE, PMU, and the project partners; which were held at BEE with the participation of the Secretary and Director from BEE for all the meetings.
- Regular monitoring meetings were held with project partners with PMU on the progress of project activities.
- Organizing online review meetings with Associations and MSME units on the progress of the upscaling activities.
- The project felicitated the MSME units in the clusters and Certificate of Participation was awarded to the successful units which have contributed to the success of project by implementing EE & RE measures in their unit.
- A Joint monitoring mission of the GEF-OFP Ministry of Environment, Forest & Climate Change (MoEFCC) and Bureau of Energy Efficiency (BEE) and UNIDO to Coimbatore Foundry Cluster, was organized on 7-10th July, 2022, to review the project's progress in MSME cluster and assess the requirement for extension of the project. The team visited 4 nos. of MSME units, Energy Management Centre (EMC) and participated in the project stakeholders meeting.
- Outreach & Awareness – Knowledge dissemination workshops, 1 National Conclave and 2 Regional Conclaves (Dairy and Foundry Sector), Creation of WhatsApp group for regular communication & updates, and sharing of technology compendium, case studies, tutorial videos with MSME units.
- Regular review meeting with contractors on the designing of Coffee Table Book, Tutorial Videos, and impact stories videos.
- Outreach & Awareness – Creation of WhatsApp group for regular communication & updates, sharing of technology compendium & case studies, etc with MSME units – contractors- PMU has been formed for each Cluster.
- Project Partners have created a Dash Board which is active online, where all the project activities are updated on a timely basis.

Challenges

- The Omicron variant of COVID-19, that peaked in the second half of January, 2022, has had relatively lower impact on the project activities. Very low infection rates and adoption of COVID appropriate behaviour (CAB), enabled the project to plan workshops from June to December 2022.
- Coordination for managing and closing various contracts with stringent timelines.

Outcomes

- Effective monitoring of project activities has taken place by PMU on day-to-day basis, under the scaling-up assignment and various other contracts.
- Monthly review meetings by BEE and regular (day-to-day) monitoring by PMU have also provided the desired project implementation results so far.

2. Please provide any feedback submitted by national counterparts, GEF OFP, co-financiers, and other partners/stakeholders of the project (e.g. private sector, CSOs, NGOs, etc.).

Feedback from the Cluster associations (Stakeholders):

A. President, COINDIA, Coimbatore Foundry Cluster, Tamil Nadu

I am proud to say that UNIDO with GEF and BEE have been supporting all throughout this project and we've almost 85 member industries, small and medium, around Coimbatore have hugely benefitted out of this program and we also had Energy Clinics where in we trained members, gave them awareness on how to reduce energy in all equipment such as air compressors, VFD and even foundry equipment, how to save energy and what are the equipment available, what are the technologies available, world class technologies, we bring it to their doorsteps.

B. Association Representative, Thangadh Ceramic Cluster, Gujarat

Earlier my factory's electricity bill was around INR 200,000, which has reduced to around INR 100,000. I've been able to save around INR 2,400,000 on energy per year.

C. Association Representative, Jamnagar Brass Cluster, Gujarat

We've converted our coal fired billet heater to gas fired billet heater, so it has helped us immensely in many ways, in terms of clean energy and in terms of cost as well. It has benefited us.

D. Association Representative, Jalandhar Hand Tool Cluster, Punjab

Earlier what happened in our industry, all the forging furnaces were run on Furnace Oil which we all now understand that much more polluting and it is not efficient as well but lately we were able to convert all our forging furnace to LPG, brought some experts and some vendors who can help us to develop these furnaces into LPG, which ultimately helped us in productivity, cost effectiveness, and most important is that it is a green fuel.

3. Please provide any **relevant stakeholder consultation** documents.

- Proceeding of the National Conclave and Regional conclaves.
- Monthly reports on the progress of upscaling activities in Dairy, Hand tools & Foundry Clusters
- Upscaling project summary reports

- Proceedings of bankers training, B2B exhibitions & ISO-50001 programs
- Summary report of GEF-OFP MoEFCC visit to Coimbatore Foundry Cluster.

VI. Gender Mainstreaming

1. Using the previous reporting period as a basis, please report on the **progress achieved on implementing gender-responsive measures** and **using gender-sensitive indicators**, as documented at CEO Endorsement/Approval (in the project results framework, gender action plan or equivalent).

The project is committed to maintaining gender equality at each stage of project implementation. Participation of women is encouraged in the workshops organized by project partners. MSME units are encouraged to nominate women employees to participate in the project as well as to provide have to have in place basic gender rights for their employees (e.g., drinking water, toilets, Health & Safety for pregnant women, child care etc.).

VII. Knowledge Management

1. Using the previous reporting period as a basis, please elaborate on any **knowledge management activities / products**, as documented at CEO Endorsement / Approval.

- Specific technology compendiums for dairy, hand tool and foundry sectors.
- 10 Impact videos capturing social economic & environmental impacts and 5 Tutorial videos on Energy Efficiency & Renewable Energy technologies introduced by the project in various clusters.
- Coffee table book summarizing the journey of the project.

2. Please list any **relevant knowledge management mechanisms / tools** that the project has generated.

- Impact and tutorial videos developed under the project
- Technology compendiums developed under the project
- Coffee table book.
- Website Link- <http://sidhjee.beeindia.gov.in/aboutus/Videos>

VIII. Implementation progress

1. Using the previous reporting period as a basis, please provide information on **progress, challenges and outcomes achieved/observed** with regards to project implementation.

Progress:

The project has so far achieved substantial part of the objectives and goals as outlined in the project document. The project, through its various activities, has conducted a higher number of workshops, providing training to participants much more than the expected numbers. The small-scale energy conservation interventions in the clusters have been much higher than the set targets. The project has developed a 120 bankable Detailed Project Reports for the industries to fast-track the decision-making process.

The project has scaled-up and expanded its activities to 3 new clusters, to the already existing 23 clusters. This is now bringing in more MSMEs under its umbrella and provide more technical supports on energy efficiency at the National level.

A. Upscaling and Expanding activities in 3 new clusters:

- 6 awareness workshops were organized to generate interest among the MSME units to participate in the assignment
- Cluster specific Energy Efficiency and Renewable Energy based technology compendiums covering 20 - 30 major energy saving measures possible in the clusters were prepared.
- Implemented Energy Efficiency and Renewable Energy measures in 30 industries.

B. Development of Benchmarking tool:

The project has developed cluster level/unit level cloud-based data analytics tool for energy-use database and benchmarking systems. This will provide the MSME entrepreneurs with simple way to keep round-the-clock track of the energy consumption in the industry. This will ensure avoidance of any energy loss in the operations by taking timely precautionary measures in the units.

- Benchmarking tool was successfully hosted in National informatics centre for use by Indian MSME's

C. Sustainability of EMC:

The project has developed business models for the sustainability of EMC's established in the clusters.

D. Implementation process of ISO50001:

Project has targeting 42+ clusters for capacity building on implementation process of ISO50001 to 1000+ industry professionals and Pilot demonstration of Applicability & Effectiveness of ISO50001 Energy Management System in SME Sectors (Ceramic, Dairy & Hand tool) covering 15 units

Activities carried out under the Assignment: -

- Organized 24 of training programs with defining shortlisting criteria Shortlisting & Selection of units as per the set criteria Signing of Agreement for Implementation & Certification Planning & coordination for Implementation Process.
- Handholding support is being given for preparing necessary documents as per ISO 50001 EnMS.

E. Conducted Business-to-Business Exhibition and Vendor Interfacing events:

- 20 B2B EE technology vendor interface activity is to carry out technology exhibitions specifically curated for the focused clusters of the project. The objective of this activity is to bring synergy between MSMEs with Technology and Service providers, Financial Institutions and Banks and other allied stakeholders involved in the cluster development.

F. Capacity Building Training Programs for Bankers/ Financial Institutions in EE/RE:

- 15 Capacity building training programs organized in order to support the MSMEs appropriate training programs are necessary for financial institutions to boost their confidence on MSMEs and provide "Enhanced financing opportunities for EE/RE related technology and implementation measures".

G. Detailed study on resource Efficiency (focusing Energy Efficiency) for Ceramic, Foundry & SRRM: -

- Desk research and conducting detailed study by sector experts.
- Technology Compendiums for the best available technologies that can be implemented.
- Report of decarbonization roadmap for foundry, ceramic & SRRM sectors

H. Project terminal activities:

- a) As the GEF-4 Project- “Promoting Energy Efficiency & Renewable Energy in Selected MSME Clusters in India”, ended on 31st December, 2022, therefore, the Terminal Evaluation of the project, by International and National Evaluators, was held during July-Sep 2022. The consultants visited selected MSME clusters and had consultation meetings with stakeholders (Industry associations, MSME Unit owners, Cluster leaders, Technology Suppliers & Consultants) and MoMSME, MNRE & BEE officials who were associated with the project. The debriefing meeting, by Independent International & National Evaluators, was held on 3rd October, 2022 to present the preliminary findings of the stakeholder discussions & industrial cluster visits and to have a discussion on the way-forward for the terminal evaluation. The discussion was attended by diverse stakeholders relevant to the MSME sector and was indeed crucial for the Evaluators to understand their perspective on the preliminary finding related to the Terminal Evaluation of the project.
- b) A project summary dialogue was held on June 2022, at UN House. The event was attended by Govt. officials, UNIDO officials, Consultants and MSME unit Owners. The event emphasized on the contribution of energy efficiency for productive and resilient MSMEs and the achievements and learning’s from the project implementation activities were shared. The cluster wise Project Summary Dialogue on Energy Efficiency for Productive and Resilient MSME Technology Compendiums were released for dissemination of knowledge. Representatives from various cluster associations, such as- Gujarat Dairy Cluster, Coimbatore Foundry Cluster, Thangadh Ceramic Cluster and Jalandhar Hand Tool Cluster, shared their experiences on the project activities. A Panel discussion and interaction with clusters on the way-forward for Energy Efficiency in the MSME sector was held.
- c) As terminal activities to showcase the project’s success stories and dissemination of learnings, 12 numbers workshops-“Project knowledge sharing workshop on EE & RE technologies implemented in Cluster” were organized in MSME Clusters: Coimbatore, Jalandhar, Bhopal, Faridabad, Hyderabad, Kolkata ,Thangadh, Jaipur, Gangtok, Ahmedabad & Chandigarh. The workshops focused on the knowledge sharing on the EE & RE Technologies implemented by the MSME units in the cluster. Members of the MSME units, Technology suppliers and Consultants who participated in the up-scaling project activities shared their experiences and successful EE & RE technology implementations.
- d) A National Conclave on Accelerating Energy Efficiency in Micro, Small and Medium Enterprises was organized in December, 2022, at New Delhi. More than 200 participants from select MSME sectors i.e., Foundry, Ceramic, Dairy sector, Hand-Tool & Brass, from different clusters, attended the National Conclave and around 10 Technology Suppliers exhibited their technologies in the event. Various cluster associations, MSME entrepreneurs and stakeholders discussed and gave inputs for successful implementation of energy efficiency programs in the MSME sector. The National Conclave will contribute to strengthening the operationalization and implementation of the current portfolio as well as a future program to scale up towards an inclusive and sustainable approach to energy efficiency in MSMEs. The conclave shall also act as a bridge to build a sustainable strategy across sectors and across the distinguished stakeholders. At the same time, the forum shall help the small and medium industries to become competitive and more energy efficient to gain new market shares.
- e) 2-days Sectoral Workshop for the Dairy sector in India, under the project was organized in December, 2022 at Ahmedabad. On Day-1 of the Workshop, more than 100 participants from different Dairy Cooperatives/clusters, attended the Regional Conclave and around 8 Technology Suppliers exhibited their technologies in the event, which are relevant to the Indian Dairy Sector. Regional Conclave on Accelerating Energy Efficiency in Micro, Small and Medium Enterprises- Dairy Sector On Day-2 of the workshops, an Industry visit to AmulFed Dairy, Ahmedabad was organized for 30 participants The visit was focused on familiarization of participants with new and innovative EE & RE technologies being implemented at AmulFed for cross cluster learning; discussions on specific consumption values for energy and water consumption and showcasing the best practices adopted for waste management & utilization at AmulFed dairy.
- f) 2-days Sectoral Workshop for the Foundry sector in India, was organized in December, 2022 at Coimbatore. On Day-1 of the Workshop, more than 120 participants from different Foundry clusters, attended the Regional Conclave and around 9 Technology Suppliers exhibited their technologies in the event, which are relevant to the Indian Foundry Sector. On Day-2 of the Workshop, Industry visit to Aquasub Engineering (Unit IV) was organized for 33 participants so that they can learn about the Best Operating Practices (BOPs) adopted by energy efficient units.

During various workshops, the project also released 15 additional tutorial videos and disseminated hard copies of case studies of various technologies implemented under the project for further adoption and replication by other MSME units. The project also released a Coffee-Table Book to showcase project's results and achievements. The Coffee-Table Book aims to showcase project's journey and select successes as well learnings during project implementation that will help to increase awareness of the collaboration between UNIDO, Government of India and other project stakeholders.

Challenges:

- Convincing cluster level associations and MSME units about the project and getting them on board to implement the project activities is one of the challenging tasks. However, a series of meetings and sharing the project benefits in other clusters helped the project overcome the challenges.
- Regular change in the office bearers of partner associations is one of the challenging issues for the implementation of project activities. During these changes, project activities got delayed for a particular duration.
- Despite various project activities, the challenges still lie in the implementation of energy efficiency measures due to lower awareness levels and financing related issues. Industries are more focused on production and business rather than energy savings associated with it. This is mainly due to lack of performance guarantee by the energy professionals, availability of local service providers and financing in case of high capital investments. However, project has facilitated with developing cluster specific technology compendiums which include 15 to 30 EE/RE based technologies which will provide confidence to units for adoption.
- The project adopted the cluster-based approach, which worked well in promoting energy efficiency in the MSME sector. However, a significant challenge is to address the diverse type of MSME units often encountered within the same cluster. In spite of many capacity building/awareness workshops, still, some MSME units are reluctant to change and implement process modifications, energy efficiency measures, mainly when it entails transition from time bound practices, additional investments and temporary dislocation/disruption of the manufacturing process.
- Currently the project phase is in the scaling up and expanding of the project activities with targets set on implementation measures particularly on adoption of EE technologies with investments on their own or through financing schemes.
- Project has also set a target of minimum of INR 6 lakhs and maximum of INR 10 lakhs investment on EE/RE measures in each MSME units. This will be a big challenge to achieve for the contractors engaged in the project activities.

Overall project achievements

- Implemented around **1876 (around 70 Technologies implemented multiple times in different units)** Energy Efficiency and Renewable Energy measures in 750 MSME units in 26 clusters.
- Achieved an energy savings of **24,315 TOE (tonnes of oil equivalent)** and avoided **147,326 tonnes** of CO₂ emissions per year.
- Achieved a monetary savings of **INR 1.46 billion (USD 18.2 Million)** and achieved investment of **INR 2.53 billion (USD 31.3 Million)** by MSME units.

2. Please briefly elaborate on any **minor amendments**⁶ to the approved project that may have been introduced during the implementation period or indicate as not applicable (NA).

Please tick each category for which a change has occurred and provide a description of the change in the related textbox. You may attach supporting documentation, as appropriate.

<input type="checkbox"/>	Results Framework	NA
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⁶ As described in Annex 9 of the *GEF Project and Program Cycle Policy Guidelines*, **minor amendments** are changes to the project design or implementation that do not have significant impact on the project objectives or scope, or an increase of the GEF project financing up to 5%.

<input type="checkbox"/>	Components and Cost	NA
<input type="checkbox"/>	Institutional and Implementation Arrangements	NA
<input type="checkbox"/>	Financial Management	NA
<input type="checkbox"/>	Implementation Schedule	NA
<input type="checkbox"/>	Executing Entity	NA
<input type="checkbox"/>	Executing Entity Category	NA
<input type="checkbox"/>	Minor Project Objective Change	NA
<input type="checkbox"/>	Safeguards	NA
<input type="checkbox"/>	Risk Analysis	NA
<input type="checkbox"/>	Increase of GEF Project Financing Up to 5%	NA
<input type="checkbox"/>	Co-Financing	NA
<input type="checkbox"/>	Location of Project Activities	NA
<input type="checkbox"/>	Others	NA

3. Please provide progress related to the **financial implementation** of the project.

[Attached Grant Delivery Report as annexure1](#)

IX. Work Plan and Budget

1. Please provide **an updated project work plan and budget** for the remaining duration of the project, as per last approved project extension. Please expand/modify the table as needed.

[Project ended on 31st December 2022.](#)

Outputs by Project Component	Year 1				Year 2				Year 3				GEF Grant Budget Available (US\$)	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Component 1 –														
Outcome 1:														
Output 1.1:														
Output 1.2:														
Component 2 –														
Outcome 2:														
Output 2.1:														
Output 2.2:														

X. Synergies

1. **Synergies** achieved:

1. Inter cluster visits of representatives of MSME units have brought sharing of knowledge and new practices within the respective sectors.
2. Development of technology-based cluster specific compendiums under upscaling of Project activities has synchronized good examples of technology use on EE & RE in the clusters.
3. Development of case studies and fact sheets on EE/RE technologies developed under the project in each cluster is being shared among MSME units for information and adoption.
4. Innovative technologies identified by other GEF projects have already been implemented in the project. The knowledge on EE & RE technologies will be shared through different platforms (workshops, exhibitions, websites, media, brochures, etc.).
5. The project has shared case studies of successfully implemented technologies to various MSME's in 26 clusters, so as to encourage MSME's to adopt or replicate the EE & RE measures.

3. Stories to be shared (Optional)

Below are some of the impactful results achieved under the GEF-4 project:

Mass Deployment of EE Technology: Project facilitated the large-scale deployment of more than 21,000 energy efficiency 28W BLDC ceiling fans (66% efficient than conventional fans) in about 145 ceramic industries in Thangadh Cluster. It is the first of its kind in India for such a significant mass deployment of one EE technology in the MSME sector. The project has adopted a demand aggregation model and reduced the product price by more than 33%. This is being actively pursued in all the 3 Ceramic clusters (Thangadh, Morbi & Khurja)

Mass Deployment of Solar PV Projects: Project also facilitated the implementation of Solar Roof Top PV projects in 65 ceramic industries in Thangadh Cluster. Cumulatively, total installed capacity is about 5.12 MWp. It is the first of its kind in India for such a significant implementation of solar PV projects in a single MSME cluster without any financial assistance.

Capacity Building of Local Service Providers: Project has initiated the mapping of existing Service Providers in each cluster and identified many new technology providers. Organized 45 capacity building training and trained about 250 local service providers on various aspects on promotion of Energy Efficiency and Renewable Energy Technologies in the cluster. During these training programmes, many new EE & RE vendors/technology providers have developed business connections and working relationships with Local Service Providers (LSPs) and MSME enterprises.

Energy Clinics: The Energy Clinic is organized for a group of 15 to 20 representatives of industries for the short workshop (3hours) on successfully implemented Energy Efficiency Technologies. The informal group of stakeholders consists of a set of Technology Providers, Technical experts, and Industry representatives who implemented the EE measures and an identified group of potential enterprises who can adopt the same EE measure. The Energy Clinic is initiated, coordinated & facilitated by the Cluster Leader and the Association members. This pilot Energy Clinic has provided effective results in terms of replication of success stories and more adoption of EE technologies and measures.

Energy Management Centres (EMC): Project has set-up one energy management centre in each of the 29 clusters at the premises of the industrial associations. The main idea is to increase the ability of local industry associations to provide help and advice to MSMEs within the clusters to improve energy efficiency levels. EMCs are equipped with various portable energy auditing instruments, materials, and guidebooks. These instruments shall be available for the use of MSME units in the cluster at nominal cost or free. Apart from energy audit instruments, the project organized various skill development training programs for employees of MSME units to upscale the skills on the handling of energy audit instruments, identification of energy conservation measures, report writing, and also to carry out detailed energy audits among MSME members.

XI. GEO LOCATION INFORMATION

The Location Name, Latitude and Longitude are required fields insofar as an Agency chooses to enter a project location under the set format. The Geo Name ID is required in instances where the location is not exact, such as in the case of a city, as opposed to the exact site of a physical infrastructure. The Location & Activity Description fields are optional. Project longitude and latitude must follow the Decimal Degrees WGS84 format and Agencies are encouraged to use at least four decimal points for greater accuracy. Users may add as many locations as appropriate.

Web mapping applications such as [OpenStreetMap](#) or [GeoNames](#) use this format. Consider using a conversion tool as needed, such as: <https://coordinates-converter.com>

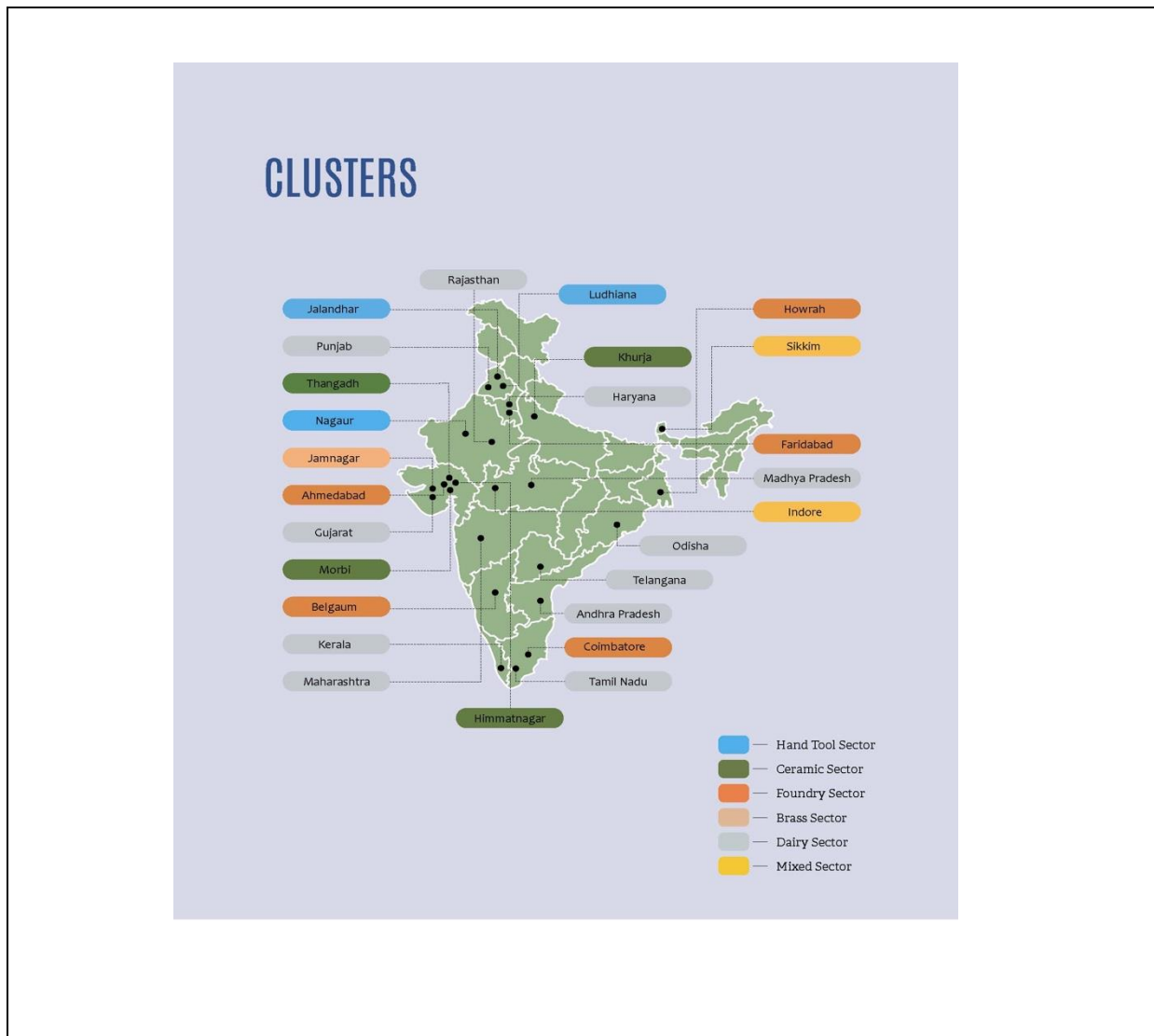
Please see the Geocoding User Guide by clicking [here](#)

Location Name	Latitude	Longitude	Geo Name ID	Location and Activity Description
Thangadh	22.5	71.2	1254675	Implementation of 308 EE & RE projects with an energy saving of 21,082 MWh/yr and annual GHG emission reduction of 13,155 t CO ₂
Coimbatore	11.01	76.57	1273865	Implementation of 253 EE & RE projects with an energy saving of 18,422 MWh/yr and annual GHG emission reduction of 15,563 t CO ₂
Jalandhar	31.19	75.34	1268782	Implementation of 208 EE & RE projects with an energy saving of 8,881 MWh/yr and annual GHG emission reduction of 4,415 t CO ₂


Location Name	Latitude	Longitude	Geo Name ID	Location and Activity Description
Jamnagar	22.28	70.40	1269317	Implementation of 146 EE & RE projects with an energy saving of 12,231 MWh/yr and annual GHG emission reduction of 4,030 t CO ₂
Morbi	22.48	70.49	1262775	Implementation of 63 EE & RE projects with an energy saving of 23,138 MWh/yr and annual GHG emission reduction of 9,066 t CO ₂
Belgaum	16.20	74.45	1276534	Implementation of 145 EE & RE projects with an energy saving of 10,245 MWh/yr and annual GHG emission reduction of 7,746 t CO ₂
Gujarat, Ahmedabad	23.1	72.35	1279233	Implementation of 159 EE & RE projects with an energy saving of 88,349 MWh/yr and annual GHG emission reduction of 45,629 t CO ₂

Location Name	Latitude	Longitude	Geo Name ID	Location and Activity Description
Kerala, Thiruvananthapuram	8.29	76.56	1254163	Implementation of 28 EE & RE projects with an energy saving of 4,839 MWh/yr and annual GHG emission reduction of 2,032 t CO ₂

Please provide any further geo-referenced information and map where the project interventions are taking place as appropriate.



ANNEXURE-1 GRANT DELIVERY REPORT

 GRANT DELIVERY REPORT	Grant:	200000251	Grant Status:	Authority to implement	Grant Validity:	11.04.2011 - 31.12.2022
	Sponsor:	400150 - GEF - Global Environment Facility	Currency:	USD	Reporting Period:	11.04.2011 - 10.07.2023
	Other Reference:	3553-U3-PJ-FS-GR-01	Fund:	GF	Prepared on:	10.07.2023
Project	Project Description	Country	Region	Project Manager	Project Validity	
103029	PROMOTING ENERGY EFFICIENCY AND RENEWABLE ENERGY IN SELECTED MICRO, SMALL AND MEDIUM ENTERPRISES (MSME) CLUSTERS IN INDIA	India	Asia and Pacific	Sanjaya Shrestha	26.10.2011 - 31.12.2022	

	Description	Released Budget Current Year (a)	Obligations Current Year (b)	Disbursements Current Year (c)	Expenditures Current Year (d=b+c)	Total Agreement Budget (e)	Released Budget (f)	Obligations + Disbursements (g)	Funds Available* (h=f-g)	Support Cost (i)	Total Expenditures (j=g+i)
103029											
103029-1-01-01	GFIND11001	USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
1100	Staff & Intern Consultants	0.00	(4,333.25)	4,376.58	43.33	195,369.77	195,369.77	36,784.29	158,585.48	0.00	36,784.29
1500	Local Travel	(1,238.88)	(6,195.04)	5,276.02	(919.02)	180,882.17	180,882.17	203,774.25	(22,892.08)	0.00	203,774.25
1600	Staff Travel	(257.95)	(229.31)	(28.64)	(257.95)	21.31	21.31	1,008.33	(987.02)	0.00	1,008.33
1700	Nat.Consult./Staff	0.00	0.00	0.00	0.00	911,818.80	911,818.80	941,023.83	(29,205.03)	0.00	941,023.83
2100	Contractual Services	(11,307.08)	(460,684.48)	406,590.98	(54,093.50)	4,907,535.82	4,907,535.82	4,632,038.48	275,497.34	0.00	4,632,038.48
3000	Train/Fellowship/Study	0.00	0.00	0.00	0.00	195,260.40	195,260.40	188,562.61	6,697.79	0.00	188,562.61
3500	International Meetings	0.00	0.00	0.00	0.00	9,227.81	9,227.81	5,385.68	3,842.13	0.00	5,385.68
4300	Premises	(11.27)	(330.26)	348.76	18.50	36,939.85	36,939.85	38,420.26	(1,480.41)	0.00	38,420.26
4500	Equipment	0.00	0.00	8,526.12	8,526.12	381,369.24	381,369.24	389,697.82	(8,328.58)	0.00	389,697.82
5100	Other Direct Costs	0.00	(72.02)	2,239.35	2,167.33	89,497.94	89,497.94	85,732.41	3,765.53	0.00	85,732.41
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	653,045.20	653,045.20
103029-1-01-01	Total	(12,815.18)	(471,844.36)	427,329.17	(44,515.19)	6,907,923.11	6,907,923.11	6,522,427.96	385,495.15	653,045.20	7,175,473.16
103029-1-02-01	1.1 EE/RE technologies introduced	USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
1500	Local Travel	0.00	0.00	0.00	0.00	21,095.43	21,095.43	1,046.57	20,048.86	0.00	1,046.57
5100	Other Direct Costs	0.00	0.00	0.00	0.00	39.87	39.87	35.49	4.38	0.00	35.49
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.76	44.76
103029-1-02-01	Total	0.00	0.00	0.00	0.00	21,135.30	21,135.30	1,082.06	20,053.24	44.76	1,126.82
103029-1-03-02	2.2 Increased awareness of best practice	USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
5100	Other Direct Costs	0.00	0.00	0.00	0.00	2,687.91	2,687.91	2,434.30	253.61	0.00	2,434.30
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(25.36)	(25.36)
103029-1-03-02	Total	0.00	0.00	0.00	0.00	2,687.91	2,687.91	2,434.30	253.61	(25.36)	2,408.94

* Does not include Unapproved Obligations

The above statement has been certified electronically by the designated officials in UNIDO's Financial Services.



GRANT DELIVERY REPORT

Grant:	200000251	Grant Status:	Authority to implement	Grant Validity:
Sponsor:	400150 - GEF - Global Environment Facility	Currency:	USD	Reporting Period:
Other Reference:	3553-U3-PJ-FS-GR-01	Fund:	GF	Prepared by:

Project	Project Description	Country	Region	Project Manager
103029	PROMOTING ENERGY EFFICIENCY AND RENEWABLE ENERGY IN SELECTED MICRO, SMALL AND MEDIUM ENTERPRISES (MSME) CLUSTERS IN INDIA	India	Asia and Pacific	Sanjaya Shrestha

	Description	Released Budget Current Year (a)	Obligations Current Year (b)	Disbursements Current Year (c)	Expenditures Current Year (d=b+c)	Total Agreement Budget (e)	Released Budget (f)	Obligations + Disbursements (g)	
103029-1-05-01	4.1 Improved monitoring and evaluation	USD	USD	USD	USD	USD	USD	USD	
1500	Local Travel	0.00	0.00	0.00	0.00	295.55	295.55	295.55	
103029-1-05-01	Total	0.00	0.00	0.00	0.00	295.55	295.55	295.55	
103029-1-06-01	5.1 Project Management	USD	USD	USD	USD	USD	USD	USD	
1100	Staff & Intern Consultants	0.00	0.00	0.00	0.00	28.77	28.77	28.77	
1500	Local Travel	0.00	0.00	0.00	0.00	85.50	85.50	5,515.99	
1700	Nat.Consult./Staff	0.00	0.00	0.00	0.00	164,706.28	164,706.28	106,944.76	
2100	Contractual Services	0.00	0.00	0.00	0.00	0.00	0.00	(462.51)	
3000	Train/Fellowship/Study	0.00	0.00	0.00	0.00	3,712.46	3,712.46	3,698.72	
4300	Premises	0.00	0.00	0.00	0.00	32.58	32.58	(4,153.43)	
4500	Equipment	0.00	0.00	0.00	0.00	1,604.82	1,604.82	1,456.85	
5100	Other Direct Costs	0.00	0.00	0.00	0.00	9,877.51	9,877.51	7,692.93	
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
103029-1-06-01	Total	0.00	0.00	0.00	0.00	180,047.92	180,047.92	120,722.08	
103029-1-06-02	5.2 Monitoring and Evaluation	USD	USD	USD	USD	USD	USD	USD	
1100	Staff & Intern Consultants	0.00	(9,296.08)	9,406.30	110.22	32,306.54	32,306.54	36,499.53	
1500	Local Travel	0.00	0.00	0.00	0.00	11,724.09	11,724.09	9,846.83	
1700	Nat.Consult./Staff	0.00	(2,850.32)	2,886.39	36.07	13,264.89	13,264.89	13,318.10	
2100	Contractual Services	0.00	0.00	0.00	0.00	2,693.46	2,693.46	0.00	
5100	Other Direct Costs	0.00	0.00	0.00	0.00	19.24	19.24	99.53	
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
103029-1-06-02	Total	0.00	(12,146.40)	12,292.69	146.29	60,008.22	60,008.22	59,763.99	
103029	Total	(12,815.18)	(483,990.76)	439,621.86	(44,368.90)	7,172,098.01	7,172,098.01	6,706,725.94	
200000251	USD Total	(12,815.18)	(483,990.76)	439,621.86	(44,368.90)	7,172,098.01	7,172,098.01	6,706,725.94	

