

# **Independent Mid-term Evaluation**

## **Promoting energy efficiency and renewable energy in selected micro, small and medium enterprises (MSME) clusters in India**

UNIDO Project ID: 103029

GEF Project ID: 3553



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION

**UNIDO INDEPENDENT EVALUATION DIVISION**

**Office of Evaluation and Internal Oversight**

**Independent Mid-term Evaluation**

**Promoting energy efficiency and renewable energy in  
selected micro, small and medium enterprises (MSME)  
clusters in India**

UNIDO Project ID: 103029

GEF Project ID: 3553



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION

Vienna, July 2018



Distr. GENERAL  
ODG/EIO/IED/18/R.3  
August 2018

Original: English

This evaluation was managed  
by the responsible  
UNIDO Project Manager  
with quality assurance by the  
Independent Evaluation Division

The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Mention of company names and commercial products does not imply the endorsement of UNIDO.

The views and opinions of the team do not necessarily reflect the views of the Governments and of UNIDO.

This document has not been formally edited.

# Contents

	Page
Abbreviations and acronyms.....	iv
Glossary of evaluation-related terms.....	vi
Executive summary.....	vii
1. Introduction.....	1
1.1 Scope and objective of the evaluation .....	1
1.2 Evaluation methodology and team.....	1
1.3 Limitations.....	3
1.4 Review criteria and key questions.....	4
2. Project Background.....	5
2.1 Brief country context .....	5
2.2 Project factsheet and background.....	6
2.3 Project objectives.....	7
2.4 Project implementation mechanism .....	7
2.5 Project Theory of Change .....	8
3. Key Findings.....	12
3.1 Project Design Assessment .....	12
3.2 Project Implementation and Management.....	18
3.3 Gender mainstreaming.....	19
3.4 Project performance towards results.....	19
3.5 Performance of partners .....	23
4. Conclusions.....	25
4.1 Major reflections and lessons learnt.....	25
5. Recommendations.....	27
5.1 Areas of immediate action.....	27
5.2 Other required actions.....	27
Annex 1. Terms of Reference.....	29
Annex 2: Evaluation questions .....	68
Annex 3. List of documents reviewed .....	70
Annex 4: Field visit programme .....	71
Annex 5. List of persons interviewed / met .....	73

## Abbreviations and acronyms

Abbreviation	Meaning
BEE	Bureau of Energy Efficiency
BOP	Best Operating Practices
CII	Confederation of Indian Industry
CGCRI	Central Glass and Ceramics Research Institute
CO <sub>2</sub>	Carbon-di-oxide
CP	Country Programme
CPE	Country Programme Evaluation
CSF	Country Service Framework
DC	Development Commissioner
DESL	Development Environergy Services Limited
DPR	Detailed Project Report
EA (R)	Energy Audit (Report)
EE/RE	Energy Efficiency / Renewable Energies
EMC	Energy Management Cells
ET	Evaluation Team
FDI	Foreign Direct Investment
FI	Financial Intermediary
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Green House Gas
GID	Green Industrial Development
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Cooperation for International Development)
GoI	Government of India
HDI	Human Development Index
HQ	Headquarters
IC-ISID	International Centre for Inclusive and Sustainable Industrial Development
IED	Inclusive Economic Development
IEV	Independent Evaluation Division
IREDA	Indian Renewable Energy Development Agency Ltd
ISID	Inclusive and Sustainable Industrial Development
KWh	Kilo Watt hour

Abbreviation	Meaning
LED	Light Emitting Diode
LSP	Local service provider, also provider of EE products
MoM	Minutes of Meetings
MNRE	Ministry of New and Renewable Sources of Energy
MSMEs	Micro, small, and medium enterprises
MTE(R)	Mid-Term Evaluation
Mtoe	Million tons of oil equivalent
ODG/EVQ/IEV	UNIDO Independent Evaluation Division
OECD-DAC	Organisation of Economic Cooperation and Development - Development Assistance Committee
OVI	Objectively Verifiable Indicators
PMU	Project Management Unit
PSC	Project Steering Committee
RECP	Resource Efficiency and Cleaner Production
SDGs	Sustainable Development Goals
SME	Small and Medium-Sized Enterprises
TERI	The Energy and Resource Institute
TOC	Theory of Change
TOR	Terms of Reference
UCSSIC	UNIDO Centre for South-South Industrial Cooperation
UN	United Nations Industrial Development Organization
UNDAF	United Nations Development Assistance Framework
UNIDO	United Nations Industrial Development Organization
UNSDF	United Nations Sustainable Development Framework
VFD	Variable frequency drive
W	Watt
WB	World Bank

## Glossary of evaluation-related terms

Term	Definition
Baseline	The situation, prior to an intervention, against which progress can be assessed.
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.
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.
Project Result Framework (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 (result based management) principles.
Outcome	The likely or achieved (short-term and/or medium-term) effects of an intervention's outputs.
Outputs	The products, capital goods and services which result from an intervention; may also include changes resulting from the intervention which are relevant to the achievement of outcomes.
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.
Risks	Factors, 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.
Target groups	The specific individuals or organizations for whose benefit an intervention is undertaken.



# Executive summary

This is the Mid-term Evaluation of the project “Promoting Energy Efficiency and Renewable Energy in selected micro, small and medium enterprises clusters in India”.

The project’s implementation start date was April 2011 and was to be completed by August 2016, but due to initiation delays it was extended to December 2019. This project aims to “develop and promote a market environment for introducing energy efficiencies and enhanced use of RE technologies in process applications in 12 selected energy-intensive MSME clusters in India with expansion to more clusters later, in order to improve the productivity and competitiveness of units as well as to reduce overall carbon emissions and improve the local environment.”

The independent assessment took place between January and March 2018. The evaluation was conducted by Mr. Stefan Melnitzky, International Evaluation Consultant and Ms. Moho Chaturvedi, National Evaluation Consultant. Its objectives are:

- (i) assess project’s performance and progress towards its results
- (ii) assess remaining barriers in design, management and performance of partners and identify required changes to help achieve expected results and
- (iii) develop recommendations and follow-up plan for necessary corrective actions.

The review has been conducted according to the UNIDO evaluation policy and the UNIDO Evaluation Manual. The evaluation includes 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 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.

**Project efficiency** overall is high, but variable. Apart from initial delays due to bureaucratic issues, there are delays in Detailed Project Report (DPR) approval for pilot project implementation. Also, three of the twelve clusters having come on board only recently, with only about 2 years of project time left. However, in terms of achievements, the project has

performed well, with around 70% of funds remaining; although, a fair number of expected outcomes have been achieved and targets met. The empowerment for Local Service Providers (LSP) along with industry officials and utility managers, provides quick and efficient targeting of multiple stakeholders and linkages to achieve goals of improved EE/RE and access to appropriate technologies and solutions for MSMEs.

Selection of MSME clusters has been very effective to achieving project goals. High energy intensive clusters, typical MSMEs, coupled with a relatively large dairy cluster with the capacity to both experimenting with innovative EE/RE systems and a spreading across the country is a good choice to increase outreach. The using of a cluster-based association approach that house the Energy Management Cells (EMC), has also been effective in creating awareness and demand for EE/RE. However, in most cases outreach is still limited and apart from existing pilots and audit/metering activities, there is limited uptake of EE/RE activities among the MSMEs.

Impact at the national level, to inform policy and ensure coordination with stakeholders, has been possible through housing the PMU in BEE. Similarly, placing the EMC and the cluster leaders in cluster associations, too creates visibility and discussion around issues of EE/RE among association members. The result has been a number of technologies adapted and fitted to local MSME needs. In terms of CO<sub>2</sub> savings, the project has achieved 40% of the expected results, which is a good result at this stage of project implementation.

Project results; due to the PMU's placement in BEE, can influence the Ministry of Power and provide inputs for the 2020 national 3-year plan, resulting in long term sustainability. Also, there are a good number of easy to implement and successful showcases, cluster wise Best Operating Practices (BOP) the creation of the EMCs, that are targeted through cluster associations. The project has also actively involved LSPs. Therefore, a cluster level package of technologies, actions and support systems exists, and is likely to result in continuing EE/RE interest and activities even after project completion. However, while the EMCs have been found to be of value to MSMEs, there is a reluctance to pay for the service, which was initially free of cost under the project.

**Conclusion:** This project is well designed and caters to the needs of all stakeholders; addressing issues of policy, awareness, technology and best practices, and creating systems for long term uptake of EE/RE activities among MSMEs. The use of demonstrations to create awareness has worked well and created greater visibility of project activities. Equally, high impact has been possible by selecting cluster where there has been little work done previously, while tailoring activities according to individual cluster needs. At the current stage the project has built up a strong base to be even more successful and to be able to even overachieve several Objectively Verifiable Indicators (OVI) by utilizing the remaining budget efficiently.

However, many MSMEs have a low risk-taking appetite, and therefore are slow on uptake and unwilling to take loans for EE activities, especially from FIs. Furthermore, most leaders and adaptors are likely to be from larger enterprises with higher manpower and funds. Small and Micro enterprises are less likely to benefit equally from project activities and may require targeted support to increase their inclusion.

**Recommendations:**

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

- (i) utilisation of remaining funds within the given time limits;
- (ii) 'redesigning' of project with realistic and appropriate timeframe; and
- (iii) 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
- Start the metering/monitoring of actual savings and the planned benchmarking system at company/cluster/sector level, including resource allocation for it

**UNIDO:**

- 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.

**BEE:**

- Accelerate the decision making and procurement procedures to improve efficiency.

**Remarks:**

*Right after the evaluation debriefing in Delhi on 22<sup>nd</sup> February 2018, the project management in BEE and UNIDO acted and started to discuss the findings and to work on the recommendations.*

*While compiling the MTR the Evaluation team came to know that a stakeholder meeting has been already organized on 17<sup>th</sup> March 2018 taking place in Indore cluster. Beside from PMU, the DG from BEE and Representative from UNIDO India, all cluster leaders and association representatives (50+ participants) have been invited, to prepare an efficient workplan for the remaining project period, to utilize the remaining funds efficiently, to increase impact and visibility of project and to further secure sustainability.*

# 1. Introduction

## 1.1 Scope and objective of the evaluation

This mid-term evaluation (MTE) of the project covers the project activities in the first 75 months of implementation of the project, notionally from 10/26/2011 – 12/31/2017, covering all 4 technical plus the management component in a balanced manner.

The purpose of the MTE is to independently assess the project to help UNIDO improve performance and achieve the expected outcomes as foreseen in the project documents.

The MTE has the following objectives:

- Assess the project's performance and progress towards the achievement of the expected results
- Assess remaining barriers in project design, project management and performance of partners to identify the necessary changes to set the project on-track to achieve its expected results
- Develop recommendations and a follow-up plan on necessary corrective actions

The evaluation mainly focused on the achievement of the expected results indicated in the project logical framework, and in particular on the aspects of relevance, effectiveness, efficiency, impact, sustainability, and management as well as cross-cutting issues such as gender.

The main geographical areas in India are, in addition to New Delhi, the sites of the clusters, including Brass: Jamnagar; Ceramic: Khurja, Morbi and Thangadh; Dairy: Gujarat, Sikkim and Kerala; Foundry: Indore, Coimbatore and Belgaum; and Hand Tools: Naguar and Jalandhar.

The evaluation team interviewed a cross section of stakeholders involved in the project. This included,

- BEE and PMU in BEE,
- UNIDO Headquarter, National UNIDO team, Evaluation Team
- National Experts from TERI, GIZ, DESL, CII
- Cluster associations, local PMUs, Cluster leaders, EMCs in-charge
- Companies /beneficiaries in various sectors
- Local providers of products and service on EE /RE

## 1.2 Evaluation methodology and team

The MTR has been conducted in accordance with the UNIDO Evaluation Policy<sup>1</sup>, the UNIDO evaluation Manual<sup>2</sup>, utilizing Annex 2: 'Definition of evaluation criteria including key evaluation questions'. The evaluation has been carried out using a participatory approach seeking to inform and consult with all key parties associated with the project. This evaluation was conducted by an Independent Evaluation Team (ET) and consists of Mr. Stefan Melnitzky and Ms. Moho Chaturvedi who closely cooperated with the UNIDO Independent Evaluation

---

<sup>1</sup> UNIDO. (2015). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/(M).98/Rev.1)

<sup>2</sup> UNIDO. (2017). Evaluation Manual Final – December 2017 by Independent Evaluation Division December 2017

Division (ODG/EVQ/IEV) to conduct the evaluation and on methodological issues. The cooperation is defined in the TOR for this MTE<sup>3</sup>.

The ET adopted a theory of change approach to assess the causal links between project activities, outputs and outcomes and to assess the extent to which the project contributed to conditions necessary to achieve the results stated in the Logframe. A mix of methods was used to deliver evidence-based qualitative and quantitative information: desk studies of project documentation, individual interviews, focus group meetings, surveys and direct observation.

In the inception phase the ET reviewed the documentation of the project provided by the UNIDO's Project team and interviewed UNIDO's Project Manager in Vienna. In addition, the ET also interacted and reviewed some documents of the India Country Programme Evaluation and four other project evaluations which were conducted in parallel. The details of the field work visits are given in Annex 4 and 5.

### Data collection and analysis process

The evaluation team developed interview guidelines and applied the following methods: **Desk review** of project documents, including, but not limited to:

- a. The original project documents, monitoring reports, such as progress and financial reports to UNIDO and Donor(s)/Partners, annual Project Implementation Reports (PIRs), back-to-office mission report(s) and other project-related material produced by the project.
- b. The evaluation team checked the validity of the project's results-chain in the project Logframe and reconstructed the theory of change for the project.
- c. Counterfactual information: In those cases where baseline information for relevant indicators was not available, the evaluation team could discuss it with Project team and check other available sources.

1. **Interviews:** Discussions were held with a cross section of project stakeholders and included:

- Briefing meetings at UNIDO headquarters in Vienna: Project Manager, UNIDO Evaluation Officer, Independent Evaluator of the India Country Programme Evaluation
- Meetings with the project team in India: UNIDO Representative, Project Management Unit (PMU), National Technology Coordinator, Technical Advisors, key local experts, UNIDO Field Office in Delhi
- Meetings with the Lead Executing Agency (BEE) in Delhi
- Cluster Association members in various states
- Energy Management Cells and cluster leaders
- Industries and entrepreneurs in clusters
- Local Product and Service Providers
- Experts from CII, TERI, GIZ, DESL, CGCRI
- Other UNIDO evaluation team members

---

<sup>3</sup> UNIDO (December 2017) TERMS OF REFERENCE; Independent Mid-term Evaluation of UNIDO/GEF project: Promoting Energy Efficiency and Renewable Energy in Selected Micro, Small and Medium Enterprises (MSME) Clusters in India

2. **Cluster Visits:** The ET visited selected clusters, cluster associations, MSMEs and LSP's as identified in the inception phase. The clusters visited were:

State	Cluster	Sector
Tamil Nadu	Coimbatore Foundry Cluster	Foundry Pumps and Motors
Gujarat	Gujarat Dairy Cluster	Dairy, Chocolate manufacturing
	Jamnagar Brass cluster	Brass industrial part and extrusion plants
Uttar Pradesh	Khurja Ceramic cluster	Ceramics
Punjab	Jalandhar Hand tool cluster	Hand tools
Discussions with Cluster leaders from		
Gujarat	Morbi and Thangadh	Morbi ceramics cluster (mainly tiles) Thangadh ceramics cluster (mainly sanitary ware)

3. **Presentation of preliminary findings:** At the end of the field mission, there was a presentation of preliminary findings, conclusions and recommendations to the key stakeholders: The presentation was followed by discussions on the findings.

**Evaluation schedule:** Below is the evaluation schedule for the MTE

Activity/deliverable	Indicative timing
Desk review	16 <sup>th</sup> – 31 <sup>st</sup> January 2018
Briefing with UNIDO headquarter (Vienna)	31st January 2018
Evaluation Framework and Theory of Change of the project intervention	5 February 2018
Fieldwork in India (Details see Annex 4)	12 <sup>th</sup> -24 <sup>th</sup> February 2018
Debriefing meeting in UNIDO HQ	6 <sup>th</sup> March 2018
Preparation of the first draft of the report	15 <sup>th</sup> March 2018
Feedback from stakeholders	30 <sup>th</sup> March 2018
Final Report	15 <sup>th</sup> April 2018

### 1.3 Limitations

Due to time constraints the cluster selection was based on the advice of UNIDO's India office involved with the project. Some planned meeting with key stakeholders could not be undertaken due to unforeseen reasons during the evaluation mission.

A detailed monitoring of co-financing is done only for the part coming from MSMEs (as per DPRs). Data on co-financing from involved ministries is not available and is actually not monitored by project management.

## 1.4 Review criteria and key questions

The following are the key evaluation criteria to be addressed by the MTE.

<b>A</b>	<b>Project design assessment</b>
1	Project design
2	Project results framework/Logframe
<b>B</b>	<b>Project performance and progress towards results</b>
1	Relevance
2	Effectiveness and progress towards expected results
3	Efficiency
4	Gender mainstreaming
5	Sustainability
<b>C</b>	<b>Project implementation management</b>
1	Project management
2	Results-based work planning, monitoring and evaluation, reporting
3	Financial management and co-financing
4	Stakeholder engagement and communication
<b>D</b>	<b>Performance of Partners</b>

## 2. Project background

### 2.1 Brief country context

Of the total global energy demand since 2000, India is responsible for almost 10%, with the country's energy almost doubled since then. India's primary energy demand has grown from about 441 Mtoe in 2000 to about 775 Mtoe in 2013. It is expected to further increase to about 1250 (estimates of the International Energy Agency) to 1500 (estimates of the Integrated Energy Policy Report) Mtoe in 2030.<sup>4</sup>

India is one of the major nations with growing energy usage and subsequent CO<sub>2</sub>eq emissions. Within the Indian economy, in terms of primary energy consumption, industry remains the largest consumer of energy – accounting for over 50% of total energy consumption in the country. Indian industries mostly rely on coal, oil and gas for primary energy. Among these, coal continues to be the dominant fuel.

Within industry, there are many Micro, Small, and Medium-sized Enterprises (MSME) which carry out energy and emissions-intensive activities in sectors such as the metallurgical and metals industry, glass and ceramics industry, agricultural activities and brick-making. In most of these MSME sectors, energy cost accounts for as much as 20%–30% of the total cost of production. At the same time as being energy intensive, the industrial sector – especially the industrial MSME sector – plays a vital role in the Indian economy, with 13 million MSMEs estimated to operate in India at the time of project commencement, contributing around 45% of manufacturing output, producing about 40% of exports and employing more than 40 million people.

MSMEs mobilize local capital and skills and thereby provide the impetus for growth and development, particularly in rural areas and small towns. They are often organized into “clusters, mostly with some form of central organizations, which work for the development of the many MSME's often called “units”. These clusters provide the bases for UNIDO to leverage the existing organizational structure to carry out outreach to hundreds of units with limited resources.

A study commissioned by Bureau of Energy Efficiency (BEE) estimated the total potential for electricity saving at 75.36 billion kWh, of which nearly a quarter (i.e., 18.57 billion kWh) corresponded to the industry sector as a whole, including small and medium enterprises. To put this in perspective, this represented approximately 3.6% of the entire energy demand in India in 2006.

Energy represents an important and expensive factor of production for industrial MSMEs – particularly in energy-intensive sectors such as mineral processing (ceramics, tiles, pottery, brick, glass etc.), metallurgical and metal industries (foundries, forging, alloys, heat treatment, steel re-rolling, etc.) and agro and food processing (bakeries, dairies, rice mills, etc.). The MSMEs in these sectors currently use significant amounts of electricity as well as large quantities of fossil fuels such as furnace oil, diesel, natural gas and coal (about 65 Mtoe) and/or biomass to meet their thermal energy requirements.

---

<sup>4</sup> <https://www.powermin.nic.in/en/content/overview-2>, accessed on 23 Feb. 2018



Most importantly for this project, the MSMEs in these sectors largely depend on inefficient equipment and technology as well as unskilled workers. This leads to wastage of energy; it also results in release of substantial CO<sub>2</sub> and particulate emissions.

This high demand for energy in the SME sector has been acknowledged and actions have been initiated by the Government of India. The XI Five Year Plan of the Government of India had undertaken interventions in 25 selected SME clusters to encourage energy efficient technologies and operational practices in SME sector in India. This was done through the BEE. During the XII plan period, more than 100 technologies are planned for 5 selected SME sectors with a vision to facilitate upscaling.<sup>5</sup>

## 2.2 Project factsheet and background

### Project factsheet<sup>6</sup>

Project title	Promoting energy efficiency and renewable energy in selected micro, small and medium enterprises (MSME) clusters in India
Project ID	103029 (GEF Project ID 3553)
Project Portfolio	Green Industrial Development
Overall project objective	The aim of the project is to develop and promote a market environment for introducing energy efficiencies and enhanced use of RE technologies in process applications in 12 selected energy-intensive MSME clusters in India with expansion to more clusters later, in order to improve the productivity and competitiveness of units as well as to reduce overall carbon emissions and improve the local environment.
Components	<ol style="list-style-type: none"> <li>1. Increased capacity of suppliers of EE/RE product suppliers/ service providers/ finance providers</li> <li>2. Increasing the level of end-use demand and implementation of EE and RE technologies and practices by MSMEs</li> <li>3. Scaling up of the project to a national level</li> <li>4. Strengthening policy, institutional and decision-making frameworks</li> <li>5. Project management</li> </ol>
Key dates and duration	Approved 4 January 2010. Implementation start date 11 April 2011, expected duration 98 months, expected implementation end date 31 December 2019. Extended from initially intended closing date of August 2016.
Executing partners	Bureau of Energy Efficiency (BEE), Ministry of Micro, Small and Medium Enterprises (MSME), Ministry of New and Renewable Sources of Energy (MNRE)
Donor funding	USD7,172,097 of GEF funds were planned at design.
Co-financing (USD):	Total of 26,300 co-financing was envisaged in design - 500,000 UNIDO cash and in-kind contribution; BEE 2,000,000 Cash and In-Kind; MSME 17,000,000 Cash and In-Kind; MNRE 6,700,000 Cash and In-Kind
Total project cost (USD)	USD33,372,097 (including donor funding, co-financing both cash and in-kind)
Budget Expended (USD)	USD6,612,873 (91%) of the USD7,280,900 total cash budget reported in UNIDO OpenData.
Planned terminal evaluation date	November 2019
Project Manager	Sanjaya SHRESTHA

<sup>5</sup> <https://www.powermin.nic.in/en/content/energy-efficiency>, accessed 23 Feb, 2018

<sup>6</sup> UNIDO, 2018. Charlotte Jones; Project Summary 103029 Promoting EE & RE in MSME clusters 23-1-18 draft.

## Changes in project

Based on the findings of the project management, in the PSC meetings (5th PSC meeting, 27th September 2016) a no cost project extension for 2 years was requested (letter no. 13/GEF-UNIDO-BEE/PSC/146553, dated 7th December 2016) and finally agreed upon. The projects duration is now extended from 1st Jan 2018 until 31st Dec 2019 and an updated workplan (3553\_2017\_work\_plan) was agreed. The Project Framework was not revised or adapted since project start. The project OVIs and assumptions are still valid.

## **2.3 Project objectives**

The aim of the project is to develop and promote a market environment for introducing energy efficiencies and enhanced use of resource efficient (RE) technologies in process applications in 12 selected energy-intensive MSME clusters<sup>7</sup> in India with expansion to more clusters later, in order to improve the productivity and competitiveness of units as well as to reduce overall carbon emissions and improve the local environment. The project will work at cluster levels as well as policy level to achieve its aim.

The promotion of energy efficiency and renewable energy in selected MSME clusters was envisaged through the following four components and related expected outcomes:

**Component 1** – Increased capacity of suppliers of EE/RE product suppliers/service providers/finance providers to support the expansion of EE/RE in the clusters.

*Expected Outcomes:* 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.

**Component 2** – Increasing the level of end-use demand and implementation of EE and RE technologies and practices by MSMEs.

*Expected Outcomes:* The level of end-use demand and implementation of EE and RE technologies and practices by MSMEs is increased.

**Component 3** – Scaling up of the project to a national level.

*Expected Outcomes:* The project is scaled up to a national level.

**Component 4** - Strengthening policy, institutional and decision-making frameworks.

*Expected Outcomes:* Policy, institutional and decision-making frameworks strengthened.

**Component 5** – Project management.

## **2.4 Project implementation mechanism**

The project implementation arrangements were designed in such a way as to embed the project in the normal operations of the responsible ministries in India. The responsibilities for project implementation were as follows:

Bureau of Energy Efficiency (BEE): Executing party for this project coordinating all activities. BEE is a statutory body under the Ministry of Power, the project funds flow from UNIDO to GOI in a special account opened by BEE.

Ministry for New and Renewable Energy (MNRE): responsible for renewable energy component, the Solar Energy Institute of the Ministry for New and Renewable Energy is

---

<sup>7</sup> Sectors encompassed ceramic production, hand tool production, foundries, brass production, and dairy production.

involved and responsible for parts of the tasks. The division of tasks between BEE and MNRE is agreed upon by both institutes.

Four ministries are involved in this project: The Ministry of Power through the Bureau of Energy Efficiency (BEE); the Ministry of Micro, Small and Medium Sized Enterprises (MSME); and the Ministry for New and Renewable Energy (MNRE). The GEF focal point is located in the Ministry of Environment, Forestry and Climate Change

- **UNIDO** helps to provide international coordination services and expertise regarding cluster development
- **Project Steering Committee:** This committee was given as its main role the coordination and input by participating agencies. It consisted of representatives of the 4 involved ministries and UNIDO representative.
- **A Programme Management Unit (PMU)** has been established in BEE and is coordinating all project activities

Financing plan summary - Outcome breakdown<sup>8</sup>

Project outcomes	Donor (GEF/other) (USD)	Co-Financing (USD)	Total (USD)
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	2,501,839	10,280,000	<b>12,781,839</b>
2. The level of end-use demand and implementation of EE and RE technologies and practices by MSMEs is increased	2,133,908	2,570,000	<b>4,703,908</b>
3. The project is scaled up to a national level.	1,409,776	5,140,000	<b>6,549,776</b>
4. Policy, institutional and decision-making Frameworks strengthened.	706,896	7,710,000	<b>8,416,896</b>
5. Project management	419,678	500,000	<b>919,678</b>
<b>Total (USD)</b>	<b>7,172,097</b>	<b>26,200,000</b>	<b>33,372,097</b>

## 2.5 Project Theory of Change

The theory of change (TOC) is a heuristic approach to help clarify the links between project activities and long-term objectives. Key in the development of a TOC is the identification of the conditions likely to bring about the behavioral changes required to achieve the long term goal of the project (Chen 1990; Mayne 2008). TOCs also support the identification of key

<sup>8</sup> Excerpt from UNIDO (December 2017) TERMS OF REFERENCE; Independent Mid-term Evaluation of UNIDO/GEF project: Promoting Energy Efficiency and Renewable Energy in Selected Micro, Small and Medium Enterprises (MSME) Clusters in India

elements that should – in due course – be evaluated. As such, TOCs are frequently used as the starting point for developing evaluation approaches and for identifying evaluation questions.

There was no explicit theory of change developed for this project. But the project documents and the logical framework provide information to construct a theory of change indicating how the project was expected to “...develop and promote a market environment for introducing energy efficiencies and enhanced use of RE technologies...”. The main conditions leading to the changes needed, to achieve the project goals are:

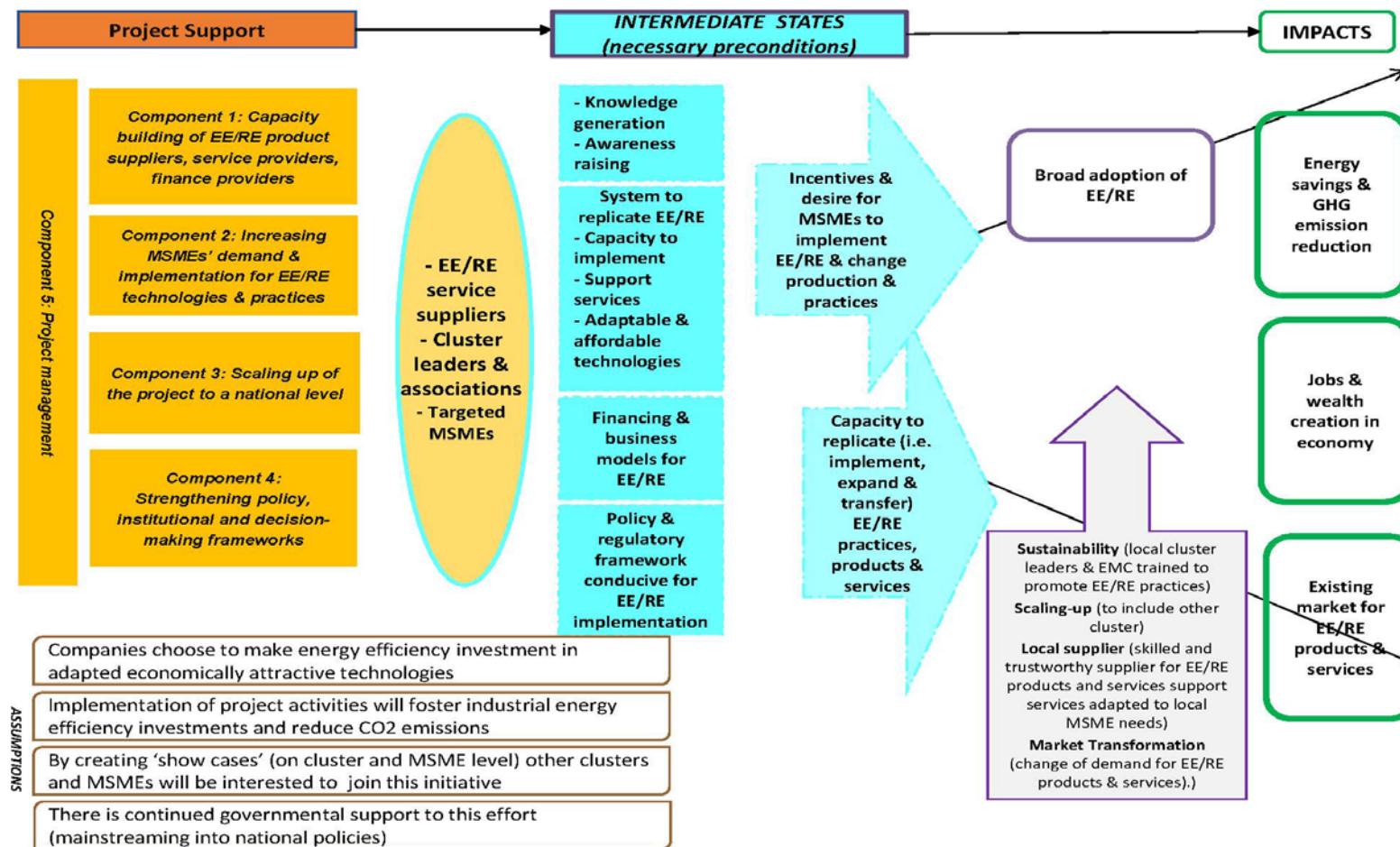
(i) MSMEs choose to implement EE/RE measures and are willing to make EE/RE investments to reduce overall carbon emissions and improve local environment, if:

- sufficient support is given by local suppliers of EE/RE products and services and local EMCs;
- EE/RE technologies are adjusted for local needs and show cases created
- financial support is given
- Return of Investment (ROI) for specific measures/investments is proven and within a certain timeframe

(ii) By successfully show casing the above in 12 selected clusters other clusters are willing to follow this EE/RE approach

(iii) By successfully show casing the above EE/RE approach can be mainstreamed into national policies and programmes for MSME development.

**Reconstructed Theory of Change – Promoting Energy Efficiency and Renewable Energy in Selected Micro, Small and Medium Enterprises (MSMEs) Clusters in India**



There were several important assumptions made during project development. Given that the objective of the project was to reduce overall carbon emissions and to improve the local environment, it was assumed that<sup>9</sup>:

- Companies choose to make energy efficiency investments
- EE/RE technologies are adaptable and economically attractive to MSMEs
- The implementing MSMEs will be able to operate Best Practices consistently over time
- The adapted technologies have a sufficiently low payback period to warrant investment and efforts to secure outside investment; effective financing models can be show cased.
- Macroeconomic conditions do not drastically alter prices/outputs from the industry
- The local service providers, cluster-level industry associations, and financial actors are sufficiently interested and able to implement these changes
- Other cluster-based organizations will be interested in this project
- There is continued governmental support for this effort

---

<sup>9</sup> UNIDO (17. Sept 2010) 103029\_CEO Endorsement, 17. Sept 2010, Annex A; Project Results Framework

## 3. Key Findings

### 3.1 Project Design Assessment

#### 3.1.1. Project Design and Relevance

At the industry level, this project is highly relevant for MSME cluster needs. Being small enterprises, often with limited profit margins, their greatest focus is in terms of financial savings. Energy efficiencies address this need and therefore technologies and pilot projects have been of interest in the MSME clusters where the project has been implemented so far. Additionally, as seen in some clusters such as the Coimbatore foundry cluster, an entry point activity of installing meters to reflect actual energy consumption, created interest in the project as it resulted in rationalizing costs. Activities with quick and visible results, such as this are likely to create interest among cluster industries for project activities and EE, as they result in immediate cost savings.

Apart from relevance, this project, at the cluster level also has a number of tools and activities such as the Energy Audits, BOPs and pilot projects. Each of these activities build on one another to improve awareness on possible energy and cost saving activities and ways to improve the management of energy in the specific clusters. While uptake and interest between clusters varies, after the initial energy audits in some clusters, such as Coimbatore and Khurja, industries where audits were not conducted also requested for an assessment of energy consumption and efficiencies of some of their systems. This has created a demand for pilot practices and DPRs for a number of projects have been developed.

Of a total of 1.3 billion people in India, about 240 million or 20%, are without access to electricity. It is also estimated that India's economy will be more than 5 times that of 2015 in the year 2040. Equally, India is also trying to re-balance the economy from a primary agriculture based to a service and manufacturing based – such as the 'Make in India' initiative that started in 2014. However, given the present energy situation, economic growth becomes a challenge. To address this, apart from increasing investment in energy generation, as enunciated in the energy policy, India is also focusing on energy efficiency, amongst other actions. <sup>10</sup> The BEE, under the Ministry of Power, Government of India, is the agency created to work on energy efficiency and also a project partner. This project therefore, is not only relevant to the MSMEs, but also to the goals of the national government and its vision for economic growth.

The project has an industrial cluster approach, where they were selected based on a multi-criteria analysis. The main criteria for their selection was high EE/RE potential, to maximize CO<sub>2</sub> reductions achievable, and high share of energy cost in total production cost plus the willingness of the MSMEs to participate. Furthermore, clusters were also identified as those where there had been little previous work on energy efficiency. Therefore, the outreach has been in areas where there has been little work before and may have resulted in some challenges to begin working and to have initiated interest. However, there has been, though with varying results within clusters, a significant number of energy efficiency actions initiated. Therefore, while about 10% of the industries in Coimbatore have taken up energy efficiency actions, in Thangadh specifically for industrial fans, about 30% of fans in the cluster have been changed to energy efficient versions.

---

<sup>10</sup> International Energy Agency, 2015. India Energy Outlook. World Energy Outlook Special Report. [www.ieo.org](http://www.ieo.org)

The Project components and activities are well targeted, clear and consistent. The emphasis on creation of a market (component 1) and demand (component 2) for EE/RE technologies and practices as well, seems to be a highly successful strategy.

At the national level the BEE and UNIDO partner with one another to implement the project. The PMU is located in BEE and is housed within the same office as other donor energy efficiency projects of BEE. The result has been regular interactions with other projects and BEE officials. The project has been active on the SAMEEKSHA platform, which is a knowledge sharing platform for facilitating the development of the SME sector in India through the promotion of clean, energy efficiency technologies and practices.

The locating of the national PMU at BEE has resulted in close collaboration and regular interactions, and therefore there is clear understanding and awareness of project activities and outcomes in BEE officials. This is very pertinent, given that the outcomes of the project are more likely to be used to inform the next national planning document of 2020.

At the cluster level the Energy Management Cells are housed in well-established associations for MSMEs in each cluster and in the oversight of the association management team. The Cluster Leaders, apart from their regular interaction with the national level PMU, also work in close collaboration with the EMC and cluster association where it is housed. Due to the well-developed network of the cluster associations, the activities of the EMC and the project within each cluster are well advertised and discussed. Therefore, members of the association are both aware and some have already started to use the services of the EMC. This platform has also helped to create some demand for energy efficient production within MSMEs.

Government of India, through its XI and XII five year and other plans such as the National Action Plan for Climate Change that include the National Mission for Enhanced Energy Efficiency, has been focusing on energy efficiency and renewable, as well as improved energy efficiencies and their technologies in the MSME sector. This project therefore, clearly targets the national priorities and plans for both MSME and climate change.

Furthermore, it is also fully in line with UNIDO's focus, SDG 8 on inclusive industrial development and SDG 9: "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.", for which UNIDO has taken primary responsibility.

For the Global Environment facility (GEF), a project must be driven by the country and be consistent with national priorities that support sustainable development. It has to address one or more of the GEF focal area strategies. As explained in this chapter this is true for this project and therefore it is in line with GEF strategies and highly relevant according to their focal area strategies<sup>11</sup>.

### **3.1.2. Results framework and progress, reflections on the Theory of Change**

The project has been monitoring and documenting its achievements against the Project Results Framework. In a presentation in the last PSC meeting, component wise results were shared by the UNIDO team with key stakeholders.

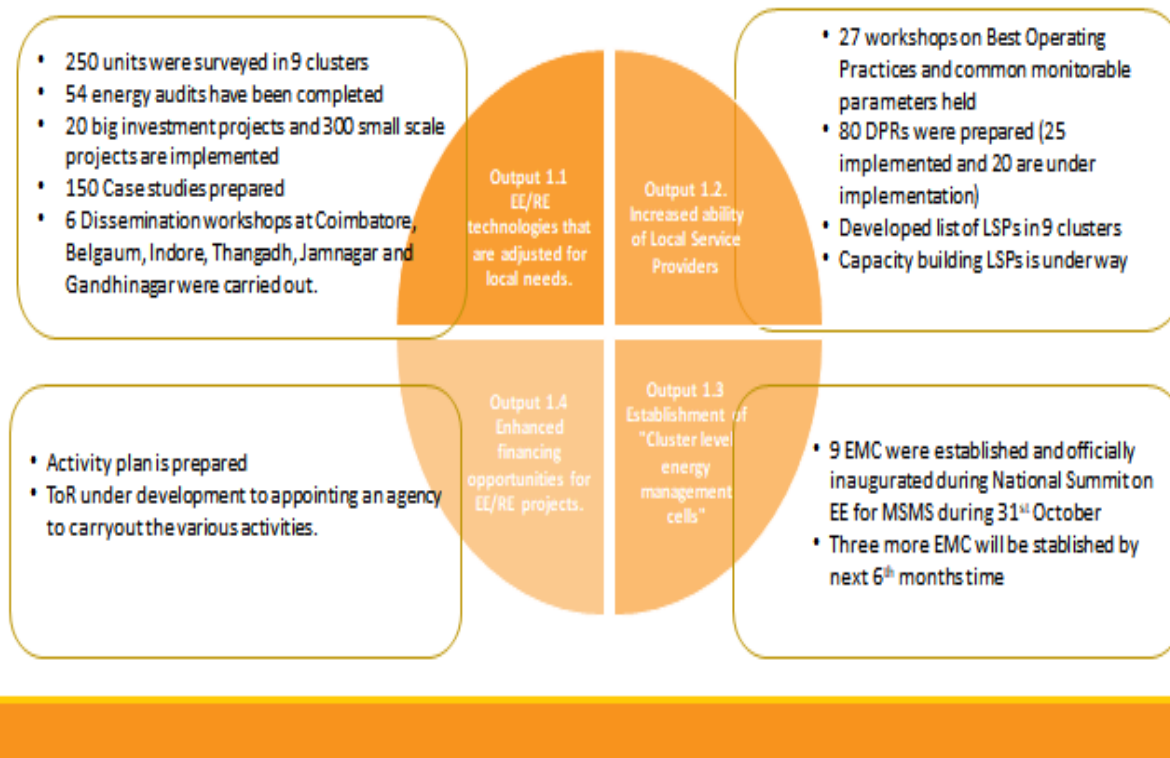
---

<sup>11</sup> GEF-eligibility criteria and focal area strategies, <https://www.thegef.org/documents/gef-6-programming-directions> accessed on 22.04.2018



Presently, while the project has already achieved many of its targets, of the 12 clusters three have only recently come onboard. These are the Morbi Ceramic cluster and the Kerala and Sikkim Dairy clusters. Therefore, the achievements on the project so far are mainly reflective of activities that have taken place in nine clusters.

**Component 1: Increased capacity of suppliers of EE/RE product suppliers/ service providers/ finance providers**



**Achievements for Component 1 (Nov 2017)<sup>12</sup>**

At the output level, in Component 1, the project by November 2017 has achieved or has been nearly achieving several its targets. Activities where the project has had several achievements include:

- Developing BOPs for nine clusters
- Preparing 150 case studies, even though the output identified was one for each sector.
- Conducting of 27 workshops for BOPs and common monitorable parameters and 6 dissemination workshops. This is higher than the Objectively Verifiable Indicator (OVI) planned - at least 16. Therefore, this target has been met.
- Adjusting existing technologies for introduction of at least 12 emerging/improved EE/RE technologies or BOPS. It is not fully clear how this parameter is monitored (How to define an improved technology?), but during field visits many technologies

<sup>12</sup> Excerpt from PPT presentation (GEF-UNIDO-BEE - 6th PSC - 02-11-17-V1) given by Niranjana Devala during PSC meeting 2<sup>nd</sup> November 2017

or good practices (more than 12) were observed. Given the pilot projects in the pipeline, this target will be overachieved.

- Implementing LSP training, which have recently started in the clusters. The joint understanding of a potential market for EE/RE technologies is evolving, and the business case is starting to pick up
- Preparing DPRs by LSPs, has started, and of a total of 200 DPR to be prepared by them, about 100 have been prepared by cluster leaders and LSP. As the LSP specific training has just started, more DPRs can be expected to ready up soon.
- Creating EMCs, one each in all 12 clusters, has been completed. Needs have been assessed, a set of metering/monitoring tools has been purchased and a cluster leader has been put in place. Companies have started to request for service/support from EMC.
- Planning to train banking/investor experts is presently underway.

**Component 2: Increasing the level of end-use demand and implementation of EE and RE technologies and practices by MSMEs**

*Output 2.1 Increased demand for EE/RE products/services and increased ability to apply for financing among the MSME units for EE & RE Projects.*

- 4 demo projects implemented at Belgaum, Coimbatore, Indore and Gujarat clusters
- 3 demo projects are under implementation at Coimbatore, and Jalandhar and 42 projects are under evaluation
- More than 300 projects are implemented by SME units with the help of cluster leaders
- Approximately 7500 (28W) EE ceiling fans were installed at Thangadh

*Output 2.2 An increase in the awareness and implementation of Best Operating Procedures for energy management in MSMEs.*

- Best operating practices (BOP) developed and shared
- 27 awareness cum training workshops were held to disseminate the BOPs and CMPs
- BOP and CMP booklets and posters are publishing and shared among the MSME units

Progress on **Component 2** is noted below:

- Awareness generation and training for entrepreneurs is underway. Of the planned 50 workshops, 27 have been already conducted.
- Implementing of pilot projects has started, 3 projects of 29 Pilot Projects implemented so far. Another 42 are under evaluation. Also, 300 projects have been implemented by MSME units with the support of the cluster leaders.
- Preparation of DPRs is underway, with 80 of a total of 200 bankable DPRs prepared.
- Preparation of tailor-made BOPs and CMP, according to individual cluster needs and based on best, viable practice for MSMEs has taken place.
- Implementation of 300 projects has taken place in MSME units, although a total of 120 EE/RE measures were planned the project.
- Financial assistance for projects by MSMEs was planned under the project, with at least 100 applications to be submitted by MSMEs and 36 additional funded. However, there is little evidence of this so far.

### **Component 3: Scaling up of the project to a national level**

<p><i>Output 3.1 Cooperation and synergies established and enhanced within the project clusters.</i></p>	<ul style="list-style-type: none"> <li>• Nagaur cluster visited Jodhpur and Jalandhar hand tool clusters</li> <li>• Sikkim Milk Union visited Amulfed Dairy, Gandhinagar</li> <li>• Three international study tours organized</li> <li>• Indore Country Cluster Visited</li> <li>• Indore Foundry Cluster visited Belgaum Foundry Cluster</li> <li>• Case studies and brochure were uploaded on GEF-WB- BEE project website and sameeksha website</li> </ul>
<p><i>Output 3.2 Expansion of the project to affect new clusters at a later date throughout the country</i></p>	<ul style="list-style-type: none"> <li>• This will be initiated at advance stage of the project (Beginning of - 2018)</li> </ul>

### **Component 4: Strengthening policy, institutional and decision-making frameworks**

<p><i>Output 4.1 Improved monitoring and evaluation of energy use and development of a benchmarking system</i></p>	<ul style="list-style-type: none"> <li>• Demonstration project on energy information gathering and analytics will support this.</li> <li>• In addition to that, cluster leaders have done surveys in respective clusters and regular upkeep the records</li> </ul>
<p><i>Output 4.2 Mainstreaming EE and RE into national policies and programs on MSMEs Development</i></p>	<ul style="list-style-type: none"> <li>• This activity will be taken up at the end of the project.</li> <li>• Expert consultant will be hired to develop strategies and policies.</li> </ul>

Achievements for component 3 and 4 (Nov 2017) see footnote 12

Implementation under component 3 is also under progress, and achievements are highlighted below.

- At least 7 exchange /study tours were envisaged for knowledge exchange under the project. All seven exchange/study tours have been conducted, including for the Sikkim cluster which has only recently become operational. Therefore, this target has already been met. Additional study tours to foster cross cluster/sector learning (international and national) are planned.
- The SAMEEEKSHA and GEF-WB-BEE project website have uploaded cases studies and brochures for information dissemination.
- Further actions under the output are presently underway and to be initiated in 2018.

#### Progress under **Component 4**

- Cluster leaders are undertaking surveys in their clusters and maintain regular reports. MSMEs have also been requesting the energy cells to do energy assessments in their enterprises.
- Other activities, especially on metering (harvesting) savings from project implementation and benchmarking - component 4.1. (to be started as soon as possible) are to be taken up in the remaining project time.
- Especially for component 4.2, the actual project structure (4 ministries as main stakeholders) is a strong base for mainstreaming EE/RE into national policies.

#### **Reflection on TOC**

It is visible that the reconstructed TOC reflects change, already taking place in some of the project components. The number of locally available service providers or product suppliers has been already increased and technologies are adapted to local needs.<sup>13</sup> Together, through networking with other project beneficiaries and awareness creation, this activity has kick started an increased demand for EE/RE technologies in some of the selected cluster.

Transitions in MSME in the clusters from energy inefficient to more energy efficient is evident. While, presently this may cover few industries of the cluster, awareness and actions to reduce energy consumption has been started by enterprise in all clusters which were taken up in the initial phase. Furthermore, there is increasing understanding, demand and interest among the individual industries on EE. Much of the requirements of the intermediate state are in place, though some like the capacity and interest of FIs in supporting EE/RE actions, may need further action. However, as MSMEs have lower capacities and are likely to take longer to understand, absorb and take up actions beyond their immediate needs of production and profit, it is likely outcomes might take longer to be completely visible.

### **3.2 Project Implementation and Management**

#### **3.2.1. Project Management**

Monitoring and evaluation design included the Project Results Framework (Logframe) with OVIs at outcome and output levels. There are achievable indicators provided for the main outputs and are regularly monitored. Sufficient resources allocated to this task.

---

<sup>13</sup> See chapter 3.4.3 impact

Most of the targets provided are consistent with the activities described, but the Logframe has not been revised/adapted since project start in 2010. It is not seen as a management tool, but more as a 'rigid, binding document' and part of the contract.

The cooperation between UNIDO country team and Project team in HQ is running effectively, reporting is done on a regular basis and timely follow up actions. HR policy (contracting of local team members, one-year contract) seems to be a barrier for getting skilled personnel on board.

### **3.2.2. Results based monitoring, evaluation and reporting**

The Project has a functioning M&E system (e.g. activity based for cluster leaders) and reports from each cluster are monitored and compiled accordingly.

All activities are monitored, minutes, workplans and attendance sheets are available, but attendance sheets do not include a separate column to monitor gender of participant.

The annual reporting on PIR is carried out at outcome and output level. Results are regularly traced against overall objectives and discussed with the main stakeholders. The PSC meets annually and takes decisions as mandated, this is documented in meeting minutes. In these meeting, project extension and budget allocations have been discussed and jointly agreed between all PSC members. Calculations for CO<sub>2</sub>/GHG reductions are reasonable and traceable. Metering of 'real' savings in the field is not done yet, as the decision on its necessity has not been taken.

### **3.2.3. Stakeholder engagement and communication**

On cluster level engagement and communication is functioning well. EMCs are well established; BOPs represent best, viable practice and MSMEs are aware of them and use them. Also, the CMP is seen as helpful. A lot of implementations can be seen on the ground. In some clusters the translation of documents into local language is done or planned, other clusters do not see the need.

Some of the cluster associations are more active than others. The transfer of learnings from one cluster to another cluster will be crucial for project success.

## **3.3 Gender mainstreaming**

Although in India some clusters have a large female workforce, gender mainstreaming has not been a part of the project design or an objective of this project. Clusters were identified for being energy intensive and where little work had been done before, so as to create high impact. Therefore, gender mainstreaming has also not been a part of the project design nor any monitoring activities. Furthermore, typically in the selected industrial sector, there is limited female participation (maybe except for ceramics cluster in Khurja), making this focus of activity an additional challenge.

Equally, UNIDO's gender policy was issued in 2015 and has not been included as a part of project activities retrospectively.

## **3.4 Project performance towards results**

### **3.4.1. Efficiency**

The project, especially at the initial stages faced a few delays. This has resulted in the extension of the project by more than 3 years. Most of this has been attributed to some flaws

in the project design regarding the funds transfer arrangement and bureaucratic issues of compliance with BEE and UNIDO procedures and policies. However, some delays have also been due to recruitment of staff and the establishment of the PMU office at the national level. On the other hand, this delay, while having extended the project from August 2016 to December 2019, is only seen a concern at the national level.

At the cluster level the project is seen as having started in 2014 and therefore, as a 5-year project, expected to end in 2019. However, the delays that concern the enterprises are approval of DPRs and the implementation of pilot projects. Typically, it takes a few months (at least 3 months) for a DPR to be approved, by which time many SMEs loose interest in the project and prefer to invest their time and finances in other activities.

In terms of cost-efficiency, it can be stated, that the project has already achieved a fair number of the expected outcomes with around 70% of the funds remaining. At the current stage of the project the cost efficiency is excellent.

The implementation of the project within clusters maximizes impact through the LSP training activities, with limited budget. The LSP trainings at the cluster level have a mixed group of participants and include service providers, industry heads and utility managers and other officials of various SMEs. This provides an opportunity for the LSPs and the SMEs to network and identify common grounds to improve energy efficiencies in individual enterprises. These LSP trainings are therefore of high value and create an efficient and quick outreach platform.

However, there are some clusters, such as the Morbi Ceramic Cluster, the Kerala Dairy Cluster and the Sikkim Dairy Cluster that have been brought on board only recently. Of these, the Morbi cluster had previously been active and became inactive in between, to be revived only recently. To ensure sustainability of outcomes and long-term interest in EE and RE activity in the recently included clusters, planning and implementation of activities needs to be efficient; as there are less than two years before the project ends.

#### **3.4.2. Effectiveness**

The project, as a part of its design, focused on working with clusters which were high energy intensive and with little or no previous similar work done. This strategy has been very effective, as there is a real interest from industries to get more information on technology and support for improving energy efficiency; an area where the cluster enterprises previously had limited access.

Overall 12 clusters have been identified, of which all but the Gujarat Dairy cluster are representative of typical MSME clusters, with a mix of micro to small and medium enterprises of similar activities clustered in an area. The Gujarat Dairy cluster is a cooperative dairy cluster, which while not typical of a SME, does provide a platform for taking up various EE activities that are likely to spread through its network of more than 70 units. Therefore, its inclusion is likely to create awareness and provide showcases for others in the sector.

A number of MSMEs have been active participants in the project due to their membership with the associations where the EMC has been placed and whose meetings have also been a platform for discussing the project.

LSPs identified for partnering in the project activities are largely from or near the clusters and therefore, easily accessible to the cluster enterprises. Also, these LSPs profile represent various sizes and types of services in each cluster. Equally, the training platform under the project, creates an opportunity for them to display - and furthermore improve and expand - their services and technologies.

However, in most cases the outreach is still limited. Other than a few pilot initiatives and some energy audits or metering activities, there has been limited up take of energy efficient technologies or activities. For example, in Coimbatore, one of the better performing clusters, only about 10% of industries have taken up EE activities.

With most OVIs likely to be met and a larger part of the budget left unused, the remaining budget could be utilized to increase the outreach considerably and also to create a big enough market for EE/RE products and services to ensure sustainability.

### **3.4.3. Impact**

The physical location for national Project Management Unit (PMU) is the BEE office and helps efficient coordination between the PMU and various BEE officials. There are also a number of other donor/multilateral/bilateral agency projects located in the same office. Therefore, learnings from this project have a greater chance of being heard and taken up in other projects and activities. Also, outcomes of this project can be used to inform national government plans and policies due to the regular interaction between the project staff and the BEE officials.

At the cluster level, the project is located in existing and functioning industrial associations. The EMC is a part of the association and major cluster actors have been involved in project activities. This has created a higher visibility for the project and resulted in a larger impact than working either through a separate identity or through the BEE counterpart at the state level. Similarly, energy audits and the discussion and dissemination of the audit findings have increased awareness and demand for energy management within industries. This has resulted in a number of pilot projects and requests for evaluation for energy efficiency within individual industries in the cluster.

The project has created a network between the MSMEs, the service providers and the UNIDO project through the cluster leaders and local PMU representatives. This has resulted in greater awareness on various technologies available for improved energy efficiencies for local industries and has thereby created demand for implementing EE activities.

The adaption of technologies fitted to local MSME needs is visible. Following technologies/good practices have been seen during MTE cluster visit:

- Improved Cupola Furnace (Airflow, use of excess heat...)
- Energy efficient compressors, compressor operations (pressure setting, utilization), pipeline layout, VFD for compressors
- Energy efficient lightning, energy efficient fans
- Improvement in the induction furnaces (operations, monitoring, technology, software)
- Parabolic concentrated solar
- Kiln practices, heat reuse, surface insulation, low mass kiln car
- Steam condensate recovery
- Bio - Methanization
- Centralized chillers, improved chiller operations (VFDs)
- Improved boiler operations (flue gas, oil to gas, insulation...)
- Training of operators and supervisors
- Improved metering and monitoring (with and without support of EMCs)



With all these improvements in the target group the project is directly contributing to CO<sub>2</sub>/GHG reduction. The project staff has prepared a table from all improvements and planned implementations (pilot projects) to calculate the savings (monetary and energy). From the energy savings, all data is converted into CO<sub>2</sub> equivalents. As per this calculation all implementations triggered by the project are contributing to overall savings of 42,000 tons every year so far, i.e. 50% of the expected impact and if calculation is done cumulatively, project has almost achieved CO<sub>2</sub> emission reduction target for 10 years – which is a great interim result at this stage of the project. (*Lakh = Hundred thousand*)

**Small Scale Implementations**  
by MSME units with support from project

Cluster Name	Small Scale Projects	Energy Savings (MTOE)	CO <sub>2</sub> Reduction (Tonnes)	Monetary Savings (Lakh ₹)	Investment (Lakh ₹)
Jalandhar	28	64	40	629	86
Coimbatore	58	247	1892	179	119
Nagaur	39	19	190	21	4
Jamnagar	40	95	573	65	163
Khurja	3	86	207	40	4
Indore	19	63	163	32	15
Gujarat	66	5365	27338	1776	1444
Belgaum	52	231	1526	130	183
Thangadh	3	356	2119	203	452
<b>Total</b>	<b>308</b>	<b>6526</b>	<b>34049</b>	<b>3075</b>	<b>2470</b>

Table of implementation by MSMEs and calculation of savings and CO<sub>2</sub> reduction. –see footnote 12<sup>14</sup>

At this stage of the project actual metering for savings and GHG reduction is not done. For the final 2 years a specific focus on actual savings (baseline data from Energy Audit Report (EAR) against actual consumption figures) could be considered and put into practice.

**3.4.4. Sustainability**

The project is located in BEE and therefore learnings from the project are directly absorbed and influence and inform BEE activities. Furthermore, as the BEE, which is a part of the Ministry of Power, will provide its inputs for the national 3-year plan to be implemented in 2020 and EE learnings from this project are likely to inform BEE’s inputs. This will create long term sustainability of project outcomes.

MSMEs a part of the association, where the project is housed, have been actively watching project activities and discussing the outcomes and activities in their association meetings. This has created an interest and awareness in the MSMEs. It has also resulted in an improved capacity to identify and work towards energy efficiency in the cluster enterprises.

<sup>14</sup> This chart is representing the status from November 2017, the figure given in previous paragraph show actual status as per March 2018

The project has created a number –and will create an even bigger number - of easy to implement and successful show cases tailored for individual clusters. Many of them, such as efficient operation practices, LED lighting and low energy consuming industrial fans are low-cost solutions. Therefore, there are now a number of technologies and activities that can be easily implemented to reduce energy consumption in industries. This coupled with the existing and strengthened LSPs, is likely to result in a spread of similar actions in other enterprises within the cluster as several LSPs start to see the big market opportunity for EE/RE services and products.

The EMC is a very good way to support SMEs in each cluster to monitor their energy consumption and identify ways to increase energy efficiency. These EMCs are located in local associations of project clusters. Therefore, they are ideally placed to have their services used and to be available to the association members and others in the cluster even after the project ends. However, as of now, most cluster enterprises expect the services to be at no charge given the initial services were free of cost and there is insufficient willingness to pay for its use.

The unwillingness to pay for this kind of services indicates a major risk for project sustainability. This seems to be a negative impact of funding this kind of service from the project, so the ‘full’ value is not recognized by beneficiaries. Without adequate financial support and payment for these services, it is unlikely that the EMC will be able to function. Considering the EMC is an essential part of identification of EE needs in the industries, this is an important link for long term sustainability of efforts undertaken by the project.

### **3.5 Performance of partners**

Ministry of Small and Medium Enterprises, Ministry of New and Renewable Energy and Ministry of Environment Forest and Climate Change (in 6th PSC only) were present in the PSC meetings, but their active role and participation was not visible during the MTE.

The collaboration of the implementing partners from BEE and UNIDO is functioning quite well. But the structure of this collaboration is causing delays as both organizations have to follow their own administrative rules (e.g. purchasing, HR contracting,...).

The UNIDO India team is regularly reporting to HQ in Vienna and sufficient support is given from the project manager. The cooperation within UNIDO, the National Technology Coordinator and UNIDO representative and other involved experts is fully functioning. National Project Manager position has been vacant for about 20 months, though the National Technology Coordinator and his team could compensate and fill the gap<sup>15</sup> so far.

Excellent communication and relationship between UNIDO and PMUs in clusters is assured by regular emails, phone calls and visits, but there is not much interaction between the local clusters and little involvement in overall project planning. Cross cluster learning has just started and needs a stronger focus in the remaining project period.

In several PSC meetings (e.g. 5th PSC MoM) the assistance/cooperation with other funding schemes and the linkage with other project activities on EE/RE has been discussed. Project beneficiaries have been informed through workshops and trainings about various government initiatives, activities and funding schemes that support EE/RE. However, the beneficiaries

---

<sup>15</sup> After country visit in February a National Project Manager was finally assigned. Mr. Suresh Kennit started to work on project in March

showed limited interest in these schemes and activities. Some of the barrier identified that results in limited take up of these schemes by the MSMEs include, time consuming processes to access the schemes along with, high levels bureaucracy and low reimbursement rates.

Another concern has been the time taken for the approval of proposals and DPR. These often tend to take time and result in the loss of interest at the ground level.

Role of BEE: The position of the Director General was vacant for some time, which delayed necessary decisions and project activities. However, presently both the Director General and Director are in place and are fully in the picture and support the project actively. For PMU a sufficient number of experts are working and all 12 cluster leaders are in place to run the project in the clusters. During several discussions the issue of getting the needed experts on board and retain them for the full project period, was raised and was especially difficult for BEE. The cause may be BEEs HR policy (one-year contracts only, with option for extension...)

It was also visible that internal procurement procedures are causing delays, e.g. approval of pilot projects, which seems to be a high risk at current project stage.

The GEF focal point is informed about project results existing status on a regular basis. However, there is limited active participation in the planning and implementation of the project.

## 4. Conclusions

### 4.1 Major reflections and lessons learnt

Overall, the project has performed well and there have been a number of successful showcases and activities performed. In many areas the project has not only achieved its targets yet but will most likely exceed them before project end. However, there are other areas where the project – considering the still available funds- may need to put more effort to achieve – or even overachieve - its planned goals. This MTE, using both the expected achievements as stated in the OVIs and the planned outcomes of the reconstructed TOC, has reflected on the project's direction, achievements and strengths. Based on this evaluation, lessons learnt, areas for further action and emerging issues have been identified.

Following are the main findings of the MTE:

- The project design flaw related to funds transfer and contract arrangement has resulted in almost 2 years delay in project start. Neither UNIDO nor BEE was prepared for contracting arrangements at the starting phase. Now a more flexible contract arrangement and cooperation is in place and therefore this system that can be used in the future.
- The location of the PMU in BEE is appropriate as it results in absorption of learning from the project into national policies and plans.
- The selection of clusters has been done well, as it has been little work done on EE/RE previously and there is an interest among many cluster members to take up EE activities.
- Project and activity approval between partners takes time, given the present project implementation structure. This has caused the enterprises to lose interest, which is likely to reduce uptake of project activities.
- The timeline was unrealistic as working with MSMEs to understand energy management, to bring implementations to the ground may require a longer gestation period
- It is essential to create a sustainable marketing demand to ensure long term EE/RE uptake after project end. Therefore multiple 'locally created' showcases are needed.
- The project work is tailored to the cluster needs, given the high variability of the different clusters. The BOPs are relevant for designed beneficiaries and tailor-made to their needs and understanding.
- The impact of demonstration is key to create awareness on and a market for EE/RE and has resulted in the spread of improved energy efficiencies in cluster industries.
- The use of exposure visits has supported learning and implementation, as industries understand the value of technologies for EE/RE faster after seeing similar actions implemented by other industries. Also, they are able to understand possible risks/or lack of risks involved in improving EE more easily.
- The use of a 'leader' to show case technologies and systems to reduce energy consumption to be shared by others is an efficient way to highlight the benefits of projects, as is the case with the Amul Dairy. Amul, are not only willing to try new technologies and take some (financial) risk; but are also willing to share their information with others in their clusters or other clusters of the project.

- Leader industries, as seen in the case of a larger industry in Khurja, may also be able to position themselves as LSPs and therefore apart from the already existing LSPs, new entrepreneurial industries might also, with some project support, provide new and improved technologies of value for other cluster members. EMCs are seen to have high value in the clusters and individual MSMEs are requesting for audits/checking of some of their systems for energy efficiency. However, their willingness to pay the complete cost for the service is low.
- Leaders (those who are the first to adopt and benefit from project activities) are likely to be larger enterprises, with more manpower to devote to activities and funds to utilize for EE activities. The larger industries have been quicker at taking up and initiating activities in the piloting phase, and there are fewer small and micro enterprises who are likely to benefit equally from project activities
- While MSMEs are all interested in reducing costs, many often do not have the time or the capacity to undertake or even consider any activity beyond the day-to-day running of their enterprise, more so for the smaller industries. They also often have limited financial resources. Therefore, getting smaller enterprises involved in EE/RE activities is a challenge and can be time consuming. Hence, they will not benefit from a project that takes all MSMEs to be equal. To get more small and micro industries on board it is necessary to have very specific targeting and appropriate timelines.
- Overall, the industries in the clusters seem to have a low risk-taking appetite and therefore are unlikely to take a loan for EE activities. Where loans are to be taken, it is from existing systems in the cluster and is unlikely to be from FIs as envisaged under the project design.
- All members of the MSME clusters are unlikely to share their information and results of actions after energy audits as they might fear a loss in competitive advantage. Therefore, monitoring outcomes and impacts might be a challenge, as will the ability to learn lessons and replicate good practices from all activities under the project.

## 5. Recommendations

### 5.1 Areas of immediate action

Based on the finding of this MTE and the discussions during the country visit and in UNIDO HQ, the involved project partners should have a planning meeting as soon as possible to come up with a joint decision whether to:

- utilize the remaining funds within the given time limits
- to 'redesign' the project with a realistic and appropriate timeframe
- to close project in time without utilizing all funds

### 5.2 Other required actions

#### PMU, national and cluster level<sup>16</sup>

With the decision on the remaining time period, the project work plan has to be revised and the Project Logical Framework (Outcomes, outputs and / or OVs) should be reviewed and adapted to the actual situation especially focusing on the remaining time for project implementation. The Project Logical Framework is a strong management tool and should be used during project meeting to increase ownership.

After finalizing an updated project plan (either for remaining or an extended period) a meeting with all cluster team members should be organized to ensure a common understanding and smooth execution of the revised project work.<sup>17</sup>

One specific focus could be on more direct support (handholding) for MSMEs to foster implementation. Fast implementation of the Pilot Projects needs to be considered as this will further increase interest in the project by other cluster members.

It is also recommended to plan and work towards creating a self-sustaining model for the Energy Management Cell, as this will be core for long term EE in the clusters

There may be a need to find a way to include small and tiny industries through specific components or programmes for them. An extra component for small and micro industries could include readymade options/offers by local service providers. For example, offer on EE motors including funding scheme / loan options and support to apply for the scheme.

The project may also consider linking to other projects on Resource Efficiency and Cleaner Production (RECP) in general, not only in India, but also other South Asian Association for Regional Cooperation countries (SAARC), e.g. initiating an experience sharing event.

Given the high intensity of project activities and large number of project activities, it is suggested that a person be specifically hired for communication and project visibility.

---

<sup>16</sup> The term PMU is used for Programme Management Unit at national level, but also on cluster level. So, there is a PMU at BEE and 1 in each cluster.

<sup>17</sup> This meeting has been already conducted and took place on 17<sup>th</sup> of March in Indore, meeting minutes are available at PMU

## **UNIDO**

Procedures for decision making and procurement (also on HR) should be accelerated.

With the actual HR policy (one-year contract with possibility to extend for project staff), it is difficult to get an efficient team on board, as in India qualified experts are more interested on long term engagements.

On Project management level several measures to create a common understanding and stronger ownership will back up project success. These could include team meetings and joint planning sessions with all cluster leader, amongst others.

## **BEE**

Procedures for decision making and procurement (also on HR) should be accelerated. With the actual HR policy (one-year contract with possibility to extend), it is difficult to get an efficient team on board. This is mainly as in India qualified experts are more interested on long term engagements.

## **PSC**

Metering/monitoring of actual savings at the company level has not started yet. From the endorsement document and the project framework it is not strictly required. It is not clear (or not decided yet), whether this will be done at the end of the project. However, metering of these savings in the field needs a specific focus and design and is also very time consuming. Starting this activity should be decided soon by PSC and resource have to be allocated for it.

## **Cluster level**

A stronger involvement in project (re)planning at cluster level will increase the ownership for activities and hence support project outputs. As the level of achievements differ strongly between all 12 clusters, a clear and jointly agreed timetable on the steps for final project period should be prepared for each cluster.

The cross-cluster learning has already started and shows success. However, fostering this activity at this stage of the project well be needed.

## **Annex 1. Terms of Reference**



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

### **TERMS OF REFERENCE**

Independent mid-term evaluation of UNIDO project:

Promoting Energy Efficiency and Renewable Energy in Selected Micro, Small  
and Medium Enterprises (MSME) Clusters in India

UNIDO PROJECT ID: 103029

GEF Project ID: 3553

December 2017



## Contents

- I. Project description, background and context
  1. Project factsheet
  2. Project context1
  3. Project objective
  4. Project implementation arrangements
  5. Budget information
- II. Purpose and scope of the evaluation
- III. Evaluation criteria and key questions
- IV. Evaluation approach and methodology
- V. Time schedule and deliverables
- VI. Evaluation team composition
- VII. Reporting
- VIII. Quality assurance

Annex 1: Project Results Framework

Annex 2: Detailed questions to assess evaluation criteria

Annex 3: Job descriptions

Annex 4- Outline of an in-depth project evaluation report

Annex 5: Checklist on evaluation report quality

Annex 6: Guidance on integrating gender in evaluations of UNIDO projects and programmes

Table 1. Financing plan summary

Table 2. Financing plan summary - Outcome breakdown

Table 3. Co-financing source breakdown

Table 4. UNIDO budget execution (US Dollars)

Table 5. UNIDO budget execution (EUR Grants)

Table 6. Tentative schedule

## I. Project description, background and context

### 1. Project factsheet<sup>18</sup>

Project title	Promoting Energy Efficiency and Renewable Energy in Selected Micro, Small and Medium Enterprises (MSME) Clusters in India
PROJECT ID	103029
GEF Project ID	3553
Region	Asia and the Pacific
Country	India
Project donor(s)	GEF
Project implementation start date	10/26/2011
Expected duration	98 months
Expected implementation end date	31 December 2019
GEF Focal Areas and Operational Project	Climate change
Other executing Partners	Bureau of Energy Efficiency (BEE), Ministry of Micro, Small and Medium Enterprises (MSME), Ministry of New and Renewable Sources of Energy
Executing partners	UNIDO
UNIDO RBM code	GC31 (RECP & LowCarbonPrd)
Donor fundingDonor funding	7,172,097
Project GEF CEO endorsement / approval dateProject GEF CEO endorsement / approval date	4/1/2010
UNIDO input (in kind, USD)	500,000 Cash and In-Kind
Co-financing at CEO Endorsement, as applicableCo-financing at CEO Endorsement, as applicable	Bureau of Energy Efficiency (BEE), <u>2,000,000 Cash and In-Kind</u> Ministry of Micro, Small and Medium Enterprises (MSME), <u>17,000,000 Cash and In-Kind</u> Ministry of New and Renewable Energy, <u>6,700,000 Cash and In-Kind</u>
Total project costTotal project cost (USD)	33,372,097
Mid-term review date	2/1/2018
Planned terminal evaluation date	Nov 2019

(Source: Project document)

### 2. Project context<sup>1</sup>

India is one of the major nations with growing energy usage and subsequent CO<sub>2</sub>eq emissions. Within the Indian economy, in terms of primary energy consumption, industry remains the largest consumer of energy – accounting for over 50% of total energy consumption in the country. Indian industries

<sup>18</sup> Data to be validated by the Consultant

mostly rely on coal, oil and gas for primary energy. Among these, coal continues to be the dominant fuel.

Within industry, there are many Micro, Small, and Medium-sized Enterprises (MSME) which carry out energy and emissions-intensive activities in sectors such as the metallurgical and metals industry, glass and ceramics industry, agricultural activities, and brick-making. In most of these MSME sectors, energy cost accounts for as much as 20%–30% of the total cost of production.

At the same time as being energy intensive, the industrial sector – especially the industrial MSME sector – plays a vital role in the Indian economy, with 13 million MSMEs estimated to operate in India at the time of project commencement, contributing around 45% of manufacturing output, producing about 40% of exports and employing more than 40 million people.

MSMEs mobilize local capital and skills, and thereby provide the impetus for growth and development, particularly in rural areas and small towns. They are often organised into “clusters, often with some form of central organisation, which work for the development of the many MSME’s often called “units”. These clusters provide the bases for UNIDO to leverage the existing organisational structure to carry out outreach to hundreds of units with limited resources.

A study commissioned by Bureau of Energy Efficiency (BEE) estimated the total potential for electricity saving at 75.36 billion KWh, of which nearly a quarter (i.e., 18.57 billion KWh) corresponded to the industry sector as a whole, including small and medium enterprises. To put this in perspective, this represented approximately 3.6% of the entire energy demand in India in 2006.

Energy represents an important and expensive factor of production for industrial MSMEs – particularly in energy-intensive sectors such as mineral processing (ceramics, tiles, pottery, brick, glass etc.), metallurgical and metal industries (foundries, forging, alloys, heat treatment, steel re-rolling, etc.) and agro and food processing (bakeries, dairies, rice mills, etc.).

The MSMEs in these sectors currently use significant amounts of electricity as well as large quantities of fossil fuels (about 65 Mtoe) and/or biomass to meet their thermal energy requirements. These fuels are often in the form of furnace oil, diesel, natural gas and coal or traditional biomass fuels to meet their thermal heat requirements.

Most importantly for this project, the MSMEs in these sectors largely depend on inefficient equipment and technology. This leads to wastage of fuel; it also results in release of substantial CO<sub>2</sub> and particulate emissions.

Recognizing the importance of EE/RE for the industrial MSME sector, the Government of India and various state governments have taken a number of policy measures to promote the adoption of EE and RE in the MSME sector. The ‘National Action Plan on Climate Change’ (NAPCC), prepared by the Prime Minister’s Council on Climate Change, is being implemented through eight National Missions, one of which is the ‘National Mission for Enhanced Energy Efficiency’ and provides a framework for policy interventions to achieve the twin goals of improving energy performance and reducing greenhouse gas emissions.

A number of barriers to the functioning of the EE/RE market for industrial MSMEs, which the project aimed to address, include lack of technical know-how for producing EE products and services; paucity of local providers to sustain EE/RE (e.g. maintenance and repair) lack of awareness on the financial benefits; barriers restricting the national uptake and implementation of EE/RE technology and

services, e.g. lack of knowledge sharing and information dissemination; and barriers in the policy and knowledge within governmental institutions for the implementation of EE/RE technology and services, such as lack of mainstreaming EE/RE technologies into the development plans and policies for MSMEs development.

### **3. Project objective**

The aim of the project is to develop and promote a market environment for introducing energy efficiencies and enhanced use of RE technologies in process applications in 12 selected energy-intensive MSME clusters<sup>19</sup> in India with expansion to more clusters later, in order to improve the productivity and competitiveness of units as well as to reduce overall carbon emissions and improve the local environment. The project will work at cluster levels as well as policy level to achieve its aim.

The promotion of energy efficiency and renewable energy in selected MSME clusters was envisaged through the following four components and related expected outcomes:

Component 1 – Increased capacity of suppliers of EE/RE product suppliers/service providers/finance providers to support the expansion of EE/RE in the clusters.

*Expected Outcomes:*

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.

Component 2 – Increasing the level of end-use demand and implementation of EE and RE technologies and practices by MSMEs.

*Expected Outcomes:*

2. The level of end-use demand and implementation of EE and RE technologies and practices by MSMEs is increased.

Component 3 – Scaling up of the project to a national level.

*Expected Outcomes:*

3. The project is scaled up to a national level.

Component 4 - Strengthening policy, institutional and decision-making frameworks.

*Expected Outcomes:*

4. Policy, institutional and decision-making frameworks strengthened.

Component 5 – Project management.

The Project is further structured into a total of 12 substantive outputs. The full logical framework is included as Annex 1.

### **4. Project implementation arrangements**

A Programme Management Cell (PMC) has been established in BEE to oversee implementation of all five GEF projects under the Programmatic Framework. The PMC is being supported by the World

---

<sup>19</sup> Sectors encompassed ceramic production, hand tool production, foundries, brass production, and dairy production.

Bank-GEF project as part of its mandate for supporting and strengthening programme knowledge management. The UNIDO-GEF project would support the PMC financially. The technology adaptation component of the UNIDO project and the finance component of the World Bank project complement and strengthen each other and the combination of both projects reduces the overhead cost.

Cooperation with the World Bank in this project takes place through a joint programme coordination unit. Where appropriate, there may also be financing provided from World Bank credit lines.

Organogram of the management of the project implementation is shown in Figure 1.

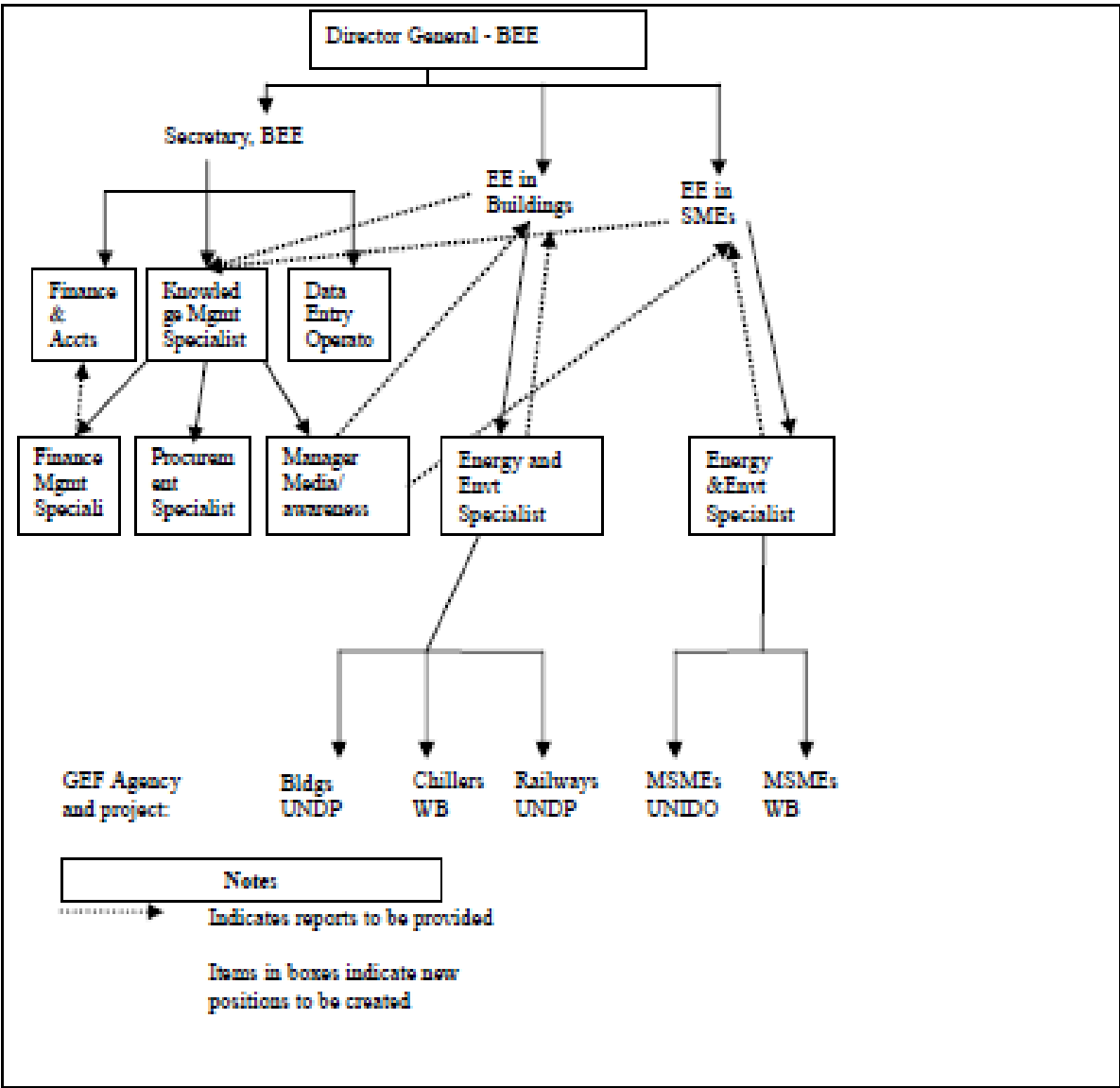


Figure 1. Project organization chart

The Bureau of Energy Efficiency is the executing party for this project. BEE coordinates the activities. For the renewable energy component, the Solar Energy Institute of the Ministry for New and

Renewable Energy is involved and responsible for part of the tasks. The division of tasks between BEE and MNRE is agreed upon by both institutes.

UNIDO helps to provide international coordination services and expertise regarding cluster development.

Four ministries are involved in this project: The Ministry of Power through the Bureau of Energy Efficiency; the Ministry of Micro, Small and Medium Sized Enterprises (MSME); and the Ministry for New and Renewable Energy (MNRE). The GEF focal point is located in the Ministry of Environment and Forestry.

In terms of organization structure, a number of levels can be discerned:

- The project advisory committee, consisting of the four ministries, UNIDO, industry and finance sector representatives. This committee is supposed to meet every six months throughout the duration of the project;
- The UNIDO project manager at Vienna Headquarters;
- The Programme Management Unit in BEE, which oversees five GEF projects and provides support in terms of knowledge management, energy efficiency expertise, personnel, contracts, finance and reporting;
- The Project Management Unit, consisting of a project manager and an assistant located within BEE and a renewables expert located within the solar energy institute of the ministry of new and renewable energy;
- Twelve cluster leaders. Within this group, there are five sector leaders, who can be part-time. These will be hosted by associations;
- Innovation platforms: cooperative frameworks consisting of Incubators (academics of the IITs), representatives of key national and local equipment supply industries and cluster industry representatives.

As BEE is a statutory body under the Ministry of Power, the project funds flow from UNIDO to GOI in a special account opened by BEE. BEE requests UNIDO funds based on unaudited financial reports (IUFs) and withdrawal applications. The FM assurance on the project is sought on the basis of Audit Reports, IUFs and Alternate Assurance arrangements.

To guide BEE during project implementation, a Project Operations Manual was prepared by BEE and agreed upon by UNIDO prior to project implementation. The manual was meant to include operational principles giving details of all guidelines and procedures agreed with UNIDO for the implementation, supervision and monitoring/evaluation of the project, including procedures for the identification and selection of beneficiaries of financial incentives, and details of the governance and accountability plan. It is meant to include a procurement plan, a financial management plan and agreements on the institutional framework required for implementation.

## 5. Budget information

Table 1. Financing plan summary<sup>20</sup>

USD	<i>Project Preparation</i>	<i>Project</i> <sup>21</sup>	<i>Total (USD)</i>
Financing (GEF / others)	Click here to enter text.	<b>7,172,097</b>	<b>7,172,097</b>
Co-financing (Cash and In-kind)	Click here to enter text.	<b>26,200,000</b>	<b>26,200,000</b>
<b>Total (USD)</b>	<b>000</b>	<b>33,372,097</b>	<b>33,372,097</b>

Source: Project document

Table 2. Financing plan summary - Outcome breakdown<sup>22</sup>

<b>Project outcomes</b>	<b>Donor (GEF/other) (USD)</b>	<b>Co-Financing (USD)</b>	<b>Total (USD)</b>
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	2,501,839	10,280,000	<b>12,781,839</b>
2. The level of end-use demand and implementation of EE and RE technologies and practices by MSMEs is increased	2,133,908	2,570,000	<b>4,703,908</b>
3. The project is scaled up to a national level.	1,409,776	5,140,000	<b>6,549,776</b>
4. Policy, institutional and decision-making Frameworks strengthened.	706,896	7,710,000	<b>8,416,896</b>
5. Project management	419,678	500,000	<b>919,678</b>
<b>Total (USD)</b>	<b>7,172,097</b>	<b>26,200,000</b>	<b>33,372,097</b>

<sup>20</sup> Source of financial data under Grants 200000251, 4000137, 4000577 in tables 1 to 4, UNIDO Project as of 3rd December 2017

<sup>21</sup> Includes project management cost

<sup>22</sup> Source: Project document.

Table 3. Co-Financing source breakdown

<b>Name of Co-financier (source)</b>	<b>Classification</b>	<b>Type</b>	<b>Total Amount (USD)</b>
Bureau of Energy Efficiency (BEE)	National Government	Cash and In-kind	2,000,000
Ministry of New and Renewable Energy	National Government	Cash and In-kind	6,700,000
Ministry of Small and Medium Enterprises	National Government	Cash and In-kind	17,000,000
UNIDO	Implementing Agency	Cash and In-kind	500,000
<b>Total Co-financing (USD)</b>			<b>26,200,000</b>

Source : Project document



Table 4. UNIDO US Dollars budget execution <sup>23</sup>

Item	2012	2013	2014	2015	2016	2017	Total expenditure
Contractual Services	4,510,000		1,072,140	14,497	1,358	4,773	5,602,767
Equipment			7,966	820	172,963	8,851	190,599
International Meetings	8,745						8,745
Local travel	2,945	11,198	13,790	24,901	23,884	15,349	92,066
Nat. Consult./Staff	11,403	68,582	72,752	90,018	97,903	58,169	398,826
Other Direct Costs	8,67	5,536	4,961	551	9,775	6,167	24,590
Premises			356	471	8,298	1,471	10,595
Staff & Intern Consultants			228	62	160		450
Staff Travel							
Train/Fellowship/Study	7,853			33,164	71,758	20,875	133,650
<b>Grand Total</b>	<b>4,549,616</b>	<b>74,243</b>	<b>1,172,193</b>	<b>164,484</b>	<b>386,098</b>	<b>115,655</b>	<b>6,462,289</b>

<sup>23</sup> USD Grant 200000251, Source PROJECT 3 December 2017

Table 5. UNIDO EUR budget execution <sup>24</sup>

<b>Item</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>Total expenditure</b>
Other Direct Costs			26	74	13	8	80
Staff Travel	10,020	11,223	11,557	9,851	15,777	12,973	71,400
<b>Grand Total</b>	<b>10,020</b>	<b>11,223</b>	<b>11,531</b>	<b>9,777</b>	<b>15,789</b>	<b>12,981</b>	<b>71,321</b>

---

<sup>24</sup> EUR Grants 4000137 and 4000577, Source PROJECT 3 December 2017

## II. Purpose and scope of the evaluation

This mid-term evaluation is expected to cover the project activities in the first 75 months of implementation of the project, notionally from 10/26/2011 – 12/31/2017, covering all 4 technical plus the management components in a balanced manner.

The purpose of the mid-term evaluation (MTE) is to independently assess the project to help UNIDO improve performance and achieve the expected outcomes as foreseen in the project document.

The MTE has the following objectives:

- Assess the project's performance and progress towards the achievement of the expected results
- Assess remaining barriers in project design, project management and performance of partners to identify the necessary changes to set the project on-track to achieve its expected results
- Develop recommendations and a follow-up plan on necessary corrective actions

The evaluation will mainly focus on the achievement of the expected results indicated in the project logical framework, and in particular on the aspects of relevance, effectiveness, efficiency, impact, sustainability, management as well as cross-cutting issues such as gender. The main geographical area in India are, in addition to New Delhi, the sites of the clusters, including Brass: Jagadhri and Jam Nagar; Ceramic: Khurja, Morbi and Thangadh; Dairy: Gujarat and Punjab; Foundry: Indore, Coimbatore and Belgaum; and Hand Tools: Naguar and Jalandhar.

The evaluation team (ET) will interview stakeholders in various Government institutions, e.g. the Bureau of Energy Efficiency (BEE), Ministry of Micro, Small and Medium Enterprises, Ministry of New and Renewable Sources of Energy and the GEF focal point in the Ministry of Environment, Forests and Climate Change. The ET will also visit selected interventions in the clusters, to be determined during the inception phase.

## III. Evaluation criteria and key questions

The following are the key evaluation criteria to be addressed by the MTE.

<b>A</b>	<b>Project design assessment</b>
1	Project design
2	Project results framework/logframe
<b>B</b>	<b>Project performance and progress towards results</b>
1	Relevance
2	Effectiveness and progress towards expected results
3	Efficiency
4	Gender mainstreaming
5	Sustainability
<b>C</b>	<b>Project implementation management</b>
1	Project management
2	Results-based work planning, monitoring and evaluation, reporting
3	Financial management and co-financing
4	Stakeholder engagement and communication
<b>D</b>	<b>Performance of Partners</b>

Detailed evaluation questions to address each of the evaluation criteria are provided in Annex 2.

## IV. Evaluation approach and methodology

The MTE will be conducted in accordance with the UNIDO Evaluation Policy<sup>25</sup>.

The evaluation will be conducted by an independent evaluation team using a participatory approach whereby all key parties associated with the project are kept informed and regularly consulted throughout the evaluation. The evaluation team will liaise with the UNIDO Independent Evaluation Division (ODG/EVQ/IEV) on the conduct and methodology of the evaluation.

The evaluation team will be required to use different methods to ensure that data gathering and analysis deliver evidence-based qualitative and quantitative information, based on diverse sources, as necessary: desk studies and literature review, statistical analysis, individual interviews, focus group meetings, surveys and direct observation. This approach will not only enable the evaluation to assess causality through quantitative means but also to provide reasons for why certain results were achieved and to triangulate information for higher reliability of findings.

The evaluation team will develop interview guidelines. Field interviews can take place either in the form of focus-group discussions or one-to-one consultations.

The methodology will be based on the following:

1. **A desk review** of project documents, including, but not limited to:
  - a. The original project document, monitoring reports, such as progress and financial reports to UNIDO and Donor(s)/Partners, annual Project Implementation Reports (PIRs), back-to-office mission report(s), and other project-related material produced by the project.
  - b. The evaluation team will check the validity of the project's results-chain in the project logframe and if necessary reconstruct the theory of change for the project.
  - c. Counterfactual information: In those cases where baseline information for relevant indicators is not available, the evaluation team will aim at establishing a proxy-baseline through recall and secondary information.
2. **Interviews** with:
  - a. Briefing meetings at UNIDO headquarters in Vienna: Project Manager (PTC/ENE/IEE) and the team members assigned to the project.
  - b. Meetings with the project team in India: Project Management Unit (PMU), National Project Director, National Project Coordinator, Technical Advisors, key local experts, UNIDO Field Office.
  - c. Meetings with the Lead Executing Agency and with the Members of the Project Steering Committee.
3. **Country visit:** The evaluation will visit selected cluster sites as it will be determined at the inception phase. At the end of the field mission, there will be a presentation of preliminary findings, conclusions and recommendations to the key stakeholders.

## V. Time schedule and deliverables

The mid-term evaluation of the Project is to be completed during January– March 2018. Table presents the indicative time table.

---

<sup>25</sup> UNIDO. (2015). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/(M).98/Rev.1)

**Table 6. Tentative schedule**

<b>Activity/deliverable</b>	<b>Indicative timing</b>
Recruitment of the evaluation team	January 2018
Desk review	15-15 January 2018
Briefing with UNIDO headquarter (Vienna)	Before 12 February 2018
Evaluation Framework and Theory of Change of the project intervention	5 February 2018
Fieldwork in India	12-23 February 2018
Debriefing meeting in UNIDO HQ (to be confirmed)	5-7 March 2018
Preparation of the first draft of the report	15 March 2018
Feedback from stakeholders	30 March 2018
Final Report	15 April 2018

The debriefing presentation of the evaluation consultant is foreseen in Vienna after the field mission. The evaluation report will be in English.

## **Vi. Evaluation team composition**

The evaluation team will be composed of one international evaluation consultant acting as the team leader and one national evaluation consultant. The evaluation team members will possess relevant strong experience and skills on evaluation management and conduct together with expertise and experience in energy efficiency. Both consultants will be contracted by UNIDO.

The tasks of each team member are specified in the job descriptions annexed to these terms of reference.

According to UNIDO Evaluation Policy, members of the evaluation team must not have been directly involved in the design and/or implementation of the project under evaluation.

The UNIDO Project Manager and the project team in India will support the evaluation team. The UNIDO GEF Coordinator and GEF OFP(s) will be briefed on the evaluation and provide support to its conduct. GEF OFP(s) will, where applicable and feasible, also be briefed and debriefed at the start and end of the evaluation mission. The UNIDO GEF Coordinator and GEF OFP(s) will be briefed on the evaluation and provide support to its conduct. GEF OFP(s) will, where applicable and feasible, also be briefed and debriefed at the start and end of the evaluation mission.

The evaluation will be managed and supervised by an evaluation manager appointed by UNIDO ODG/EVQ/IEV. The UNIDO Project Manager and national project teams will act as resourced persons and provide support to the evaluation team and the evaluation manager.

## **VII. Reporting**

This Terms of Reference (ToR) provides some information on the evaluation methodology, but this should not be regarded as exhaustive. After reviewing the project documentation and initial interviews with the project manager, the International Evaluation Consultant will prepare, in collaboration with the national consultant, the Evaluation Framework and reconstruct the project Theory of Change will operationalize the ToR relating to the evaluation questions and providing information on what type of and how the evidence will be collected (methodology). It will be discussed with and approved by the UNIDO Evaluation Manager.

The Evaluation Framework will focus on the following elements: preliminary project theory model(s); elaboration of evaluation methodology including quantitative and qualitative approaches through an evaluation framework (“evaluation matrix”); division of work between the International Evaluation Consultant and national consultant; mission plan, including places to be visited, people to be interviewed and possible surveys to be conducted and a debriefing and reporting timetable<sup>26</sup>.

### **Evaluation report format and review procedures**

The draft report will be delivered to ODG/EVQ/IEV (the suggested report outline is in Annex 4) and circulated to UNIDO staff and national stakeholders associated with the project for factual validation and comments. Any comments or responses, or feedback on any errors of fact to the draft report provided by the stakeholders will be sent to UNIDO ODG/EVA for collation and onward transmission to the project evaluation team who will be advised of any necessary revisions. On the basis of this feedback, and taking into consideration the comments received, the evaluation team will prepare the final version of the terminal evaluation report.

The ET will present its preliminary findings to the local stakeholders at the end of the field visit and take into account their feed-back in preparing the evaluation report. A presentation of preliminary findings will take place at UNIDO HQ after the field mission.

The evaluation report should be brief, to the point and easy to understand. It must explain the purpose of the evaluation, exactly what was evaluated, and the methods used. The report must highlight any methodological limitations, identify key concerns and present evidence-based findings, consequent conclusions, recommendations and lessons.

The report should provide information on when the evaluation took place, the places visited, who was involved and be presented in a way that makes the information accessible and comprehensible. The report should include an executive summary that encapsulates the essence of the information contained in the report to facilitate dissemination and distillation of lessons.

Findings, conclusions and recommendations should be presented in a complete, logical and balanced manner. The evaluation report shall be written in English and follow the outline given in Annex 4.

---

<sup>26</sup> The ET will be provided with a Guide on how to prepare an evaluation inception report prepared by the UNIDO ODG/EVQ/IEV.

## **VIII. Quality assurance**

All UNIDO evaluations are subject to quality assessments by UNIDO ODG/EVQ/IEV. Quality assurance and control is exercised in different ways throughout the evaluation process (briefing of consultants on methodology and process of UNIDO ODG/EVQ/IEV, providing inputs regarding findings, lessons learned and recommendations from other UNIDO evaluations, review of inception report and evaluation report by UNIDO ODG/EVQ/IEV).

The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality, attached as Annex 5. The applied evaluation quality assessment criteria are used as a tool to provide structured feedback. UNIDO ODG/EVQ/IEV should ensure that the evaluation report is useful for UNIDO in terms of organizational learning (recommendations and lessons learned) and is compliant with UNIDO's evaluation policy and these terms of reference. The draft and final evaluation report are reviewed by UNIDO ODG/EVQ/IEV, which will submit the final report to the GEF Evaluation Office and circulate it within UNIDO together with a management response sheet

Annex 1: Project Results Framework <sup>27</sup>

Project Strategy	Objectively Verifiable Indicators	Sources of Verification	Assumptions
<b>Impact</b>			
<p><i>GEF Strategic Priorities:</i> Strategic Program 2: Promoting energy efficiency in the industrial sector</p> <p>Strategic Program 4: Promoting Sustainable Energy Production from Biomass</p>	<p>Total CO<sub>2eq</sub> emission reductions as a result of the investments in industrial energy efficiency – target 1,270,500 million tonnes (over 10 year lifetimes) by 2014</p> <p>Total energy saved – target 276,600 MWh annually by 2015</p> <p>Contribution to the enabling policy environment – target of 4 out of 4 with the complete achievement of all the steps in facilitating the implementation of biomass as a fuel source and in main-streaming EE/RE policies for MSME development.</p> <p>Volume of investment – target 5 million USD by 2014</p> <p>See Annex F for details of how the GHG and MWh targets have been estimated</p>	<p>For all indicators: Reporting from project sites, data from feasibility studies, verification of savings for all or a representative sample of projects</p>	<p>Companies choose to make energy efficiency investments</p> <p>Implementation of project activities will foster industrial energy efficiency investments and reduce CO<sub>2eq</sub> emissions</p>
<b>Outcomes</b>			
<p>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</p> <p>Outcome 2: The level of end-use demand and implementation of EE and RE technologies and practices by MSMEs is increased.</p> <p>Outcome 3: The project is scaled up to a national level</p> <p>Outcome 4 Policy, institutional and decision-making frameworks strengthened</p>	<p>Number of technologies and practices adapted for local MSMEs – target 12 adapted technologies or practices being offered by local service providers.</p> <p>Investment facilitated into EE/RE technologies in MSMEs – target USD 16 million.</p> <p>Number of clusters and MSMEs implementing EE/RE technologies/practices – target 12 + clusters and 190 MSMEs.</p> <p>Establishment of nation-wide information frameworks for EE/RE.</p>	<p>Reporting from the Project Management Unit, the MSME cluster-level organisations, the MSMEs themselves, and local service providers of EE/RE technology.</p>	<p>The technologies are adaptable and economically attractive to MSMEs.</p> <p>The barriers identified are indeed the principle barriers to growth.</p> <p>There is no major deterioration of the macro-economic climate leading to lack of finance available and/or shutting down of industries.</p>

<sup>27</sup> UNIDO (17. Sept 2010) 103029\_CEO Endorsement, 17. Sept 2010, Annex A; Project Results Framework



Outputs	Objectively Verifiable Indicators	Sources of Verification	Assumptions
<b>Component 1: Increased capacity of suppliers of EE/RE product suppliers/ service providers/ finance providers</b>			
<b>Output 1.1</b> 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"> <li>➤ Detailed techno-economic studies at the unit (MSME) level to determine feasible options for EE and RE through improvements in technologies and operating practices.</li> <li>➤ Adjustment of existing technologies for the introduction of at least 12 emerging/ improved EE/RE technologies and/or Best Operating Practices to be introduced.</li> <li>➤ Documentation of the benefits (energy savings, quality improvement, GHG reduction etc) in the demonstration and replication units (prepare one case study for each sector).</li> <li>➤ 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).</li> </ul>	<p>Reports from technology adaptation experts.</p> <p>Survey of local service providers shows a change in availability of products and information.</p> <p>Survey of local industry associations shows a change in availability of information and services.</p> <p>Survey of MSMEs on financing availability (within the MSME and from finance institutions).</p>	<p>The technologies can be adapted to the local, smaller MSME markets.</p> <p>The local service providers, cluster-level industry associations, and financial actors are sufficiently interested and able to implement these changes.</p>
<b>Output 1.2.</b> 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"> <li>➤ 15 Local Service Providers/industry associations in 12 clusters identified for training and assistance in implementing the new technologies/Best Operating Practices.</li> <li>➤ 200 Detailed Project Reports prepared for MSMEs by Local Service Providers in 12 clusters.</li> <li>➤ 24 product and service providers operating in each cluster actively marketing EE/RE products. (up from 4 currently).</li> </ul>		
<b>Output 1.3</b> Increased ability of local industry associations to provide assistance and advice to MSMEs within the clusters with the establishment/enhancement of "Cluster level energy management cells".	<ul style="list-style-type: none"> <li>➤ Implementation of 12 "Energy Management Cells" within cluster-level industry associations/other cluster-level institutions for carrying out EE/RE assistance in their respective clusters.</li> <li>➤ Needs assessments for these 12 institutions for the implementation of Energy Management Cells within them.</li> </ul>		
	<ul style="list-style-type: none"> <li>➤ Strengthening of these 12 "Energy Management Cells" by providing material support (energy audit tools) and soft support (knowledge and training)</li> </ul>		

<p><b>Output 1.4</b> Enhanced financing opportunities for EE/RE projects and implementation measures.</p>	<ul style="list-style-type: none"> <li>➤ Templates and examples for financial assessment of EE/RE projects developed for use in training and dissemination</li> <li>➤ Banking/investor experts in 5 banks/financial institutions trained in the assessment of bankable projects and support mechanisms</li> </ul>		
<p><b>Component 2: Increased end-use demand and implementation of EE and RE by MSMEs</b></p>			
<p><b>Output 2.1</b> 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.</p>	<ul style="list-style-type: none"> <li>➤ 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.</li> <li>➤ In consultation with industry associations, choosing MSMEs and implementing joint partnerships including adapted technologies 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.</li> <li>➤ The development of around 200 bankable Detailed Project Reports which can be used for investment decisions.</li> <li>➤ A total of 120 EE/RE measures implemented in the 12 clusters.</li> <li>➤ At least 100 applications for financial assistance (loans/investments) submitted by MSMEs with 36 additional funded.</li> </ul>	<p>Number of Developed Project Reports tracked during the project, including those applying for outside financing.</p> <p>Responses to marketing efforts in terms of enquiries and requests for information will be tracked throughout the project.</p> <p>Follow up surveys will be carried out for those MSMEs involved in workshops to build capacity.</p>	<p>The adapted technologies have a sufficiently low payback period to warrant investment and efforts to secure outside investment.</p> <p>Macroeconomic conditions do not drastically alter prices/outputs from the industry.</p> <p>The implementing MSMEs will be able to Best Operating Practices consistently over time.</p>
<p><b>Output 2.2</b> Increased awareness and implementation of Best Operating Practices for energy management and EE/RE technologies in MSMEs in 12 energy intensive MSME clusters.</p>	<ul style="list-style-type: none"> <li>➤ 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.</li> </ul>		

<b>Component 3: Scaling up of the project to a national level</b>			
<p><b>Output 3.1</b> Cooperation and synergies established and enhanced within the project clusters through information sharing on best practices and joint workshops</p>	<ul style="list-style-type: none"> <li>➤ At least 7 study tours/exchange visits carried out under a 'knowledge exchange program to share lessons and experiences among the various clusters.</li> <li>➤ Existing web-sites in foundry and dairy sectors strengthened to include more information on EE/RE technologies and Best Operating Practices.</li> </ul>	<p>Monitoring reports on events and knowledge sharing activities.</p> <p>The number of cluster-based new projects developed will be tracked.</p>	<p>Other cluster-based organisations will be interested in this project.</p>
<p><b>Output 3.2</b> Expansion of the project to affect new clusters at a later date throughout the country</p>	<ul style="list-style-type: none"> <li>➤ 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)</li> <li>➤ Preparation of more detailed information booklets for each of the 5 sectors on the technologies, returns on investment, etc.</li> </ul>	<p>The number of brochures, booklets distributed and the web-site hits will be tracked.</p>	

<b>Component 4: Strengthening policy, institutional and decision-making frameworks</b>			
<p><b>Output 4.1</b> Improved monitoring and evaluation of energy use and development of a benchmarking system</p>	<ul style="list-style-type: none"> <li>➤ At least 24 detailed energy audits conducted in various sectors including investment options, payback periods, current barriers to implementation, and energy use/CO<sub>2</sub>e emissions prevented from the technologies/practices.</li> <li>➤ At least 12 detailed cluster-level energy use database prepared (one for each cluster); these would form the basis of benchmarking systems</li> <li>➤ A survey conducted on locally available biomass resources and sustainability of biomass supply determined. (In the Foundry and Brass Sectors)</li> <li>➤ Sustainability standards developed for biomass use.</li> </ul>	<p>The benchmarking system will be available for public use.</p> <p>The report will be available and submitted to project partners.</p> <p>The roadmap will be completed and submitted to project partners.</p>	<p>There is continued governmental support for this effort.</p>
<p><b>Output 4.2</b> Mainstreaming EE and RE into national policies and programmes on MSMEs Development</p>	<ul style="list-style-type: none"> <li>➤ Detailed report prepared on the policy and regulatory framework needed to accelerate the diffusion of energy-efficient and renewable energy technologies in the 5 MSME sectors. The report will also discuss improved RE options and related policy issues, and issues related to supply of piped NG in the clusters.</li> </ul>		
	<ul style="list-style-type: none"> <li>➤ 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 &amp; MNRE. The roadmap will specifically relate to state level programs where these clusters are located.</li> </ul>		

*Annex 2: Detailed questions to assess evaluation criteria*

The evaluation team will assess the project performance guided by the questions below.

#	<u>Evaluation criteria</u>
<b>A</b>	<b>Project design assessment</b>
1	<p><u>Project design</u></p> <ul style="list-style-type: none"> <li>• The project design was adequate to address the problems at hand?</li> <li>• Is the project consistent with the Country's priorities, in the work plan of the lead national counterpart? Does it meet the needs of the target group? Is it consistent with UNIDO's Inclusive and Sustainable Industrial Development? Does it adequately reflect lessons learnt from past projects? Is it in line with the donor's priorities and policies?</li> <li>• Is the applied project approach sound and appropriate? Is the design technically feasible and based on best practices? Does UNIDO have in-house technical expertise and experience for this type of intervention?</li> <li>• To what extent the project design (in terms of funding, institutional arrangement, implementation arrangements...) as foreseen in the project document still valid and relevant?</li> <li>• Does the project document include a M&amp;E plan? Does the M&amp;E plan specify what, who and how frequent monitoring, review, evaluations and data collection will take place? Does it allocate budget for each exercise? Is the M&amp;E budget adequately allocated (see a M&amp;E sample) and consistent with the logframe (especially indicators and sources of verification)?</li> <li>• Risk management: Are critical risks related to financial, social-political, institutional, environmental and implementation aspects identified with specific risk ratings? Are their mitigation measures identified? Where possible, are the mitigation measures included in project activities/outputs and monitored under the M&amp;E plan?</li> </ul>
2	<p><u>Project results framework/logframe</u></p> <ul style="list-style-type: none"> <li>• Expected results: Is the expected result-chain (impact, outcomes and outputs) clear and logical? Does impact describe a desired long-term benefit to a society or community (not as a mean or process), do outcomes describe change in target group's behaviour/performance or system/institutional performance, do outputs describe deliverables that project will produce to achieve outcomes? Are the expected results realistic, measurable and not a reformulation or summary of lower level results? Do outputs plus assumptions lead to outcomes, do outcomes plus assumptions lead to impact? Can all outputs be delivered by the project, are outcomes outside UNIDO's control but within its influence?</li> <li>• Indicators: Do indicators describe and specify expected results (impact, outcomes and outputs) in terms of quantity, quality and time? Do indicators change at each level of results and independent from indicators at higher and lower levels? Do indicators not restate expected results and not cause them? Are indicators necessary and sufficient and do they provide enough triangulation (cross-checking)? Are they indicators sex-disaggregated, if applicable?</li> <li>• Sources of verification: Are the sources of verification/data able to verify status of indicators, are they cost-effective and reliable? Are the sources of verification/data able to verify status of output and outcome indicators before project completion?</li> </ul>
<b>B</b>	<b>Project performance and progress towards results</b>

#	<u>Evaluation criteria</u>
1	<p><u>Relevance</u></p> <ul style="list-style-type: none"> <li>• So far, how relevant is the project to the: <ul style="list-style-type: none"> <li>○ target groups' needs</li> <li>○ development priorities of the country (national poverty reduction strategy, sector development strategy, etc.)</li> <li>○ UNIDO comparative advantages and</li> <li>○ project's donor policies and priorities</li> </ul> </li> <li>• Are appropriate beneficiaries groups being targeted by the project?</li> <li>• Are the original project objectives (expected results) still valid and pertinent to the target groups? If not, have then been revised? Are the revised objectives still valid in today context?</li> </ul>
2	<p><u>Effectiveness and progress towards expected results</u></p> <ul style="list-style-type: none"> <li>• SO FAR, what are the main results (mainly outputs and if possible, outcomes) of the project? What have been the quantifiable results of the project to-date?</li> <li>• To what extent did the project achieve their objectives (outputs and outcomes), against the original/revised target(s)? Please provide a brief analysis on the project progress in achieving the objectives.</li> <li>• What is the quality of the results? How do the stakeholders perceive them? What is the <b>feedback of the beneficiaries and the stakeholders</b> on the project effectiveness? Please provide evidence/examples from the project to back up the statements.</li> <li>• Were the right target groups reached?</li> <li>• Can the project attain it objectives and utilize the resources assigned for this within the remaining period?</li> </ul>
3	<p><u>Efficiency</u></p> <ul style="list-style-type: none"> <li>• Comment on how economically the project resources/inputs (in terms of funding, expertise, time...) are being used to produce results (outputs and outcomes) SO FAR? Comment on the quality of expertise/technical assistance provided; whether the expected results were achieved within the original budget, if no please explain why.</li> <li>• How timely is the project in producing outputs, initial outcomes and delivering inputs (with least delays)? Based on the work plan, comment on the delay or acceleration of implementation period of the project. Were the project's activities in line with the schedule of activities as defined by the project team and annual work plans? Were the disbursements and project expenditures in line with budgets?</li> <li>• Have the inputs from the donor, UNIDO and Government/counterpart been provided as planned, and were they adequate to meet the requirements?</li> <li>• Is the project cost-effective compared to similar interventions? Could the project have produced more with the same resources, or the same with less money, or with less delay? Wherever possible, the MTE team should also compare the costs incurred and the time taken to achieve outcomes with that for similar projects?</li> </ul>

#	Evaluation criteria
4	<p data-bbox="282 248 533 272"><u>Gender mainstreaming</u></p> <ul data-bbox="282 280 2056 746" style="list-style-type: none"> <li data-bbox="282 280 2056 347">• Did the project/programme design adequately consider the gender dimensions in its interventions? If so, was gender considered at the level of project outcome, output or activity?</li> <li data-bbox="282 355 2056 384">• Was a gender analysis included in a baseline study or needs assessment (if any)? Were there gender-related project indicators?</li> <li data-bbox="282 392 2056 459">• How gender-balanced was the composition of the project management team, the Steering Committee, experts and consultants and the beneficiaries?</li> <li data-bbox="282 467 2056 534">• Have women and men benefited equally from the project’s interventions? Do the results affect women and men differently? If so, why and how? How are the results likely to affect gender relations (e.g., division of labour, decision-making authority)?</li> <li data-bbox="282 542 2056 571">• Are women/gender-focused groups, associations or gender units in partner organizations consulted and/or included in the project?</li> <li data-bbox="282 579 2056 646">• To what extent were socioeconomic benefits delivered by the project at the national and local levels, including consideration of gender dimensions?</li> <li data-bbox="282 686 2056 715">• Are environmental aspect related to the protection of the environment and/or adaptation to climate change taken into account</li> <li data-bbox="282 722 2056 751">• Are social issues addressed to ensure inclusiveness of the project beneficiaries</li> </ul>
5	<p data-bbox="282 794 517 818"><u>Cross-cutting aspects</u></p> <ul data-bbox="282 826 2056 893" style="list-style-type: none"> <li data-bbox="282 826 2056 855">• Are environmental aspect related to the protection of the environment and/or adaptation to climate change taken into account</li> <li data-bbox="282 863 2056 892">• Are social issues addressed to ensure inclusiveness of the project beneficiaries</li> </ul>
<b>C</b>	<b>Project implementation management</b>
1	<p data-bbox="282 983 510 1007"><u>Project management</u></p> <ul data-bbox="282 1015 2056 1337" style="list-style-type: none"> <li data-bbox="282 1015 2056 1117">• Review overall effectiveness of project management as outlined in the Project Document. Have changes been made and are they effective? Are responsibilities and reporting lines clear? Is decision-making transparent and undertaken in a timely manner? Recommend areas for improvement.</li> <li data-bbox="282 1125 2056 1337">• Review whether the national management and overall coordination mechanisms have been efficient and effective? Did each partner have assigned roles and responsibilities from the beginning? Did each partner fulfil its role and responsibilities (e.g. providing strategic support, monitoring and reviewing performance, allocating funds, providing technical support, following up agreed/corrective actions)? The UNIDO HQ-based management, coordination, monitoring, quality control and technical inputs have been efficient, timely and effective (e.g. problems identified timely and accurately; quality support provided timely and effectively; right staffing levels, continuity, skill mix and frequency of field visits)?</li> </ul>

#	Evaluation criteria
2	<p data-bbox="280 250 775 272"><u>Results-based work planning, M&amp;E, reporting</u></p> <p data-bbox="280 316 595 338"><u>Results-based work planning</u></p> <ul data-bbox="280 352 2042 488" style="list-style-type: none"> <li data-bbox="280 352 1742 375">• Review any delays in project start-up and implementation, identify the causes and examine if they have been resolved.</li> <li data-bbox="280 389 2042 451">• Are there any annual work plans? Are work-planning processes results-based? Has the logframe been used to determine the annual work plan (including key activities and milestone)? If not, suggest ways to re-orientate work planning to focus on results?</li> <li data-bbox="280 466 1980 488">• Examine the use of the project’s results framework/ logframe as a management tool and review any changes made to it since project start.</li> </ul> <p data-bbox="280 531 495 553"><u>Results-based M&amp;E</u></p> <ul data-bbox="280 568 2042 1150" style="list-style-type: none"> <li data-bbox="280 568 2042 751">• Verify whether an M&amp;E system is in place and facilitated timely tracking of progress toward project objectives by collecting information on selected indicators continually throughout the project implementation period; annual project reports are complete and accurate, with well-justified ratings; the information provided by the M&amp;E system is used to improve performance and to adapt to changing needs; and the project has an M&amp;E system in place with proper training for parties responsible for M&amp;E activities to ensure that data will continue to be collected and used after project completion. Are monitoring and self-evaluation carried out effectively, based on indicators for outputs, outcomes and impact in the logframe? Is any project steering or advisory mechanism put in place? Do performance monitoring and reviews take place regularly?</li> <li data-bbox="280 766 2042 850">• Review the monitoring tool currently being used: Do they provide the necessary information? Do they involve key partners? Are they aligned or mainstreamed with national systems? Do they use existing information? Are they efficient? Are they cost-effective? Are additional tools required? How could they be made more participatory and inclusive?</li> <li data-bbox="280 865 2042 919">• Examine the financial management of the project monitoring and evaluation budget. Are sufficient resources being allocated to monitoring and evaluation? Are these resources being allocated effectively?</li> <li data-bbox="280 933 2042 1082">• How has the logframe been used for Monitoring and Evaluation purposes (developing M&amp;E plan, setting M&amp;E system, determining baseline and targets, annual implementation review by the Project Steering Committee...) to monitor progress towards expected outputs and outcomes? Do project team and manager make decisions and corrective actions based on analysis from M&amp;E system and based on results achieved? Is information on project performance and results achievement being presented to the Project Steering Committee to make decisions and corrective actions? Do the Project team and managers and PSC regularly ask for performance and results information?</li> <li data-bbox="280 1096 2042 1150">• How well have risks outlined the project document and in the logframe been monitored and managed? How often have risks been reviewed and updated? Has a risk management mechanism been put in place?</li> </ul> <p data-bbox="280 1193 539 1216"><u>Results-based reporting</u></p> <ul data-bbox="280 1230 2042 1391" style="list-style-type: none"> <li data-bbox="280 1230 1727 1252">• Assess how adaptive management changes have been reported by the project management and shared with the PSC.</li> <li data-bbox="280 1267 2042 1329">• Assess how well the Project Team and partners undertake and fulfil donor and UNIDO reporting requirements (i.e. how have they addressed delays or poor performance, if applicable?)</li> <li data-bbox="280 1343 2042 1391">• Assess how lessons derived from the adaptive management process have been documented, shared with key partners and internalized by partners.</li> </ul>



#	Evaluation criteria
3	<p><u>Financial management and co-financing</u></p> <ul style="list-style-type: none"> <li>Review the financial management of the project, with specific reference to the cost-effectiveness of interventions. Did the project have appropriate financial controls, including reporting and planning, that allowed management to make informed decisions regarding the budget and allowed for timely flow of funds? Was there due diligence in the management of funds and financial audits?</li> <li>Review the changes to fund allocations as a result of budget revisions and assess the appropriateness and relevance of such revisions.</li> <li>Did promised co-financing materialize? Is co-financing being used strategically to help the objectives of the project? Is the Project Team meeting with all co-financing partners regularly in order to align financing priorities and annual work plans.</li> </ul>
4	<p><u>Stakeholder engagement and communication</u></p> <p><u>Stakeholder engagement</u></p> <ul style="list-style-type: none"> <li>Project management: Has the project developed and leveraged the necessary and appropriate partnerships with direct and tangential stakeholders?</li> <li>Participation and country-driven processes: Do local and national government stakeholders support the objectives of the project? Do they continue to have an active role in project decision-making that supports efficient and effective project implementation?</li> <li>Participation and public awareness: To what extent has stakeholder involvement and public awareness contributed to the progress towards achievement of project objectives?</li> </ul> <p><u>Communication</u></p> <ul style="list-style-type: none"> <li>Review internal project communication with stakeholders: Is communication regular and effective? Are there key stakeholders left out of communication? Are there feedback mechanisms when communication is received? Does this communication with stakeholders contribute to their awareness of project outcomes and activities and investment in the sustainability of project results?</li> <li>Review external project communication: Are proper means of communication established or being established to express the project progress and intended impact to the public (is there a web presence, for example? Or did the project implement appropriate outreach and public awareness campaigns?)</li> <li>For reporting purposes, write one half-page paragraph that summarizes the project's progress towards results in terms of contribution to sustainable development benefits, as well as global environmental benefits</li> </ul>
5	<p><u>Sustainability of benefits</u></p> <p>The MTE should validate whether the risks identified in the Project Document and progress reports or implementations reviews are the most important and assess the following risks to sustainability:</p>

#	Evaluation criteria
	<p><i>Financial risks:</i></p> <ul style="list-style-type: none"> <li>• What is the likelihood of financial and economic resources not being available once the project ends? (Such resources can be from multiple sources, such as the public and private sectors or income-generating activities; these can also include trends that indicate the likelihood that, in future, there will be adequate financial resources for sustaining project outcomes.)?</li> </ul> <p><i>Socio-political risks:</i></p> <ul style="list-style-type: none"> <li>• Are there any social or political risks that may jeopardize the sustainability of project outcomes?</li> <li>• What is the risk that the level of stakeholder ownership and engagement (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained?</li> <li>• Do the various key stakeholders see that it is in their interest that project benefits continue to flow?</li> <li>• Is there sufficient public/stakeholder awareness in support of the project's long-term objectives?</li> </ul> <p><i>Institutional framework and governance risks:</i></p> <ul style="list-style-type: none"> <li>• Do the legal frameworks, policies, and governance structures and processes within which the project operates pose risks that may jeopardize the sustainability of project benefits?</li> <li>• Are requisite systems for accountability and transparency and required technical know-how in place?</li> </ul> <p><i>Environmental risks:</i></p> <ul style="list-style-type: none"> <li>• Are there any environmental risks that may jeopardize the sustainability of project outcomes?</li> <li>• Are there any project outputs or higher level results that are likely to have adverse environmental impacts, which, in turn, might affect the sustainability of project benefits?</li> </ul>
<b>D</b>	<b>Performance of partners</b>
1	<p><u>UNIDO</u></p> <p>✓ <b>Project team in the field</b></p> <ul style="list-style-type: none"> <li>• Has the project team discharged its project implementation and management functions adequately (in terms of work planning and executing, monitoring and reviewing performance, allocating funds, and following up agreed/corrective actions)?</li> <li>• Has an effective M&amp;E system been put in place, was it closely link with the logframe, does it generate information on performance and results which is useful for project managers and PSC to make critical decisions?</li> <li>• Has the management of flow of funds and procurement been suitable for ensuring timely implementation?</li> <li>• How proactive and prompt the project team was to ensure timely implementation of recommendations from experts of support missions and HQ-based project managers?</li> </ul> <p>✓ <b>UNIDO HQ-based management</b></p> <ul style="list-style-type: none"> <li>• Timely recruitment of project staff</li> </ul>

#	Evaluation criteria
	<ul style="list-style-type: none"> <li>• Project modifications following changes in context or after the Mid-Term Review</li> <li>• Follow-up to address implementation bottlenecks</li> <li>• Role of UNIDO country presence (if applicable) supporting the project</li> <li>• Engagement in policy dialogue to ensure up-scaling of innovations</li> <li>• Coordination function</li> <li>• Exit strategy, planned together with the government</li> </ul>
2	<p><u>National counterparts</u></p> <ul style="list-style-type: none"> <li>• Do local and national government stakeholders support the objectives of the project? Do they continue to have an active role in project decision-making that supports efficient and effective project implementation?</li> <li>• Has the government assumed ownership and fulfilled responsibility for the project?</li> <li>• Were counterpart resources (funds and staffing) provided as planned in the project design?</li> <li>• Did the government ensure suitable coordination of the various departments involved in the project implementation?</li> </ul>
3	<p><u>Donor</u></p> <ul style="list-style-type: none"> <li>• How active has the donor been in reviewing the project performance and implementation?</li> <li>• How proactive and prompt has the donor been in providing necessary support to the project implementation (in terms of decisions on fund installment, approval/rejection of request from project team...)?</li> <li>• Does the donor ask for information related to project performance and results?</li> <li>• To what extent does the donor make decisions based on performance and results information?</li> </ul>

Annex 3: Job descriptions



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION  
TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

Title:	International evaluation consultant, team leader
Main Duty Station and Location:	Home-based
Missions:	Missions to Vienna, Austria and India
Start of Contract (EOD):	15 January 2018
End of Contract (COB):	30 April 2018
Number of Working Days:	30 working days spread over the above mentioned period

### 1. ORGANIZATIONAL CONTEXT

The UNIDO Independent Evaluation Division (ODG/EVQ/IEV) is responsible for the independent evaluation function of UNIDO. It supports learning, continuous improvement and accountability, and provides factual information about result and practices that feed into the programmatic and strategic decision-making processes. Independent evaluations provide evidence-based information that is credible, reliable and useful, enabling the timely incorporation of findings, recommendations and lessons learned into the decision-making processes at organization-wide, programme and project level. ODG/EVQ/IEV is guided by the UNIDO Evaluation Policy, which is aligned to the norms and standards for evaluation in the UN system.

### 2. PROJECT CONTEXT

Detailed background information of the project can be found in the terms of reference (TOR) for this mid-term evaluation.

### 3. DUTIES AND RESPONSIBILITIES

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
1. Review project documentation and relevant country background information (national policies and strategies, UN strategies and general economic data); determine key data to collect in the field and adjust the key data collection instrument if needed;	<ul style="list-style-type: none"> <li>Adjust table of evaluation questions, depending on country specific context;</li> <li>Draft list of stakeholders to interview during the field missions;</li> </ul>	4 days	Home-based
2. Streamlines specific questions to address key issues in the TOR, specific methods that will be used and data to collect in the field visits, detailed evaluation methodology confirmed, draft theory of change, and tentative agenda for field work.	<ul style="list-style-type: none"> <li>Draft theory of change and Evaluation framework to submit to the Evaluation Manager for clearance</li> </ul>	1 days	Home based

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
2. Briefing with the UNIDO Independent Evaluation Division, project managers and other key stakeholders at UNIDO HQ.	<ul style="list-style-type: none"> <li>Detailed evaluation schedule with tentative mission agenda (incl. list of stakeholders to interview and site visits); mission planning;</li> <li>Division of evaluation tasks with the National Consultant.</li> </ul>	1 days	Through skype
<p>3. Conduct field mission to [India] in 2018<sup>28</sup>.</p> <p>Discuss and share the evaluation's preliminary findings, conclusions and recommendations to the Team Leader of the India Country Programme Evaluation to contribute to the CPE's assessment.</p>	<ul style="list-style-type: none"> <li>Conduct meetings with relevant project stakeholders, beneficiaries, the GEF Operational Focal Point (OFP), etc. for the collection of data and clarifications;</li> <li>Agreement with the National Consultant on the structure and content of the evaluation report and the distribution of writing tasks;</li> <li>Evaluation presentation of the evaluation's preliminary findings, conclusions and recommendations to stakeholders in the country, including the GEF OFP, at the end of the mission.</li> </ul>	12 days	India (specific project site to be identified later)
4. Present overall findings and recommendations to the stakeholders at UNIDO HQ	<ul style="list-style-type: none"> <li>After field mission(s): Presentation slides, feedback from stakeholders obtained and discussed</li> </ul>	1 days	Vienna, Austria
<p>5. Prepare the evaluation report, with inputs from the National Consultant, according to the TOR;</p> <p>Coordinate the inputs from the National Consultant and combine with her/his own inputs into the draft evaluation report.</p> <p>Share the evaluation report with UNIDO HQ and national stakeholders for feedback and comments.</p>	<ul style="list-style-type: none"> <li>Draft evaluation report.</li> </ul>	8 days	Home-based

<sup>28</sup> The exact mission dates will be decided in agreement with the Consultant, UNIDO HQ, and the country counterparts.

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
6. Revise the draft project evaluation report based on comments from UNIDO Independent Evaluation Division and stakeholders and edit the language and form of the final version according to UNIDO standards.	• Final evaluation report.	3 days	Home-based
	<b>TOTAL</b>	30 days	

#### 4. MINIMUM ORGANIZATIONAL REQUIREMENTS

##### Education:

Advanced degree in environment, energy, engineering, development studies or related areas

##### Technical and functional experience:

- Minimum of 15 years' experience in environmental/energy efficiency project management and/or evaluation (of development projects)
- Knowledge of India and cluster development of Small and Medium Enterprises
- Knowledge about GEF operational programs and strategies and about relevant GEF policies such as those on project life cycle, M&E, incremental costs, and fiduciary standards
- Experience in the evaluation of GEF projects and knowledge of UNIDO activities an asset
- Knowledge about multilateral technical cooperation and the UN, international development priorities and frameworks
- Working experience in developing countries and India.

##### Languages:

Fluency in written and spoken English is required.

All reports and related documents must be in English and presented in electronic format.

##### Absence of conflict of interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the UNIDO Independent Evaluation Division.



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION  
TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

Title:	National evaluation consultant
Main Duty Station and Location:	Home-based
Mission/s to:	Travel to potential sites within India
Start of Contract:	15 January, 2018
End of Contract:	30 March 2018
Number of Working Days:	21 days spread over the above-mentioned period

### 1. ORGANIZATIONAL CONTEXT

The UNIDO Independent Evaluation Division is responsible for the independent evaluation function of UNIDO. It supports learning, continuous improvement and accountability, and provides factual information about result and practices that feed into the programmatic and strategic decision-making processes. Evaluation is an assessment, as systematic and impartial as possible, of a programme, a project or a theme. Independent evaluations provide evidence-based information that is credible, reliable and useful, enabling the timely incorporation of findings, recommendations and lessons learned into the decision-making processes at organization-wide, programme and project level. The UNIDO Independent Evaluation Division is guided by the UNIDO Evaluation Policy, which is aligned to the norms and standards for evaluation in the UN system.

### 2. PROJECT CONTEXT

The national evaluation consultant will evaluate the projects according to the terms of reference (TOR) under the leadership of the team leader (international evaluation consultant). S/he will perform the following tasks:

### 3. DUTIES AND RESPONSIBILITIES

MAIN DUTIES	Concrete/measurable outputs to be achieved	Expected duration	Location
Desk review Review and analyze project documentation and relevant country background information; in cooperation with the team leader, determine key data to collect in the field and prepare key instruments in English (questionnaires, logic models); If need be, recommend adjustments to the tools in order to ensure their understanding in the local context.	Evaluation questions, questionnaires/interview guide, logic models adjusted to ensure understanding in the national context; A stakeholder mapping.	3 days	Home-based
Coordinate the evaluation mission agenda, ensuring and setting up the required meetings with project	<ul style="list-style-type: none"> <li>• Detailed evaluation schedule.</li> <li>• List of stakeholders to</li> </ul>	1 days	Home-based

MAIN DUTIES	Concrete/measurable outputs to be achieved	Expected duration	Location
partners and government counterparts, and organize and lead site visits, in close cooperation with project staff in the field.	interview during the field missions.		
Coordinate and conduct the field mission with the team leader in cooperation with the Project Management Unit, where required; Consult with the Team Leader on the structure and content of the evaluation report and the distribution of writing tasks. Conduct the translation for the Team Leader, when needed.	<ul style="list-style-type: none"> <li>• Presentations of the evaluation's initial findings, draft conclusions and recommendations to stakeholders in the country at the end of the mission.</li> <li>• Agreement with the Team Leader on the structure and content of the evaluation report and the distribution of writing tasks.</li> </ul>	12 days (including travel days)	India (specific sites to be determined)
Prepare inputs and analysis to the evaluation report according to TOR and as agreed with the Team Leader. Revise the draft project evaluation report based on comments from UNIDO Independent Evaluation Division and stakeholders and proof read the final version.	Draft and final evaluation report prepared.	5 days	Home-based
<b>TOTAL</b>		21 days	

#### 4. REQUIRED COMPETENCIES

##### **Core values:**

1. Integrity
2. Professionalism
3. Respect for diversity

##### **Core competencies:**

1. Results orientation and accountability
2. Planning and organizing
3. Communication and trust
4. Team orientation
5. Client orientation
6. Organizational development and innovation

##### **Managerial competencies (as applicable):**

1. Strategy and direction
2. Managing people and performance
3. Judgement and decision making
4. Conflict resolution



## 5. MINIMUM ORGANIZATIONAL REQUIREMENTS

**Education:** Advanced university degree in environmental science, engineering or other relevant discipline like developmental studies with a specialization in industrial energy efficiency and/or climate change.

**Technical and functional experience:**

- Exposure to the needs, conditions and problems in developing countries.
- Familiarity with the institutional context of the project is desirable.
- Experience in the field of environment and energy, including evaluation of development cooperation in developing countries is an asset

**Languages:** Fluency in written and spoken English and [name of local language: to be determined after project sites are chosen] is required.

**Absence of conflict of interest:**

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the UNIDO Independent Evaluation Division.

## Annex 4- Mid-term evaluation report outline

### Executive summary

- Must provide a synopsis of the storyline which includes the main evaluation findings and recommendations
- Must present strengths and weaknesses of the project
- Must be self-explanatory and should be maximum 3-4 pages in length

### I. Evaluation objectives, methodology and process

- Information on the evaluation: why, when, by whom, etc.
- Scope and objectives of the evaluation, main questions to be addressed
- Information sources and availability of information
- Methodological remarks, limitations encountered and validity of the findings

### II. Project background

- Brief country context: an overview of the economy, the environment, institutional development, demographic and other data of relevance to the project
- Sector-specific issues of concern to the project<sup>29</sup> and important developments during the project implementation period
- Project summary:
  - Fact sheet of the project: including project objectives and structure, donors and counterparts, project timing and duration, project costs and co-financing
  - Brief description including history and previous cooperation
  - Project implementation arrangements and implementation modalities, institutions involved, major changes to project implementation
  - Positioning of the UNIDO project (other initiatives of Government, other donors, private sector, etc.)
  - Counterpart organization(s)

### III. Evaluation findings

This is the key chapter of the report and should address all evaluation criteria and questions. Assessment must be based on factual evidence collected and analyzed from different sources. The evaluators' assessment can be broken into the following sections:

#### A. Project design assessment

1. Project design
2. Project results framework/logframe

#### B. Project performance and progress towards results

1. Relevance
2. Effectiveness and progress towards expected results
3. Efficiency
4. Gender mainstreaming

#### C. Project implementation management

1. Project management
2. Results-based work planning, monitoring and evaluation, reporting
3. Financial management and co-financing

---

<sup>29</sup> Explicit and implicit assumptions in the logical framework of the project can provide insights into key-issues of concern (e.g., relevant legislation, enforcement capacities, government initiatives)

4. Stakeholder engagement and communication
5. Sustainability
- D. Performance of Partners**

#### **IV. Conclusions, recommendations and lessons learned**

This chapter can be divided into three sections:

##### **A. Conclusions**

This section should include a storyline of the main evaluation conclusions related to the project's achievements and shortfalls. It is important to avoid providing a summary based on each and every evaluation criterion. The main conclusions should be cross-referenced to relevant sections of the evaluation report.

##### **B. Recommendations**

This section should be succinct and contain few key recommendations. They should be:

- Based on evaluation findings
- Realistic and feasible within a project context
- Indicating institution(s) responsible for implementation (addressed to a specific officer, group or entity who can act on it) and have a proposed timeline for implementation if possible
- Commensurate with the available capacities of project team and partners
- Taking resource requirements into account.

Recommendations should be structured by addressees:

- UNIDO
- Government and/or counterpart organizations
- Donor

##### **C. Lessons learned**

- Lessons learned must be of wider applicability beyond the evaluated project but must be based on findings and conclusions of the evaluation
- For each lesson, the context from which they are derived should be briefly stated

**Annexes** should include the evaluation TOR, list of interviewees, documents reviewed, a summary of project identification and financial data, including an updated table of expenditures to date, and other detailed quantitative information. Dissident views or management responses to the evaluation findings may later be appended in an annex.

*Annex 5: Checklist on evaluation report quality*

Project Title:

UNIDO PROJECT ID:

Evaluation team:

Quality review done by:

Date:

<b>Report quality criteria</b>	<b>UNIDO assessment notes</b>	<b>IEV</b>	<b>Rating</b>
<b>a.</b> Was the report well-structured and properly written? (Clear language, correct grammar, clear and logical structure)			
<b>b.</b> Was the evaluation objective clearly stated and the methodology appropriately defined?			
<b>c.</b> Did the report present an assessment of relevant outcomes and achievement of project objectives?			
<b>d.</b> Was the report consistent with the ToR and was the evidence complete and convincing?			
<b>e.</b> Did the report present a sound assessment of sustainability of outcomes or did it explain why this is not (yet) possible? (Including assessment of assumptions, risks and impact drivers)			
<b>f.</b> Did the evidence presented support the lessons and recommendations? Are these directly based on findings?			
<b>g.</b> Did the report include the actual project costs (total, per activity, per source)?			
<b>h.</b> Did the report include an assessment of the quality of both the M&E plan at entry and the system used during the implementation? Was the M&E sufficiently budgeted for during preparation and properly funded during implementation?			
<b>i.</b> Quality of the lessons: were lessons readily applicable in other contexts? Did they suggest prescriptive action?			
<b>j.</b> Quality of the recommendations: did recommendations specify the actions necessary to correct existing conditions or improve operations ('who?' 'what?' 'where?' 'when?'). Can these be immediately implemented with current resources?			
<b>k.</b> Are the main cross-cutting issues, such as gender, human rights and environment, appropriately covered?			
<b>l.</b> Was the report delivered in a timely manner? (Observance of deadlines)			

Rating system for quality of evaluation reports

A rating scale of 1-6 is used for each criterion: Highly satisfactory = 6, Satisfactory = 5, Moderately satisfactory = 4, Moderately unsatisfactory = 3, Unsatisfactory = 2, Highly unsatisfactory = 1, and unable to assess = 0.

## *Annex 6: Guidance on integrating gender in evaluations of UNIDO projects and programmes*

### **A. Introduction**

Gender equality is internationally recognized as a goal of development and is fundamental to sustainable growth and poverty reduction. The UNIDO Policy on gender equality and the empowerment of women and its addendum, issued respectively in April 2009 and May 2010 (UNIDO/DGB(M).110 and UNIDO/DGB(M).110/Add.1), provides the overall guidelines for establishing a gender mainstreaming strategy and action plans to guide the process of addressing gender issues in the Organization's industrial development interventions.

According to the UNIDO Policy on gender equality and the empowerment of women:

Gender equality refers to the equal rights, responsibilities and opportunities of women and men and girls and boys. Equality does not suggest that women and men become 'the same' but that women's and men's rights, responsibilities and opportunities do not depend on whether they are born male or female. Gender equality implies that the interests, needs and priorities of both women and men are taken into consideration, recognizing the diversity of different groups of women and men. It is therefore not a 'women's issues'. On the contrary, it concerns and should fully engage both men and women and is a precondition for, and an indicator of sustainable people-centered development.

Empowerment of women signifies women gaining power and control over their own lives. It involves awareness-raising, building of self-confidence, expansion of choices, increased access to and control over resources and actions to transform the structures and institutions which reinforce and perpetuate gender discriminations and inequality.

Gender parity signifies equal numbers of men and women at all levels of an institution or organization, particularly at senior and decision-making levels.

The UNIDO projects/projects can be divided into two categories: 1) those where promotion of gender equality is one of the key aspects of the project/project; and 2) those where there is limited or no attempted integration of gender. Evaluation managers/evaluators should select relevant questions depending on the type of interventions.

### **B. Gender responsive evaluation questions**

The questions below will help evaluation managers/evaluators to mainstream gender issues in their evaluations.

#### **B.1. Design**

- Is the project/project in line with the UNIDO and national policies on gender equality and the empowerment of women?
- Were gender issues identified at the design stage?

- Did the project/project design adequately consider the gender dimensions in its interventions? If so, how?
- Were adequate resources (e.g., funds, staff time, methodology, experts) allocated to address gender concerns?
- To what extent were the needs and priorities of women, girls, boys and men reflected in the design?
- Was a gender analysis included in a baseline study or needs assessment (if any)?
- If the project/project is people-centered, were target beneficiaries clearly identified and disaggregated by sex, age, race, ethnicity and socio-economic group?
- If the project/project promotes gender equality and/or women's empowerment, was gender equality reflected in its objective/s? To what extent are output/outcome indicators gender disaggregated?

## **B.2. Implementation management**

- Did project monitoring and self-evaluation collect and analyze gender disaggregated data?
- Were decisions and recommendations based on the analyses? If so, how?
- Were gender concerns reflected in the criteria to select beneficiaries? If so, how?
- How gender-balanced was the composition of the project management team, the Steering Committee, experts and consultants and the beneficiaries?
- If the project/project promotes gender equality and/or women's empowerment, did the project/project monitor, assess and report on its gender related objective/s?

## **B.3. Results**

- Have women and men benefited equally from the project's interventions? Do the results affect women and men differently? If so, why and how? How are the results likely to affect gender relations (e.g., division of labour, decision making authority)?
- In the case of a project/project with gender related objective/s, to what extent has the project/project achieved the objective/s? To what extent has the project/project reduced gender disparities and enhanced women's empowerment?

## Annex 2: Evaluation questions

Key evaluation questions	Sub-questions
<b>RELEVANCE</b>	
<b>1. How relevant is the programme to the needs and priorities of the participating individuals and institutions?</b>	<b>1.1</b> To what extent is the programme's work relevant to the needs of participants and beneficiaries?
	<b>1.2</b> To what extent is the programme relevant to India's national priorities and strategies?
	<b>1.3</b> To what extent is the programme relevant to UNIDO's mandate?
<b>EFFICIENCY</b>	
<b>2. How efficient is programme delivery?</b>	<b>2.1</b> How cost-effective was the programme so far and is there enough budget for remaining project work?
	<b>2.2</b> Was the originally anticipated co-financing secured till date?
	<b>2.3</b> Were and are programme roles, responsibilities and accountabilities sufficiently clear?
	<b>2.4</b> How efficient and effective was and is the programme's management arrangements? What alternative operating models could be implemented?
<b>EFFECTIVENESS</b>	
<b>3. To what extent and likeliness is the programme achieving its planned outputs and outcomes?</b>	<b>3.1</b> What is the profile of participating clusters, MSMEs, service provider (number, sector, gender-disaggregated staff base and region)?
	<b>3.2</b> To what extent are the programme participants benefiting?
	<b>3.3</b> To what extent were institutional and local capacities (EMCs, supplier) developed to support ongoing, post-implementation delivery of the programme's work?
	<b>3.4</b> What are the remaining main tasks and activities, the means to fulfil them?

Key evaluation questions	Sub-questions
	3.5 How efficient and effective are programme's monitoring/evaluation processes?
	3.6 <i>What contributions did the programme make to GEF Focal Area objectives?</i>
<b>IMPACT</b>	
<b>4. What direct and indirect impact did the programme deliver?</b>	4.1 To what extent did the programme so far contribute to improved market environment for EE/RE technologies in MSMEs and the overall reduction in carbon emissions?
	4.2 What type and level of investment did participants secure as a direct result of the programme?
	4.3 What technologies (product and services) did the programme help to bring to market?
	4.4 What did the programme contribute towards mainstreaming EE/RE into national policies and programmes?
	4.5 To what extent did the programme contribute to CO <sub>2</sub> /GHG emission reductions?
	4.6 Did the programme contribute to any unintended impacts, positive or negative?
<b>SUSTAINABILITY</b>	
<b>5. To what extent are the programme's results likely to be sustained in the long term?</b>	5.1 What are the key factors that will affect (negatively or positively) the sustainability of the programme's results?
	5.2 What arrangements have been made so far and will be planned to continue the programme's work beyond project implementation period?



### **Annex 3. List of documents reviewed**

#### **GEF – BEE -UNIDO project and programme documents**

- CEO endorsement
- Annual Project Implementation Reports (PIRs) 2012 -2017
- Project steering committee Meeting minutes and presentation 2014 – 2017
- BOP Best Operating Practices for 9 Clusters and 5 sectors; 2015
- 7 case studies 2015
- Common Monitorable Parameters (CMPs) for 9 cluster
- Demo Projects and DPRs for 6 cluster
- 28 Projects in the pipeline, Dec. 2017
- Energy audits for 9 cluster by 4 Service providers
- Energy Management Cells Background and contracting
- Minutes of Review meeting 2015 and 2017
- RfPs for cluster Level Services, work orders 2017
- List of training programmes and workshops
- DEA reports done by cluster leaders

#### **Relevant UNIDO evaluation reports**

- Independent UNIDO Country Evaluation India, UNIDO, 2011
- Final draft UNIDO evaluation Manual, 18 Dec 2017
- UNIDO India PPE 2013-17 Inception Report 5-2-18

#### **Evaluation information:**

- UNIDO Evaluation Policy (May 2015)
- UNIDO gender policy. April 2009
- DAC Evaluation Quality Standards (2006)
- DAC Glossary of Key Terms in Evaluation and Results Based Management (2002)
-

## Annex 4: Field visit programme

Draft Travel Plan									
Day	Date	City	Time	Agency	Representative	Name	Role in the project	Mode of Consultation	
Day-1	12-02-2018	Delhi	09.00 AM to 10.00 AM	PMU/UNIDO	National Technology Coordinator	Mr. Niranjan Rao Devel	Implementing Partner	in Person	
			10.00 AM to 12.00 Noon	UNIDO	Country Representative	Mr. Rene Van Berkel	Implementing Partner	in Person	
					Senior Technical Expert	Mr. N P Singh	Implementing Partner	in Person	
			02.00 PM to 3.30 PM	BEE	F&AO	Mr. Nair	Implementing Partner	in Person	
			05.00 PM to 6.00 PM		Director General	Mr. Abey Bahkre	Implementing Partner	in Person	
			3.30 PM to 4.30 PM	PMU/UNIDO	NTC and Other Staff	PMU Staff	Implementing Partner	in Person	
4.00 PM to 4.30 PM	GIZ	Senior Technical Expert	Mr. A K Asthana	Technical Expert	in Person				
Day-2	13-02-2018	Delhi	10.00 AM to 11.30 Noon	TERI	Group Head	Mr. Gerish Sethi	Consulting Firm	in Person	
			12.00 AM to 12.30 Noon	DESL	Senior Fellow	Mr. Raj Mohan	Consulting Firm	in Person	
					Group Head	Mr. Kiran Anant	Consulting Firm	in Person	
			01.00 PM to 01.30 PM	CII	Group Head	Mr. Kiran Anant	Consulting Firm	in Person	
			2.30 PM to 3.30 PM	BEE	Director	Mr. Milind Deore	Implementing Partner	in Person	
3.30 PM to 4.15 PM	BEE	Director General	Mr. Abey Bahkre	Implementing Partner	In Person				
Travel	New Delhi	Coimbatore	6.55 PM to 9.55 PM	Travel by Flight <i>Air India AI-9017</i>					
Day-3	14-02-2018	Coimbatore	09.00 AM to 10.30 PM	Industry Visit	Bright Castings Foundry				
			10.30 AM to 12.30 PM	Industry Visit	Ramakrishna Industries				
			12.30 PM to 1.30 PM	Working Lunch					
			02.00 AM to 04.30 PM	COINDIA	President	Mr. Kupp Swamy	Cluster Partner	in Person	
				COINDIA	Vice President	Mr. Arun	Cluster Partner	in Person	
04.30 PM to 05.30 PM	COINDIA	Local Suppliers							
Day-4	15-02-2018		08.30 AM to 10.00 PM	Industry Visit	Best Engineers Pumps			Field Visit	
			10.00 AM to 11.30 PM	Industry Visit	Mahandra Pumps			Field Visit	
Travel	Coimbatore	Ahmedabad via Mumbai	1.30 PM to 6.40 PM	Travel by Flight from Coimbatore to Ahmedabad via Mumbai by <i>Air India AI-658</i> and <i>Air India AI-91</i>					
Day-5	16-02-2018	Ahmedabad	10.00 AM to 03.00 PM	GCMMF	GM	Mr. A K Bayathi	Cluster Partner	in Person	
					OSD-Projects & Utility	Mr. Paritosh Kumar Sarka	Cluster Partner	in Person	
					Amul Fed dairy visit		Beneficiary	Field Visit	
			03.00 PM to 4.00 PM	Panchal Ceramic Association Vikas Trust	Cluster Leader	Pradeep B Vora	Cluster Partner	In Person	
04.00 PM to 5.00 PM	Morbi	Cluster Leader	Vijay Mishra	Cluster Partner	In Person				
Day-6	17-02-2018	Ahmedabad	10.00 AM to 03.00 PM	Industry Visit	Amul Chocolate Factory, Amul Dairy Mogar		Beneficiary	Field Visit	

Draft Travel Plan								
Day	Date	City	Time	Agency	Representative	Name	Role in the project	Mode of Consultation
Day-7	18-02-2018	Sunday	10.00 AM to 03.00 PM		Road Travel by taxi from Ahmedabad to Rajkot about 4 to 5 hours			
Day-8	19-02-2018	Jamnagar	09.00 AM to 11.30 PM	Jamnagar Factory Owners Association	President	Mr. Tulasi Bhai	Cluster Partner	in Person
					EMC incharge	Mr. Paresh Bhai Vadhe	Cluster Partner	in Person
			11.30 PM to 03.00 PM	Industry Visit	Satyanam Eng. Industries	Beneficiary	Field Visit	
Industry Visit	Raj Hans Metal Provat Ltd	Field Visit						
Travel	Rajkot	New Delhi via Mumbai	06.30 PM to 10.30 PM	Travel by Flight from Rajkot to New Delhi via Mumbai by Jet Airways 9W-7025				
Day-9	20-02-2018	Khurja	08.00 AM to 08.00 PM	Central Glass and Ceramic Research Institute (CGCRI) in Khurja	Scientist in Chief	Dr. L K Sharma	Cluster Partner	in Person
					Senior Scientist	Dr. Prasad	Cluster Partner	in Person
					R.K. Pottery		Beneficiary	Field Visit
					Anuj Industries			Field Visit
					Silico and Chemico Porcelain Works			Field Visit
Day-10	21-02-2018	Delhi	12.00 AM to 03.30 PM	UNIDO	Country Representative	Mr. Rene Van Berkel	Implementing Partner	in Person
					Project Manager	Mr. Sanjaya Shreshta	Implementing Partner	in Person
					National Technology Coordinator	Mr. Niranjan Rao Deev	Implementing Partner	in Person
Day-11	22-02-2018	Delhi	10.00 AM to 11.00 AM	TERI	Director General	Dr. Ajay Mathur	Consulting Firm	in Person
			12.00 Noon to 2.30 PM	UNIDO/BEE	Debriefing meeting with BEE, UNIDO and Evaluation team			
Travel	New Delhi	Amritsir	09.30 PM to 10.30 PM	Travel by Flight IndiGo 6E-524				
Day-12	23-02-2018	Jalandhar	10.00 AM to 06.00 PM	Jalandhar Handtools Man. Association	President	Mr. Sukh Dev Raj	Cluster Partner	in Person
					Victor tools		Beneficiary	Field Visit
					Anant tools			Field Visit
					Gripwell Ltd			Field Visit
					Humma tools			Field Visit
Travel	Amritsir	New Delhi	07.55 AM to 8.10 AM	Travel by Flight Air India AI-115				
Day-13	24-02-2018	Delhi	12.30 AM to 01.30 PM	UNIDO HQ	UNIDO Country Program Evaluation Team		Implementing Partner	in Person

## Annex 5. List of persons interviewed / met

Name	Gender	Designation	Organisation
Mr. Rene .v. Berkel	Male	UNIDO Representative	Regional Office, India, UNIDO
N.P. Singh	Male	Senior Technical Advisor	Regional Office, India, UNIDO
Niranjan Rao Deevela	Male	National Technology Coordinator	GEF-UNIDO-BEE Project on Energy Efficiency and Renewable Energy in MSME Clusters in India
A.K. Asthana	Male	Senior Technical Expert, Indo-German Energy Programme	GIZ, India
Ashish Sharma	Male	Project engineer, Team Member from BEE	GEF-UNIDO-BEE Project on Energy Efficiency and Renewable Energy in MSME Clusters in India
Hemant Rao	Male	Finance and Admin Assistant	GEF-UNIDO-BEE Project on Energy Efficiency and Renewable Energy in MSME Clusters in India
Mr. K. K. Nair	Male	Finance and Account officer	BEE, Ministry of Power, Government of India
Prosanto Pal	Male	Senior Fellow, Industrial Energy Efficiency Division	TERI
Girish Sethi	Male	Senior Director, Energy Program	TERI
R. Rajmohan	Male	Chief Executive Officer	DESL
Suparno Ranjan Majumdar	Male	Consultant in charge for EAR	DESL
Kiran Ananth (via skype)	Male	Senior Counsellor	CII
Milind Deore	Male	Director, Project Manager	BEE, Ministry of Power, Government of India
Abhay Bakre	Male	Director General	BEE, Ministry of Power, Government of India
R. Sivakumar	Male	Cluster Leader, Coimbatore	GEF-UNIDO-BEE Project on Energy Efficiency and Renewable Energy in MSME Clusters in India
S. Balraj	Male	Joint Managing Director	Bright Castings, Bright Foundries Coimbatore Private Ltd. , Coimbatore
Er. Shekar	Male	Vice President of Operations	Sri Ramakrishna Ind. Unit, Coimbatore

Name	Gender	Designation	Organisation
Angu Ayyappan	Male	Executive, Operations	Rajpreath Industries, Coimbatore
N Visvanathan	Male	Former President	ColIndia, Coimbatore
S. Kuppusamy	Male	President	ColIndia, Coimbatore, and Vice President PSG & Sons Charities Metallurgy and Foundry Division, Coimbatore
Arun Ranganathan	Male	Vice President	ColIndia, Coimbatore, and m, and Sugulaj Pumps, Coimbatore
Shivashanmugha Kumar	Male	President	Tiny and Small Foundry Association, Coimbatore
Ramdas	Male	Service Manager	SGV Matics Private Limited, Coimbatore
S. Sundaram	Male		SGV Matics Private Limited, Coimbatore
Vignesh Kumar	Male		Chicago Pneumatics, Coimbatore
Raj Jumar	Male		Chicago Pneumatics, Coimbatore
Ram Kumar	Male		Atantra Energy Pvt Limited, Coimbatore
Eswar Swami	Male		Atantra Energy Pvt Limited, Coimbatore
Suresh Kumar P.	Male		Agna Inc, Coimbatore
Ranganathan	Male		A R Engineering, Coimbatore
Supriya Gowrishankar	Female	Technical Director	Best Engineering Pumps Pvt. Ltd. , Coimbatore
Selvi Soundaram	Female	Quality Manager	Best Engineering Pumps, Coimbatore
N. Vishvanathan	Male	Chief Executive Officer	Ammuran Foundaries, Coimbatore
K. Chandrashekar	Male	Deputy General Manager	Mahendra Pumps, Coimbatore
S. Sevaraj	Male	Manager, Marketing	Mahendra Pumps, Coimbatore
Jaikumar Ramdas	Male	Joint Managing Director	Mahendra Pumps, Coimbatore
Falgun N. Pandaya	Male	Cluster Leader	Gujarat Dairy Cluster
Paresh Mehta	Male	Amul officer coordinating the project from Amul's side	AmulFed Dairy, Ahmadabad

Name	Gender	Designation	Organisation
Prashant Sheth	Male	Senior Manager	AmulFed Dairy, Ahmedabad
Anil K. Bayati	Male	In-charge General Manager	AmulFed Dairy, Ahmedabad
P. K. Sarkar	Male	OSD, Associate Head,	Gujarat Dairy Cluster, AmulFed Dairy, Ahmedabad
Pradip Vora	Male	Cluster Leader	Thangarh Ceramics Cluster
Vijay Mishra	Male	Cluster Leader	Morbi Ceramics Cluster
Rajeh Mathodia	Male	Deputy Manager	Food Complex, Mogar, Amul Dairy
Amit Vyas	Male	General Manager, Projects and Engineering	Amul Dairy, Mogar, Anand
Vijay Prajapati	Male	Assistant Manager, EMC Coordinator	Amul Dairy, Mogar, Anand
Vrushit B. Dolkia	Male	Assistant Manager, ETP Plant in-charge	Amul Dairy, Mogar, Anand
Prakashkumar Soni	Male	Assistant Manager, Engineering	Chocolate Plant, Amul Dairy, Anand
Tulsibhai V. Gajera	Male	President	Jamnagar Factory Owners Association
Paresh Bhai Vadhera	Male	Cluster Partner, and Unit In-charge Energy Management Cell	Jamnagar Factory Owners Association
Suresh Hirpara	Male	Director	Sterling Industries, Jamnagar
Suresh Bhai	Male	Member, Energy Management Cell	Jamnagar Factory Owners Association
Keyur Khattar	Male	CEO & MD	Venus Pumps, Jamnagar
Lakhabhai Keshwala	Male	Proprietor	Satyanam Engineering Industries, Jamnagar
Shrenik Dodhia	Male	Director	Rajhans Metals Private Limited, Jamnagar
Sameer Patel	Male	Cluster Leader	Jamnagar Brass Cluster
C S Prasad	Male	Principal Technical Officer	CSIR-Central Glass and Ceramic Research Institute
Ajit Singh	Male	Cluster Leader	Khurja Ceramic Cluster
Mr. Singhania	Male	Owner	R. K. Pottery, Khurja
Mr. Anuj Gunber	Male	Managing Director	Anuj Industries, Khurja
L. K Sharma	Male	Scientist in-charge	CSIR CGCRI, Khurja

Name	Gender	Designation	Organisation
Guljeet S Minhas	Male	Director	Silico and Chemico Porcelain Works, Khurja
Ajay Mathur	Male	Director General	TERI
Thuy Thu Le	Female	Evaluation Officer	UNIDO, Austria
Sanjaya Shrestha	Male	Project Manager	UNIDO, Austria
Dorothy Lucks	Female	Lead Evaluator, India Country Programme Evaluation	Independent Consultant, SDF Global
Hemant Verma	Male	National Evaluator	Independent Consultant, India
Ronnie Macpherson	Male	International Evaluator	Independent Consultant, Greenstate
Sukh Dev Raj	Male	Managing Director	Victor tools LTD, Victor Forgings, Jalandhar City
Ashwani Kumar	Male	Director	Victor tools LTD, Victor Forgings, Jalandhar City
Kumar	Male	Director	Victor tools LTD, Victor Forgings, Jalandhar City
P.C Babbar	Male	Plant manager	Victor tools LTD, Victor Forgings, Jalandhar City
Anuj Chopra	Male	Director Sales	Anant tools PVT. LTD, Jalandhar City
Surinder Singh	Male	Partner	Humma Tools, Jalandhar City
Ikjot S. Rana	Male	Export Executive	Gripwell tools Industries, Jalandhar City
Guhmar Singh	Male	Maintenance	Gripwell tools Industries, Jalandhar City