Disclaimer:

The Annual report aims to provide overview of UNIDO operational and pipeline projects in India. It aims to increase awareness of the reader about UNIDO activities in India and areas of collaboration between UNIDO and different stakeholders in India. However, it does not intend to provide any official data or information concerning any disputable issues.

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Annual Report 2016
2016 was not only an exciting year for UNIDO operations in India but also marked an important milestone. The celebration of 50th anniversary is very vital for any organization. It showed the significance of our activities and strong partnership for industrial development and socio-economic progress of India.

Today, the UNIDO Country Programme (CP) in India is one of the largest and most diversified portfolios of UNIDO across all its member states. The Country Programme (2013-2017) for India originally comprised 43 projects with a total budget of US$ 101.15 million. In 2015, UNIDO and DIPP revised the Country Programme to more accurately reflect current implementation and the CP now comprises 48 projects with a total budget of approximately US$ 170.3 million. The expanding portfolio is attributed to the approval of new projects funded by the Global Environment Facility (GEF), projects under the International Centre for Inclusive and Sustainable Industrial Development (IC-ISID) and a widened scope of activities (covering both energy/environment and economic development).

The special emphasis for ‘Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation’ under Sustainable Development Goal 9 (SDG9) in the 2030 Sustainable Development Agenda (SDGs) validated UNIDO’s mandate in the international development framework. The other SDGs also have specific industry-related targets highlighting the multiple links between industrialisation, energy and employment, economic growth and development.

The International Centre for Inclusive and Sustainable Industrial Development (IC-ISID) fosters India’s role in South-South Cooperation, transfer of technology and best practices and expertise sharing within the country, in the region and globally. This makes UNIDO an important player in addressing industrial development issues in India and beyond. The projects under direct implementation by the Centre cover diverse areas and crucial sectors like leather, cement, pulp and papers to name a few.

During the year we have progressed significantly in the formulation of new projects such as the ‘Sustainable Cities Integrated Approach Pilot in India’. With this UNIDO has forged new partnership with the Ministry of Urban Development. As we start implementation over coming years, we are confident that this partnership with MoUD and the Municipal Corporations of Vijayawada, Guntur, Mysore, Jaipur and Bhopal will become stronger. Our other projects like Air Quality Index and Construction and Demolition Waste which are currently under discussion and different stages of approval, showcase alignment of UNIDO activities priorities of the Govt. of India. Moreover, UNIDO projects are contributing to the ‘Make in India’ and ‘Start Up’ flagships.

UNIDO’s 50th anniversary gave us an opportune time not only to celebrate our achievements but also introspect, reposition our focus areas and priority for future intervention so that we maintain our relevance as India advances. I am confident that the UNIDO-India technical cooperation and partnership will continue to be as fruitful and successful as it has been in the past and the journey of partnership for progress will continue through inclusive and sustainable industrial development in India.

René Van Berkel
UNIDO Representative
Regional Office in India
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4. PROGRAMME DEVELOPMENT – KEY AREAS OF COOPERATION

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6. COMMUNICATION AND MEDIA COVERAGE

7. UNIDO INDIA REGIONAL OFFICE
LIST OF ABBREVIATIONS:

ACMA Automotive Component Manufacturers Association of India
ADA Austrian Development Agency
BAT Best Available Techniques
BEE Bureau of Energy Efficiency
BEP Best Environmental Practices
BSP Bhilai Steel Plant
CAD Computer Aided Design
CAM Computer Aided Manufacturing
CBWTF Common Biomedical Waste Treatment Facilities
CFCs Chloro Fluoro Carbons
CII Confederation of Indian Industries
CLRI Central Leather Research Institute
CP Country Programme
CPPRI Central Pulp & Paper Research Institute
CPRI Central Power Research Institute
CS Concentrated Solar
CT Cleaner Technology
CTC Carbon Tetra Chloride
DC Development Commissioner
DDT Dichloro Diphenyl Trichloroethane
DG Director General
DIPP Department of Industrial Policy and Promotion, Government of India
E & E Energy and Environment
EE Energy Efficiency
EESL Energy Efficiency Services Limited
ESCAP Economic and Social Commission for Asia and the Pacific
FICCI Federation of Indian Chambers of Commerce and Industry
GC General Conference
GEF Global Environment Facility
HIGHLIGHTS OF 2016:

The year 2016 was not just another busy year for UNIDO; it also marked an important milestone for us as UNIDO celebrated 50th anniversary of its operation and partnering in the progress of member countries. The UNIDO organisational mandate 'Inclusive and Sustainable Industrial Development' is more relevant in these changing times in terms of development, poverty eradication, natural resources, climate and environment. The 2030 Sustainable Development Goals (SDGs) also highlighted the importance of our mandate in SDG 9: Industry, Innovation and Infrastructure. Therefore, the 50th year anniversary served not only as a moment of celebration but also gave us the chance to critically review our contribution to Industrial Development. This junction also provides an opportunity to prioritise our objectives and focus areas in the relevant, future-focused and critical issues.

During the year, through numerous national events, project workshops, high profile visits from the UNIDO Headquarters and foreign delegates, UNIDO India was actively engaged in various activities. Some highlights are presented below:

**February:** UNIDO is committed to the Inclusive and Sustainable Industrial Development of its member states and thus strongly support Govt. of India’s ‘Make in India’ initiative.

The UNIDO Director General Mr. Li Yong attended the Make in India event, which took place in Mumbai from 13 to 18 February 2016. He participated in a side event "Thinking out of the box - Innovation for industry/Industry for innovation" organized by the UNIDO. During his visit he also met with Ms. Nirmala Sitharaman, Minister of State for Commerce and Industry of India and with Mr. Ramesh Abhishek, Secretary, Department of Industrial Policy and Promotion (DIPP).
The third edition of the ‘Sustainable Energy Leadership Programme – SELP, organized by the United Nations Industrial Development Organization (UNIDO), with support of The Energy and Resources Institute (TERI) and TERI University, was held at TERI University from February 8 - 19. The programme was inaugurated by Dr. Sijin Lee, President & CEO, Korea Environment Corporation. This two week programme brought together current and future leaders of sustainable energy to create a global forum for knowledge transfer and exchange, and to facilitate sharing of ideas and best practices. The programme included technical seminars, site visits to sustainable energy facilities, as well as interactive discussion sessions, and was designed in recognition of the key role of stakeholders and partners in driving innovations through creating enabling environments.

SELP 2016 also served to further south-south cooperation through knowledge exchange and information sharing among the experts that attended the programme, as well as by showcasing best sustainable energy practices India has to offer. The focus was to hone leadership skills of the participants by equipping them with an in-depth understanding of energy policy options, technology solutions, as well as financing and planning tools. SELP 2016 aimed to also develop regional capacities to achieve the targets of renewable energy (RE) and energy efficiency (EE) in the respective regions, and was organized in close collaboration with UNIDO’s Global Network of Regional Sustainable Energy Centres.

In 2016, 26 participants from 18 countries attended this programme. SELP 2016 contributed to enhancing national capacities of developing countries and economies in transition by providing up-to-date information on the relevant policy trends and available technologies, and showcasing how sustainable energy solutions can form an integral part of inclusive and sustainable industrial development.

Fig : During Sustainable Energy Leadership Programme (SELP) 2016
**October:** Ms. Ayumi Fujino transferred from India regional office to Vienna as Director, Office of Strategic Planning and Coordination. For more than 6.5 years in India under her able leadership the UNIDO India operation has grown exponentially. Today UNIDO’s operation in India is second largest and most diversified portfolio, second to China.

**December:** The Second UNIDO-BRICS Consultation Meeting on the “Promotion of development and cooperation of SMEs between China and other BRICS countries through e-commerce development” project, co-organized by UNIDO and the Federation of India Chamber of Commerce and Industry (FICCI), with the support of UNIDO International Centre for Inclusive and Sustainable Industrial Development (IC-ISID) took place on 20th December 2016 in New Delhi, India. The meeting aimed to exchange information on technology transfer platforms and SMEs E-commerce of BRICS countries. The meeting was attended by more than 60 representatives from governmental departments, diplomatic corps, research institutions and business institutions from the BRICS countries.

The development of the project document on UNIDO-BRICS Technology Transfer Platform was acknowledged by all participants. They all agreed that having this platform is essential for gathering e-commerce best practices and thus assisting SMEs to share technology they have and adopt technology they need. The participants agreed that developing a mechanism to provide accreditation standards to the e-commerce entities operating in BRICS countries is essential for the provision of standardization of procedures, quality in service delivery and overall homogeneity in expectations across buyers and sellers of BRICS countries. UNIDO’s initiative of establishing the BRICS E-commerce Industry Alliance was welcomed and all the participants agreed that this initiative would help SME business entities and startups to expand their reach in other BRICS countries and beyond.
2 SERVICE DELIVERY AND PORTFOLIO DEVELOPMENT:

2.1 Salient features

The Regional Office India is one of 10 UNIDO regional offices and part of a larger network of field representation. The present coverage is Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka.

The regional office is headed by a UNIDO Representative. In India, the RO is currently responsible for the implementation and coordination of the Country Programme (2013-2017). The CP originally comprised 43 projects with a total budget of US$ 101.15 million. In 2015, the CP underwent a review, and an addendum was finalised by DIPP and UNIDO according to which, the CP now comprises 48 projects with a budget of approximately US$ 170.3 million. As on 31st Dec 2016 out of total 48 projects, 22 (US$ 17.64 million) have been completed, 18 (US$ 82.94 million) are under implementation, and 7 (US$ 70.36 million) are pipeline projects and one project ‘Promoting Industrial maintenance’ objectives were merged with the pipeline ‘UNIDO ACMA phase II’ project. Total 12 projects (US$ 21.33 million) including above mentioned ‘Promoting Industrial maintenance’ were discarded now.

The Country Programme for India is one of the largest and most diversified initiatives by UNIDO among operations in all member states. The project portfolio is broadly divided into two components: Green Industrial Development and Inclusive Economic Development, apart from crosscutting issues such as gender mainstreaming and South-South cooperation. The status of UNIDO Country Programme portfolio as of December 2016 is shown below:

**Fig: UNIDO operations in India under CP 2013-2017 (addendum) – Status December 2016**
2.2 Overview of the Country Programme (2013-2017) – Addendum

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Detail Components</th>
<th>No. of projects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Component wise</strong></td>
<td>Inclusive Economic Development (IED)</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Green Industrial Development (GID)</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>South-South Cooperation (SSC)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Field Institutional Support (FIS)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Structure as per CP document (Addendum)</strong></td>
<td>Current Generation (completed and ongoing)</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Next Generation</td>
<td>9</td>
</tr>
<tr>
<td><strong>Implementation Status (as of December 2016)</strong></td>
<td>Total Completed</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Projects Discarded (not counted in Total)</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Ongoing</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Pipeline / under review</td>
<td>7</td>
</tr>
</tbody>
</table>

2.3 Overview

2.3.1 Projects Completed in 2016

<table>
<thead>
<tr>
<th>Ref No.</th>
<th>Project</th>
<th>Line Ministry</th>
<th>Donor Agency</th>
<th>Budget (US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N8</td>
<td>Promoting low – head micro hydropower mini grids to increase access to energy for productive uses in rural India</td>
<td>MNRE</td>
<td>Govt. of Japan</td>
<td>1,300,000</td>
</tr>
<tr>
<td></td>
<td>Ecosystem based livelihood promotion in the North East (Mizoram)¹  – Preparatory Assistance</td>
<td>Govt. of Mizoram</td>
<td>Govt. of Mizoram</td>
<td>120,000</td>
</tr>
</tbody>
</table>

¹Based on this preparatory assistance a full fledged project document worth of US $ 2,470,331 submitted to concern ministry for necessary approval.
### 2.3.2 Ongoing projects as on 31st Dec 2016

<table>
<thead>
<tr>
<th>Area</th>
<th>Ref No.</th>
<th>Project</th>
<th>Line Ministry</th>
<th>Donor Agency</th>
<th>Budget (US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Chemical &amp; Waste</td>
<td>C15</td>
<td>Environmentally Sound Management and Final Disposal of PCBs in India</td>
<td>MoEFCC</td>
<td>GEF</td>
<td>14,100,000</td>
</tr>
<tr>
<td></td>
<td>C16</td>
<td>Environmentally Sound Management and Final Disposal of Medical Wastes in India</td>
<td>MoEFCC</td>
<td>GEF</td>
<td>10,000,000</td>
</tr>
<tr>
<td></td>
<td>N7</td>
<td>Development and promotion of Non-POPs alternatives to DDT</td>
<td>MoEFCC</td>
<td>GEF</td>
<td>10,000,000</td>
</tr>
<tr>
<td>Environmental Chemical &amp; Waste</td>
<td>C9, C19</td>
<td>Promoting Energy Efficiency and Renewable Energy in selected Micro, Small and Medium Enterprises (MSME) clusters in India</td>
<td>BEE</td>
<td>GEF</td>
<td>7,172,097</td>
</tr>
<tr>
<td>Energy: Energy Efficiency, Innovation &amp; Renewable Energy</td>
<td>N4</td>
<td>Clean technology and energy efficiency for micro, small and medium enterprises (Global Cleantech Innovation Programme)</td>
<td>MSME</td>
<td>GEF</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Energy: Energy Efficiency, Innovation &amp; Renewable Energy</td>
<td>N5</td>
<td>Organic waste streams for industrial renewable energy application in India</td>
<td>MNRE</td>
<td>GEF</td>
<td>3,333,000</td>
</tr>
<tr>
<td>Energy: Energy Efficiency, Innovation &amp; Renewable Energy</td>
<td>A12</td>
<td>Sustainable Cities Integrated Approach Pilot in India (SCIAP)³</td>
<td>MoUD</td>
<td>GEF</td>
<td>13,500,000</td>
</tr>
<tr>
<td>Inclusive Economic Development</td>
<td>N11</td>
<td>Supporting small and medium-sized manufacturers in the automotive component industry in India: deepening and widening the service provided within the framework of the UNIDO-ACMA-MOHI</td>
<td>MoHI</td>
<td>MoHI</td>
<td>909,674</td>
</tr>
<tr>
<td>Institute/Centre</td>
<td>A1</td>
<td>Regional Network on POPs and pesticide for Asia and the Pacific (RENPAP)</td>
<td>Member countries</td>
<td></td>
<td>515,736</td>
</tr>
<tr>
<td>Institute/Centre</td>
<td>A6</td>
<td>International Centre for Inclusive and Sustainable Industrial Development (IC-ISID)</td>
<td>DIPP</td>
<td>DIPP</td>
<td>928,078</td>
</tr>
</tbody>
</table>

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³ Project budget mentioned here does not include agency fee.

³ The project was originally named “Promoting industrial energy efficiency through energy management standard, system optimization and technology incubation”.

³ This SCIAP project was approved by the GEF Secretariat and all stakeholders and is ready for implementation.
### Inclusive Economic Development Under IC ISID

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Project Description</th>
<th>Line Ministry</th>
<th>Donor Agency</th>
<th>Tentative Budget (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A7</td>
<td>Kanpur Leather Development Project 2015-2017</td>
<td>CLRI</td>
<td>DIPP</td>
<td>884,955</td>
</tr>
<tr>
<td>A8</td>
<td>Development and Adoption of appropriate technologies for Enhancing Productivity in the Cement Sector in India</td>
<td>NCCBM</td>
<td>DIPP</td>
<td>1,124,500</td>
</tr>
<tr>
<td>A9</td>
<td>Development and adoption of green technologies for enhancing utilisation of Waste Material in the Pulp and Paper sector</td>
<td>CPPRI</td>
<td>DIPP</td>
<td>1,455,000</td>
</tr>
</tbody>
</table>

### SSC through IC ISID

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Project Description</th>
<th>Line Ministry</th>
<th>Donor Agency</th>
<th>Tentative Budget (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2</td>
<td>Promotion of Neem derived bio-pesticide in West Africa (Ghana, Nigeria, Sierra Leone)</td>
<td>IC ISID</td>
<td>DIPP</td>
<td>275,000</td>
</tr>
<tr>
<td>A3</td>
<td>Strengthening the technical service capabilities of the Kenya Industrial Research and Development Institute (KIRDI) in collaboration with the framework of the Kenya Subcontracting and Partnership in Coastal province, Kenya</td>
<td>IC ISID</td>
<td>DIPP</td>
<td>200,000</td>
</tr>
</tbody>
</table>

#### 2.3.3 Next generation projects under development and review / due for implementation

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Project Description</th>
<th>Line Ministry</th>
<th>Donor Agency</th>
<th>Tentative Budget (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A5</td>
<td>Ecosystem based livelihood promotion in the North East</td>
<td>MDONER</td>
<td>Mizoram</td>
<td>2,470,331</td>
</tr>
<tr>
<td>A11</td>
<td>National Air Quality Index</td>
<td>MoES</td>
<td>GEF</td>
<td>5,000,000</td>
</tr>
<tr>
<td>N18</td>
<td>Technology Upgradation of Bicycle and Bicycle Parts Industry</td>
<td>DIPP</td>
<td>DIPP</td>
<td>1,630,500</td>
</tr>
<tr>
<td>A13</td>
<td>Integrated Chemicals and Waste Approach for Sustainable Cities in India (IC-IAP Chemical)</td>
<td>MoEFCC</td>
<td>GEF</td>
<td>45,000,000</td>
</tr>
<tr>
<td>A14</td>
<td>Implementation of the BAT/ BEP strategies for elimination / reduction of U-POPs emission of the priority industry sectors identified in the NIP of India</td>
<td>MoEFCC</td>
<td>GEF</td>
<td>12,000,000</td>
</tr>
<tr>
<td>A15</td>
<td>UNIDO-ACMA-MoHI (Phase II)</td>
<td>MoHI</td>
<td>MoHI</td>
<td>2,500,000</td>
</tr>
<tr>
<td>A16</td>
<td>Cluster Development Project</td>
<td>DIPP</td>
<td>DIPP</td>
<td>1,800,000</td>
</tr>
</tbody>
</table>

---

1. The project budget revised from US $ 1,592,920 to US $ 1,630,500 by DIPP.
2. After discussion with stakeholders this project is now more focus on the ‘Construction and Demolition waste’ management and its application.
3. The scope of project ‘Promoting Industrial maintenance (TPM and corrosion management) amongst SMEs in selected manufacturing sectors in India-Methodology and skill development project’ as mentioned in the CP addendum under sr. no. N10 is incorporated as one component in this UNIDO-ACMA-MoHI phase II project.
UNIDO’s initiatives in India are spread across two broad components as per the Country Programme: Inclusive Economic Development and Green Industrial Development. The project portfolio also covers crosscutting issues like South-South cooperation and gender mainstreaming. The majority of UNIDO’s interventions in India concern with energy and environment, within context of green industrial development. UNIDO addresses various dimensions of industrial energy use such as renewable energy, energy efficiency, low carbon technology, waste to energy and innovation. Similarly, the environment related projects involve environmentally sound management and final disposal of PCBs, medical waste disposal and the development and promotion of Non-POPs alternatives to DDT.

Another noteworthy feature of UNIDO’s projects in India is Cluster Development. UNIDO provides technical assistance, technology transfer, expertise best practice sharing, demonstration and fostering entrepreneurship by targeting micro, small and medium enterprises at cluster level. To help these MSMEs take advantage of collaborations, economies of scale and shared learning, UNIDO targets clusters of SMEs in different industrial sectors such as the automotive components industry, foundries, ceramics, dairy, hand tools and metals, among many others, in different locations around the country. Cluster development also stresses on developing pools of experts to become trainers and cluster counsellors for greater impact.

**Partners in the progress: Important Govt. Ministries**

UNIDO is expanding its partnership with Govt. of India through collaboration with new ministries like MoUD and formulated new projects such as Sustainable Cities Integrated Approach Pilot in India.
The Dept. of Industrial Policy and Promotion (DIPP) under the Ministry of Commerce and Industries is nodal ministry for UNIDO in India. The figure shows key line ministries from the Govt. of India with whom UNIDO currently implements projects (number of projects in brackets). In addition, UNIDO is also growing its partnership with the Govt. of India through collaboration with new ministries like MoUD and formulated new projects such as Sustainable Cities Integrated Approach Pilot in India (SCIAP) to support their flagship programme like ‘Swachh Bharat Mission’ and ‘100 Smart Cities programme’.

The formulation and implementation of UNIDO projects in India are based on true partnership and collaborative approach. These projects are implemented with multiple stakeholders like industry associations, academic institutes, banks, in collaboration with the concerned ministries of the Government of India at central and state level and a range of experts and organisations from across the world. Some of our valuable partners involved in our current portfolio are mentioned below:

![UNIDO's Valuable Partners](image)

An overview of the projects which, UNIDO is currently implementing in India and their progress in 2016 is given in the following section.
3.1 Promoting innovative energy solutions with ultra low head micro-hydro power technology in India

**Brieﬁng description:**

The goal of the project is to increase the access of rural communities to renewable electricity in the State of Uttarakhand, India. The project included demonstration, deployment, and transfer of Ultra-Low Head (ULH) Micro Hydro Power (MHP) technology from Japan to the State of Uttarakhand. The project designed and demonstrated 3 pilot mini-grid systems for catalyzing productive activities based on 10kW ULH-MHP units, using existing infrastructure such as service water canals and irrigation canals.

The outputs of the project were as follows:

1. ULH-MHP (Ultra Low Head Micro Hydro Power) system installed and operational
2. Advisory support to create a favorable environment for ULH-MHP technology deployment

**Achievements:**

1.1 1x ULH system is successfully deployed and 70,080 kWh generated (INR 308,352, about US$ 4,800 of income) in 2013, system handed over;
1.2 1x ULH system is successfully deployed, generated about 30,000 kWh (estimated values) at site-3, community used electricity for processing of spices and marketing local agricultural produce to market for livelihood;
1.3 2x ULH installed system are operated and maintained by local operators, O & M training provided;
1.4 Over 250 people visited the 1st demo site (IRI Bahaderabad) and 150 visitors to 2nd and 3rd demo sites (Ambadi & Roorkee Watermill);
1.5 At Kaladhungi, infrastructure has been developed, agricultural processing assets, community has started processing agricultural produce and marketing since Aug 2015;
1.6 At Ambadi, infrastructure developed, processing assets procured, 1x system to be re-installed, community group trained on Operation and Maintenance (O&M) and marketing of processed agricultural produce;

2.1 ULH-MHP technology is included in the Policy Guidelines of the central government policy (Ministry of New and Renewable Energy (MNRE)). MNRE has made a provision of Central

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*From project’s Independent Terminal Evaluation report*
Financial Assistance of INR 125,000 (about USD 2000)/ kW for micro hydro projects and have now included ULH-MHP

2.2 State of Uttarakhand announced the Micro Hydro Policy on the Development of Micro & Mini Hydro Power Projects up to 2 MW, 2015;

2.3 Locally manufactured system installed and tested in the project sites and adaptation measures are on-going. Control panel fully manufactured locally. After-service can be made by local private sector. The generator and gear box are imported currently.

2.4 The technology provider invested for local manufacturing of the system and deployment with local partners;

2.5 The central and state governments have financed various enabling activities for ULH-MHP systems such as master plan survey (co-financed by MNRE), international conference and workshop; and

2.6 Irrigation Department is actively involved. Project established and strengthened a cross-cutting cooperation on renewable energy application particularly canal-based system with state agencies for energy and irrigation;

Key learning and Recommendations:

• For future projects that have a technology transfer component, it is recommended that UNIDO identifies, at the design stage of the project, the local manufacturers and technology service providers (such as O&M companies) to whom the technology would be transferred in order to ensure maximum absorption capacity in the country.

• The duration of the project of this nature (technology transfer, installation and successful demonstration) should be longer and hence UNIDO and the donor agencies should keep that into account while designing such projects

• In order to keep the momentum and fully realize the outcome of successful demonstration to ensure uptake, it is recommended that additional activities are carried out including more pilot projects with locally manufactured equipment

• UNIDO should give more emphasis on preparing and following a more systematic Monitoring and Evaluation (M&E) process such as preparing M&E plans and explicitly allocating budgets for systematic monitoring.

• Additional policies, particularly by the State government, to promote ULH and other kinds of small hydropower systems will be beneficial to ensure sustainability of developmental efforts through such pilots targeted at Rural Development.

10 From Independent Terminal Evaluation report of this project
3.2 Environmentally sound management and final disposal of PCBs in India

Brief description:
The MoEFCC, GoI has selected the environmentally sound PCBs management and disposal as one of the first priorities upon completion of the National Implementation Plan (NIP). The reason to give priority to the PCBs sector was that its implementation timeframes was clearly defined by the Stockholm Convention. The project is aimed to dispose of at least 7,700 tonnes of PCBs, PCB-containing equipment, PCBs-containing mineral oil and wastes and through it create national capacity to manage and dispose of PCBs countrywide.

The project addresses national priorities such as to improve legislation on POPs chemicals, to eliminate PCB-containing equipment, to reduce PCBs releases from industrial wastes and sewages, to improve environmental performance in power sector, to improve environmental performance in industry sector, and to identify PCBs wastes and contaminated sites and their environmentally sound and safe management.

The immediate objectives of the project are to:
- Strengthen the legal and regulatory framework for environmentally sound management (ESM) and disposal of PCBs, PCB-containing equipment and PCB-containing mineral oils and wastes;
- Improve institutional capacity at all levels for management of PCBs disposal;
- Removal of 7,700 tonnes of PCBs, PCB-containing equipment and PCB-containing mineral oils and wastes from targeted sites and transport them to disposal unit; and
- Disposal of 7,700 tones PCBs, PCB-containing equipment and PCB-containing mineral oils and wastes in an environmentally sound manner.

Planned budget: US$ 14,100,000
Donor: GEF
Duration: 60 months
Status: Ongoing
Partners:
- Global Environment Facility (GEF)
- Ministry of Environment, Forests and Climate Change (MoEF&CC)
- SAIL (Bhilai Steel Plant) and Central Power Research Institute (CPRI) Bangalore

Fig: Civil construction of the static PCB destruction and treatment plant at Bhilai Steel Plant, Bhilai (Durg)
The objectives are being achieved through a combination of strategies, including legislative and regulatory assessment, capacity building, public education, technology transfer, technology dissemination, technical training and technical support.

**Progress in 2016:**

- **PCB notification** - In exercise of the powers conferred under section 3 and section 6 of the Environment (Protection) Act, 1986 (29 of 1986), read with rule 13 of the Environment (Protection) Rules, 1986, the Central Government issued the Order, namely the “Regulation of Polychlorinated Biphenyls Order, 2016 on April 6, 2016.

- The project has been successful in awarding of three contracts for disposing at least 7700 tonnes of PCBs namely Supply A for a static facility for the destruction of 1700 tonnes of pure PCBs, Supply B of a static facility for the 3400 tonnes of PCB contaminated oil, equipment & wastes, and a mobile de-chlorination facility for treatment of transformer mineral oil containing PCBs (750 tonnes).

- The project has also developed PCBs management guidelines and revalidated the PCBs inventory.

- The updating of the inventory with additional 400 tons of pure PCBs and 600 tonnes of low concentration PCBs containing oil.

- The civil construction work and the commissioning of the static plants (both dechlorination & Plascon system) are being undertaken concurrently to save on time.

- The mobile dechlorination treatment facility on mobile platform for treatment of low level contamination of PCBs has been shipped to Chennai. All arrangements have been made for the commissioning, and operation of the system at CPRI, Bangalore.

- An itinerary for the mobile facility has been established updated PCB inventory for effective utilization of the mobile facility.

- Thirty four training workshops organized by CPRI during the last one year for stakeholders/owner of the PCBs and guideline distributed to over 2000 persons and a large number of organizations dealing with PCBs.

*Fig: Mobile dechlorination plant at CPRI, Bangalore*
3.3 Environmentally sound management of medical wastes in India

**Brief description:**

According to statistical data, India produces some 330,000 tonnes of health care waste annually, which amounts to 904 tonnes per day. As it is not segregated at source, all of it is to be considered hazardous despite the fact that only 5 to 10 per cent is actually hazardous and/or infectious in nature.

The main objective of the project is to reduce and ultimately eliminate the releases of unintentionally produced persistent organic pollutants (POPs) and other globally harmful pollutants into the environment from medical waste management, and assist India in implementing its relevant obligations under the Stockholm Convention. The project will promote the country-wide adoption of Best Available Techniques (BATs)/ Best Environmental Practices (BEPs) in health care institutions widely differing in their complexity and size. It will also assist to set up medical waste management infrastructure and industry in a manner that reduces adverse environmental impacts and protects human health.

The generator of medical wastes i.e. the Health Care Facilities (HCFs), presently shun their responsibility by handing over their wastes to the Centralised Biomedical Waste Treatment Facilities (CBWTFs) without stringent internalization of segregation of waste at source. The CBWTFs in turn use incineration technology for treatment and disposal of medical waste primarily due to perceived ease of operation of the technology and economics associated with it. The project aims to create a harmonized environment between the HCFs and CBWTFs in such a way that the responsibilities of environmentally sound management of medical waste are shared equally by both of them without compromising on the economics of medical waste management.
The project document builds on thorough baseline information collected through a survey of 57 CBWTF which represent 40% of all CBWTFs of the country and detailed assessment studies in the five selected states: Gujarat, Karnataka, Maharashtra, Punjab and Odisha. The Ramaiah Medical College and Hospital is the executing agency. The college is a private institution, which has already been involved in related projects notably with the World Health Organization (WHO). It benefits from hands-on experience on medical waste management and more generally, an extensive knowledge of local conditions and the medical industry.

The Project aims to reduce PCDD/PCDF (dioxin/furans) emissions that are generated unintentionally during the incineration of medical waste. The Project provides the following interventions for achieving the objective:

- Effective segregation of medical waste at source so that the quantum of waste going for incineration is reduced. The 140 hospitals selected in the 5 participating States are serving as demonstration sites to showcase model medical waste management system.

- The project realises the need for sound implementation of policy / regulations for efficient management of medical waste in the country. Hence the Project is studying existing legal/regulatory framework at national and state level in light of provisions of Stockholm Convention and harmonize / synergise the national and state implementation measures with Stockholm Convention requirements.

- The important issue of medical waste management would be comprehensively addressed with a long term vision of creating an enlightened creed of eco sensitive future health care professionals. This would necessarily imply targeting the budding doctors at the time of their education in medical colleges as medical waste management is more an issue of moulding attitudes rather than imparting extensive knowledge. Curriculum development across specialities like surgery, orthopaedics, OBG etc. which are high end waste generating specialities is desired and will yield quicker benefits by reinforcement of principles of environmentally sound management of medical waste at various levels of curriculum.

- Under the model district component, the Project endeavours to develop one demonstration district in each of the five participating states as model for sound management of medical waste. The learning’s from setting up of demonstration district may then be replicated in other districts in the states and the country.

**Progress in 2016:**

- Mid-term Evaluation of the project was conducted and the findings have been taken into account to improve implementation of the project.

- Technical and commercial evaluation of the global bids for the procurement of colour coded bins and trolleys completed and order placed with the vendor.

- Launching of Model District Component of the project in Ludhiana, Punjab has been done by Mr. Philippe R. Scholtes, Managing Director, UNIDO on 28 November 2016
• Launch of Training Component of the project in Bangalore, Karnataka has been done by Mr. Philippe R. Scholtes, Managing Director, UNIDO on 29 November 2016.

• Training program initiated in all the 5 participating states. 1st Training of Trainers (TOT) has been completed in all the five participating States

• New Bio-medical Waste Management Rules 2016 have been notified by the Government of India.

• A team of experts from the Government of India has undertaken study mission to Austria to study the medical waste management in the hospitals in Austria.

Fig: During review meeting of the project being conducted by Secretary (State of Punjab) in the presence of Mr. Philippe Scholtes’ Managing Director UNIDO
3.4 Development and promotion of Non-POPs alternatives to DDT

Brief description:

The Government of India signed the Stockholm Convention on POPs in May 2002 and ratified it on 13 January 2006. As part of its obligations under the Convention, India prepared its National Implementation Plan (NIP) and submitted it to the Secretariat of the Stockholm Convention on 21 April 2011. The Program Framework Document (PFD) approved by the GEF Operational Focal Point of India (MoEF) on 7 October 2010, identified six (6) projects that rank as top priority of the Indian NIP, among these is the project of identification and introduction of alternatives to DDT. India is the only country that still produces and exports DDT. As a result of continued use of DDT in the country and elsewhere in the world, namely in Africa, the mosquitoes have developed resistance and the recommended dose of DDT no longer remain effective to combat the mosquitoes menace. Hence, as in other countries where DDT has been used for a longer period of time, there is an urgent need to develop a phase-out strategy of DDT in the country.

The project is taking a holistic and country-wide approach to address the issue and support the nation in establishing viable alternatives for protection against malaria. Through a close coordination mechanism, the relevant government authorities and specifically the Ministry of Environment Forests and Climate Change (MoEF&CC), Ministry of Chemicals and Fertilizers (MoCF) and Ministry of Health and Family Welfare (MoHF&W) ensure that new policy and legislative framework would be prepared in time taking into account the overall interest of the country. Through the present project attempt is being made to combat the mosquitoes at different weak points of its lifecycle through the introduction of bt-based biopesticides and neem-based botanical pesticides and further reinforcing with LLIN impregnated with synthetic pyrethroids as the barrier.

Progress in 2016:

- The Inception workshop and launching of the project "Development and Promotion of Non-POPs Alternatives to DDT" was held on the 25th of February 2016 in New Delhi and was chaired...
by Shri Bishwanath Sinha, Joint Secretary, MOEF&CC. Ms. Erlinda Galvan, Project Manager, presented the work programme of the project. Technical experts from the participating intuitions provided technical presentation on different components of the project.

- Contract has been issued to IPFT to undertake project activities related to production of botanical pesticides through scaling up of various neem based pesticide formulations including technical training in formulation processes. Also, the production of bio-pesticides through scaling up of various Bt-based pesticide formulations including technical training in formulation processes.

- Contract has been issued to NBRI to undertake project activities related to Scaling up of production of neem based botanical pesticides through Public Private Partnership (PPP) model, establishment of Bt based bio-pesticides pilot production facility, development of business model for alternative products, awareness raising on the use and application of alternatives and promotion & propagation of new dwarf cultivars with early maturity and higher limonoids yield though tissue culture technology and other means. Detailed workplan is being worked out by the NBRI.

Fig: Use of long lasting insecticide bed net for the control of Malaria and Filaria
3.5 Promoting energy efficiency and renewable energy in selected micro, small and medium enterprises (MSME) clusters in India

**Brief description:**

The aim of the project is to develop and promote a conducive market environment for introducing energy efficiency solutions and enhanced use of Renewable Energy technologies for process applications in 12 selected energy-intensive MSME clusters in India with possible expansion to more clusters thereafter.

The project aims to improve the productivity and competitiveness of units in the five target sectors, namely: brass, ceramic, dairy, foundry and hand tool, as well as to reduce overall carbon emissions and improve the local environment. The project involves a combination of approaches to achieve this objective: demonstration projects, capacity building and training, exposure visits and study tour and eventually policy level work.

The project is already working in 10 clusters across the country. In the clusters the project has established collaboration with local industry associations, who in many cases anchor the activities on ground. It also works with local service providers and technology suppliers and the individual units themselves.

The project looks at energy efficient alternatives and renewable energy to control/reduce CO2 emissions and overall impact on the environment. It targets a total energy saving of 276,600 MWh annually and avoidance of 84,700 tonnes of carbon emissions per year by project end. It also aims to achieve an investment of US$ 16 million in energy efficiency and renewable energy technologies.

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**Planned budget** : US$ 7,172,097  
**Donor** : GEF  
**Duration** : 60 months  
**Status** : Ongoing  
**Partners** :  
- Global Environment Facility (GEF)  
- Ministry of Micro, Small and Medium Enterprises (MSME)  
- Ministry of New and Renewable Energy (MNRE)  
- Bureau of Energy Efficiency (BEE), Ministry of Power

![Fig: Hot metal being poured into moulds in a foundry unit at Coimbatore Foundry cluster](image-url)
The project is currently working in five (5) sectors across ten (10) clusters in India. These are:

- **Brass**: Jamnagar in Gujarat
- **Ceramics**: Khurja in Uttar Pradesh and Thangadh in Gujarat
- **Dairy**: Gujarat and Sikkim
- **Foundry**: Belgaum in Karnataka, Coimbatore in Tamil Nadu and Indore in Madhya Pradesh
- **Handtools**: Jalandhar in Punjab and Nagaur in Rajasthan

**Progress in 2016:**

- One demonstration installed at Amul, Gandhinagar, on parabolic trough for steam generation and operating successfully.
- 80 Case studies prepared and as a first step, 7 case studies were published in the form of pamphlets.
- Two inter cluster visit organized (one for Nagaur hand tool cluster to Jalandhar Hand tool cluster and other one for Sikkim milk union to Gujarat Dairy Cluster)
- Two international study tours to China (one for Ceramic Cluster to Guangzhou for attending Ceramic China 2016 and other one for foundry cluster to Metal China 2016 at Beijing.
- List of local service providers drawn up for further action.
- 9 dedicated Energy Management Centre (EMC) were launched for 9 clusters
- Implemented more than 90 small scale energy efficiency projects at cluster level.
- Publishing Best Operating procedures (BOPs) and Common Monitoring Protocols (CMPs) are in final stage and will be distributed in 9 clusters.
- Sikkim milk union came on board as 10th Cluster.
- The Morbi Ceramic Cluster came on board as 11th cluster and conducted inception workshop in January 2017.
- 30 Detail Project Reports (DPRs) are prepared by cluster leaders on various energy efficient technologies at 9 clusters.
- Appointed the cluster leaders at Indore, Thangadh and Khurja.
- 7 case studies were published and circulated in the 10 clusters. Soft copies of same were uploaded on GEF-WB-BEE project website for information dissemination.
- One information dissemination workshop organized at Gujarat Dairy Cluster for solar thermal steam generation pilot project installed at Amul Fed Dairy.

- More than 3500 energy efficiency 28 W ceiling fans were already replaced in Thangadh Ceramic Cluster and order for another 3500 EE fans is under way.

- Discussions with Maharashtra Dairy Cluster were initiated to bring them on board as 12th Cluster under the project.

- Initiated the process to appoint the consultant to carry out capacity building of local service providers.

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Fig: Study tour to China

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11 Recent inclusion, activities starting up
3.6 Promoting market transformations for energy efficiency in MSMEs

**Brief description:**

The objective of the project is to promote the implementation of energy efficiency in the MSME sector; to create and sustain a revolving fund mechanism to ensure replication of energy efficiency measures in the sector; and to address the identified barriers for scaling-up energy efficiency measures and consequently promote a cleaner and more competitive MSME industry in India. This will be achieved through four components:

Component 1: Programme to identify energy intensive clusters and replicable technologies
Component 2: Demonstration projects and aggregation of demand for technologies demonstration
Component 3: Financing models to support replication of energy efficiency projects in MSMEs
Component 4: Monitoring and Evaluation

**Progress in 2016:**

- Project started in the month of February 2016 with organization of inauguration function and the first project steering committee meeting.
- PMU office location is finalized and has started operating from October 2016 with the joining of National Project Coordinator.
- Scoping study has been started for 5 prospective clusters out of the 10-proposed clusters.
- Video graphic baseline study is accomplished in four clusters (Surat, Vapi, Jorhat and Ludhiana).

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**Planned budget**: US$ 4,465,455

**Donor**: GEF

**Duration**: 60 months

**Status**: Ongoing

**Partners**:
- Global Environment Facility (GEF)
- Ministry of Micro Small and Medium Enterprises (MoMSME)
- Bureau of Energy Efficiency (BEE)
- Energy Efficiency Services Ltd. (EESL)

![Fig: Kick off meeting with the Jalandhar Forging and casting industries.](image)
Fig: Due diligence of potential technologies being carried out by joint team of UNIDO, EESL and local consultant

Fig: Preliminary due diligence of potential technology at a Forging Unit in Ludhiana
3.7 Cleantech programme for SMEs in India (Global Cleantech Innovation Programme)

Brief description:
This project is a part of the Global Cleantech Innovation Programme (GCIP) of UNIDO which aims to promote clean low carbon technologies to reduce energy consumption and CO₂ emissions of the Indian industrial sector. The project focuses on clean technology innovations focused on the manufacturing sector, coming specifically from existing MSMEs. This promotes technologies that are marketable and tested, and facilitates the efficient performance of industrial sub-sectors. Such coverage not only reduces environmental impact, but also helps in alleviating energy poverty and maintaining industrial growth. The project focuses on SMEs that have innovated and can develop commercially viable, clean, low carbon technologies to reduce GHG emissions. The programme also gives SMEs international exposure by providing them a platform to compete globally. The winners of the national competition are given an opportunity to compete at the Global Cleantech Open in USA, which is the knowledge platform of UNIDO for this programme. The participants get to interact with mentors and SMEs from all over the world at the Global Forum.

Progress in 2016:

1. A total of 191 number of applications were received by the GCIP India Accelerator Programme 2016 through various channels, such as Ministry of MSME, DIPP, NRDC, WWF, TIFAC, CII, FICCI and CII. Out of this, 19 clean technology innovations were shortlisted as semifinalists by a Screening committee as the first judging round held in May.

2. 15 volunteer mentors were selected from the energy sector to mentor the semi-finalists. The experience of the mentors ranged from entrepreneurs, consultants, venture capitalists, government officials and service providers.

3. A three-day national workshop was organized in June 2016 to bring interface between the mentors, semi-finalists, and the team from Cleantech Open USA (CTO), UNIDO’s knowledge partner in GCIP. The workshop was attended by 18 semi-finalists, 12 mentors and 2 members from the Cleantech Open US team.

4. Mentoring of semi-finalists through Webinars was carried out by (CTO) team for a period of 3
months, and thereby trained the participants on broad areas for taking innovation to the market, such as: marketing, commercialization, legal and financial aspects. These webinars served as a global platform for exchange of ideas and learning.

5. Two Business Clinics were organized in Delhi and Bengaluru in months of July and August respectively, in order harness on the mentor-mentee interaction and streamline the Innovators’ queries. These served as a platform for one-to-one interaction between the Mentors and Semifinalists based on the latter’s requirements.

6. The semi-finalists were judged on the following set criteria: Completion of the 8 worksheets; Executive Summary; Investor Presentation; Investor Pitch. The second judging round selected the top 7 teams by a panel of 8 subject-expert judges in October.

7. A third judging round was held in October 2016 as well. The four-member jury comprised of senior officials from government, industry & academia. Team GIBSS (Green India Building Systems and Services Private Limited) was selected as the winner and Team Cellzyme Biotech was declared the runners-up.

8. A half-day event comprising of innovator-investor interaction was organized in 15-minutes slots for each. About 11 investor organizations participated and up to 63 one-on-one interactions were conducted. The GCIP served as a platform to facilitate access to finance for startups.

9. The National Research Development Corporation (NRDC), as a partner organization of GCIP 2016 programme, paid visits to each of the 19 semi-finalists and assessed the claims made by the innovators.
3.8 Facility for low carbon technology deployment programme

**Brief Description:**

The UNIDO Facility for Low Carbon Technology Deployment in India aims to facilitate the adoption of low-carbon technologies across the Indian industrial sector. The project aims at strengthening the collaboration between government agencies, industry, innovators, the research community, financing institutions, and technology experts in the field of innovative low-carbon technologies and establishing an innovation ecosystem for such technologies to thrive.

The Project is aligned with the goals of India’s National Action Plan on Climate Change (NAPCC), and specifically its sector specific National Mission on Enhanced Energy Efficiency (NMEEE). This Facility was proposed amongst a suite of projects to support India’s NMEEE implementation by the Bureau of Energy Efficiency. The proposed Facility will help Indian and other countries’ entities to work collaboratively on solving the major prioritized climate mitigation technology challenges, guided by industry and academic experts.

**Progress in 2016**

- First meeting of the Project Steering Committee held to mark the project start
- UNIDO, as per the decision of Project Steering Committee meeting, has setup the Project Management Unit
- UNIDO has carried out due diligence and engaged four resource persons for the Project Management Unit (PMU).
- A 6-month schedule of activities up till April 2017 was prepared by the PMU and shared with Bureau of Energy Efficiency (BEE)
- List of subject experts for the three verticals of the project has been prepared by PMU and submitted to BEE
- An ‘Explainer Video’ and a ‘Brochure’ has been prepared for providing a brief introduction to the FLCTD project
Energy: Efficiency, Innovation, Renewable

Fig: Still from the explainer video. All communication mediums are used for the knowledge dissemination and publishing the project related information for better outreach and impact.
3.9 Promoting business models for increasing penetration and scaling up of solar energy

Brief description:
The project focuses on developing business models for promoting solar energy based heating and cooling applications in selected industrial sectors in line with the priorities outlined in the National Action Plan on Climate Change (NAPCC) and the Jawaharlal Nehru National Solar Mission (JNNSM). This serves then to reduce greenhouse gas (GHG) emissions and increase industrial competitiveness of the national economy.

The outcomes of the project are as follows:

1. Enhanced penetration and scaling up of solar energy in medium and high temperature applications in identified industrial sectors building upon existing frameworks and central support instruments of MNRE.

2. Demonstrated technical and financial viability of projects; enhanced local manufacturing capability for industrial applications.

3. Developed pipeline for replication; Assistance to similar projects in the country through financing facility; Quality assurance and certification.

Progress in 2016:

- A new innovative financing scheme has been developed in partnership of Indian Renewable Energy Development Agency (IREDA) and MNRE to promote Concentrated Solar Thermal (CST) technologies for process heat applications in industries. The details of the loan scheme are available on IREDA's website http://www.ireda.gov.in/forms/contentpage.aspx?lid=740

- With the integration of IREDA as the fund manager to the project, the scheme would support the beneficiaries by bundling the MNRE’s subsidy and the soft loan, thereby providing upfront access to 75% of CST project cost. The project would, in a similar manner, provide loans for...
setting up facilities for manufacturing of CST systems and components in India.

- CST Awareness campaign was organized by UNIDO through organizing eleven state level workshops jointly with MNRE and in association with the respective State Nodal Agencies. The workshops were coupled with site visits. In total 11 workshops and 16 site visits were conducted which were attended by more than 1200 participants.

- The 200 MW CST Roadmap 2020 report is prepared.

- Pro-target AG and its Indian counterpart Luit Renewable Limited has been engaged to provide technical advisory to ensure international quality of the Feasibility and Detailed Project Reports.

- Thermal processes suitable for solar integration were mapped in the 14 selected industrial sectors.
3.10 Organic waste streams for industrial renewable energy applications in India

Brief Description:

The project focuses on using organic waste streams for industrial renewable energy (RE) applications in SMEs, in support of the energy policy priorities, with the overall aim to promote the application of innovative and adaptive technology in the target SME sectors and reduce their dependency on fossil fuels.

The expected outcomes of the project are as follows:

- Demonstrated technical and financial viability of 2-4 projects in the range of 0.25–2 MW (or equivalent thermal energy).
- Sustainable replication model for effective scaling up of different technologies across target industries.
- Enhanced capacity of key players in target industries, promotion of knowledge and information sharing and dissemination of best practices.

Progress in 2016:

- Appointment of Deputy National Project Manager and National Technical Officer in January 2016. The first meeting of the Project Steering & Advisory Committee was held on 15 September 2015 in the Ministry of New and Renewable Energy, Government of India.
- UNIDO published a call for proposals for the provision of services related to mapping the availability of urban and industrial organic waste in India in February 2016. Arcadis India Private Ltd. was awarded the assignment after the evaluation of all the proposals received at UNIDO HOs.
As directed in the PSAC meeting, a moderated Brainstorming Session of various stakeholders from Organic Waste to Energy (OWtE) sector, including Joint Secretary and Advisor MNRE, state nodal agencies, technical consultants, experts, project developers, and financial institutions was organized by UNIDO on 31st May 2016. The main objective of the Session was the project inception with deliberation on the potential innovations that could be considered for demonstration OWtE projects.

Fig: Brainstorming Session (L-R): Mr VK Jain, Advisor, MNRE; Dr NP Singh, Advisor, UNIDO; Mrs V Joshi, Joint Secretary, MNRE; Ms Ayumi Fujino, UNIDO Representative & Director; Anil Misra, NPM, UNIDO & BR Mishra, Dy. NPM, UNIDO
Brief Description:
To integrate sustainability strategies into urban planning and management and to create a favorable environment for investment in infrastructure and service delivery, thus building the resilience of pilot cities. The following are the expected specific project outcomes:

- Increased scope and depth of integrated urban sustainability management policies and processes, including institutionalization within the local governance structure
- Low-emission and environmentally-sound technologies contribute to city greenhouse gas emission reduction
- Promotion of "Sustainable Cities" through partnership approach

Progress in 2016:
- The project documents has been drafted and GEF’s comments answered in the final version.
- The GHG inventory was initiated and is ongoing in the participating cities. The participating cities have joined the training workshops of the Global Platform for Sustainable Cities.
- The UNIDO and MoUD have hosted a Validation Workshop in February 2016 and a Partnership Workshop in September 2016.
- Assist people from Municipal Corporation, Bhopal and ensure their active participation in the Technical Deep Dive on Smart Cities: Laying the Infrastructure for Competitiveness, Innovation and Engagement held in Tokyo & Yokohama, Japan on Nov 14 - 18, 2016
- Facilitate Municipal Commissioners from our project cities to participate in the Municipal Financing and Credit Worthiness Academy, held in Washington DC, on 5-8 December 2016
- The final project document was submitted to the GEF on December 23, 2016. The GEF CEO endorsement awaited.
Fig: Singapore Workshop with Municipal Commissioners/ senior officials from respective cities

Fig: Cities creditworthiness workshop in Washington DC
3.12 Supporting small and medium-sized manufacturers in the automotive component industry in India: Deepening and widening the services provided within the framework of the UNIDO-ACMA-DHI Partnership Programme

**Brief description:**

This project was initiated after the success of its predecessor project over the period 2005-2009. The mandate of the current project is to take forward the interventions executed by its predecessor and to further strengthen Indian small and medium-sized automotive component suppliers to meet the requirements of vehicle manufacturers and Tier-1, Tier-2, Tier-3 and other automotive component manufacturers. The project hinges on the collaboration between ACMA and UNIDO to bring SMEs in the auto component sector up to international standards and international trade requirements.

The project aims to facilitate the inclusion of these SMEs into national, regional and global supply chains and meeting relevant supply chain requirements (quality, cost, and delivery, as well as Occupational Health & Safety (OHS), energy efficiency and environmental management). The project also looks to consolidate the institutional set-up, the UNIDO-ACMA methodology and a pool of well-trained national experts and counsellors in an effort to better assist auto component manufacturers to make use of the partnership and to enhance the competitiveness of the target companies along the supply chain in India, including lower tier suppliers.

The current phase-I (2014-2017) of UNIDO-ACMA Partnership Programme is foreseen to conclude by June 2017. The feedback received from participating companies, national experts and technical counsellors of the project, and the main cooperation partner in the project, the Automotive Component Manufacturers Association of India (ACMA) and DHI was overwhelmingly positive and stressed the importance of continuity in support to lock in the gains already realized and of providing Programme services to a larger number of companies. The proposal for Phase-II of the programme (2017-2019) has been submitted to Department of Heavy Industries.

**Progress in 2016:**

- Meetings of the Project Steering Committee Meeting were held on 8 April 2016 and 24 November 2016 to assess progress of the project.
Project Overview (Current Status)

A. Total no of Clusters: 26 (155 companies as against target of 120 companies i.e. covering ~30% more than initial target)
   a) Completed : 50 Companies
   b) Ongoing : 105 Companies

International Expertise:

A. After successful organization of first Study Tour in January 2016, UNIDO organized second Study Tour in India from Belarus from 25-29 July 2016. The Participants received training in implementation of continuous improvement techniques through a mix of classroom trainings and shop floor visits. Training was delivered by senior experts of ACMA - UNIDO’s partner in past and ongoing programs.

B. UNIDO international expert visited India twice in Nov 2015 and March 2016 to build capacity of ACMA counselors on TPM, quick response quality control (QRQC) etc.

C. The ongoing Benchmarking activity aims to ensure rigorous monitoring and assessment of individual company results in terms of growth, operational performance and productivity - M/s. B&M Analyst South Africa.
   - Two capacity building workshops were organized to train counselors on the benchmarking process
D. Training on “Theory of Constraints” to the counselors by GIZ, Germany
E. Conducted Training on "Resource Efficient and Cleaner Production" (RECP) by M/s Stenum Asia
F. On-the-job training for ACMA counselors was carried out.

Fig: Different stages of project implementation
The UNIDO International Centre for Inclusive and Sustainable Industrial Development (IC-ISID) was set up by integrating and strengthening two former centres respectively – UNIDO Centre for South-South Industrial Cooperation (UCSSIC) and International Centre for Advancement in Manufacturing Technology (ICAMT). IC-ISID aims to strengthen the productivity and competitiveness of micro, small and medium enterprises (MSMEs) in priority manufacturing sectors in India as well as in other developing countries. The main objectives of the Centre are:

- To promote the adoption of advanced technologies in the manufacturing sector in India to strengthen the productivity and competitiveness of MSMEs
- To identify and transfer the best and proven technology-led solutions from India to developing countries, particularly Least Developed Countries (LDCs), under the South-South Cooperation framework
- To serve as a model centre of excellence to promote targeted interventions in select industrial and manufacturing sectors

IC-ISID’s operational framework follows an integrated approach, which focuses on products and markets, technology and innovation, manufacturing excellence, cluster capacity-building, and partnerships aimed at:

- Enhancing competitiveness of industries and clusters
- Capacity building and skills development
- Promoting national and international cooperation for inclusive and sustainable industrial development (ISID)
- Gender mainstreaming.

**Projects under the International Centre for Inclusive and Sustainable Industrial Development (IC-ISID)**

3.13 International Centre for Inclusive and Sustainable Industrial Development (IC-ISID)

- **Planned budget**: US$ 928,078
- **Donor**: DIPP
- **Status**: Ongoing
- **Partners**
  - Department of Industrial Policy and Promotion (DIPP)

**Brief Description:**

Fig: Inauguration of (IC-ISID)
Progress in 2016:

1. IC-ISID is currently executing three projects for the leather, cement and paper sectors in India. The projects under the Centre also include two South-South cooperation projects.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Project title</th>
</tr>
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<tbody>
<tr>
<td>Leather</td>
<td>Kanpur leather development project</td>
</tr>
<tr>
<td>Cement</td>
<td>Development &amp; adoption of appropriate technologies for enhancing productivity in the cement sector</td>
</tr>
<tr>
<td>Paper</td>
<td>Development and adoption of appropriate technologies for enhancing productivity in the paper and pulp sector</td>
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<tr>
<td>Neem</td>
<td>South-South cooperation projects</td>
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<td>Promotion of Neem derived bio-pesticides in West Africa (Ghana, Nigeria, Sierra Leone)</td>
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<tr>
<td>KIRDI</td>
<td>Strengthening the technical service capabilities of the Kenya Industrial Research and Development Institute (KIRDI) in collaboration with the framework of the Kenya Subcontracting and Partnership Exchange Programme (SPX)</td>
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</tbody>
</table>

Fig: Visit of Ms. Ravneet Kaur, Joint Secretary, DIPP, to IC-ISID, September 2016
2. During 2016, IC-ISID established linkages with various international organizations, including R&D institutions, industry associations and promotional agencies towards effective implementation of project activities and developing long-term cooperation.

3. The Centre also participated in various events such as:
   - BRICS Business Council Working Groups’ Meeting, 14th October 2016, New Delhi, organized by the Federation of Chambers of Commerce and Industry (FICCI)
   - India-UK Tech Summit, 7-9 November 2016, New Delhi, jointly organized by the Department of Science and Technology, Government of India and the Confederation of Indian Industry (CII)
   - Consultation meeting for the project - “Cooperation amongst SMEs from BRICS Countries through E-commerce Development and Technology Transfer” (20th December 2016), New Delhi. The event was co-organized by UNIDO and FICCI, with the support of IC-ISID
### INDIA-BASED PROJECTS

#### 3.14 Kanpur leather development project

<table>
<thead>
<tr>
<th>Planned budget</th>
<th>US$ 884,955</th>
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<tbody>
<tr>
<td>Donor</td>
<td>DIPP</td>
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<tr>
<td>Duration</td>
<td>2 years</td>
</tr>
<tr>
<td>Status</td>
<td>Ongoing</td>
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<tr>
<td>Partners</td>
<td></td>
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<tr>
<td>- Uttar Pradesh Leather Industry Association</td>
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<tr>
<td>- Department of Industrial Policy and Promotion (DIPP)</td>
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<tr>
<td>- Central Leather Research Institute</td>
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<td>- Council for Leather Exports</td>
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**Fig: Leather tannery: Hair save un-hairing machine**

**Brief Description:**

The project aims to enable local leather-based industry (in the three clusters around Kanpur – Unnao, Banthar and Jajmau) to sustain conversion of locally available raw hides and skins into exportable products, either directly as genuine leather or as derived finished products (using environment friendly technologies), thereby providing employment and income opportunities. The project activities are oriented towards addressing sustainability and minimisation of waste at source, use of cleaner tanning technologies, improved efficiency of effluent treatment plants, common waste water treatment facilities, promoting occupational health and safety, and productivity/quality improvement to subsequently improve enterprises' performances and business linkages.

**Progress in 2016:**

1. Cleaner tanning technologies to reduce pollution load from tanneries thereby reduce the environmental footprint were demonstrated through 8 pilot demonstration units (PDUs) at a commercial scale with close participation of tanneries. Hair save unhairing (PDU1), water mixing and measurement (PDU2), solar water heating system (PDU3), solar air heating system (PDU4), processing chilled hides to reduce TDS in effluent (PDU5), desalting of raw stock (PDU6), lime liquor recycling (PDU7) and water control system for traditional fleshing machines (PDU8) were established. These technologies reduce either the volume of effluent discharges from tanneries or reduce the level of pollutants in the tannery effluent or both. These pilot units have already achieved encouraging results, namely, reduction of water footprint by 20% in overall leather processing, reduction of suspended solids by 61% in liming floats, TDS reduction by 30% by using chilled hide processing, energy footprint reduction in leather processing by 5% through use of solar heating systems. These pilot units have been closely monitored and the results are disseminated through on-site demonstrations,
workshops and factsheets. Simultaneous propagation among the stakeholders in the clusters were done through Core Group on Cleaner Technologies.

2. Learning material and courses on sustainable leather manufacturing and occupational health and safety related aspects for tanneries and effluent treatment plants were made available to tanneries on the Leather Panel Portal https://leatherpanel.org/. Further, training courses and e-learning modules are being developed on the same topics.

3. INNA- Innovation Award- An awarding system to promote best practices in cleaner technologies, improved occupational health and safety and energy conservation has been promoted through the associations, Uttar Pradesh Leather Industries Association and Small Tanners Association.

4. Training: In so far, 14 training programmes were conducted on various topics, which involved two international experts. The e-Learning programme on “How to deal with hydrogen sulphide gas” attracted many tanneries and now 54 persons have completed this course and obtained certificates from UNIDO. The project has addressed 628 candidates in various training programmes. Blended training course by combining the IT enabled training and classroom orientations was developed as a unique model for the technical employees in the tanneries as well as students undergoing the regular courses. A paper on the same was presented to XXXIV IULTCS World Congress and well received by participants.

5. Energy assessment and carbon footprint in leather processing were conducted in six units by an international expert, which is a first-of-its-kind exercise for the leather industry in India. Parallel to this, comprehensive energy audit was also conducted and energy consumption pattern in leather processing has been developed.

6. On-site demonstrations on use of H2S gas detection equipment were conducted in tanneries. For implementation of other OH&S measures in tanneries, an inventory of manuals was made available. A manual on H2S safety practices was prepared in English and Hindi and circulated among the tanners in this region.

7. Environmental management systems requirements and implementation guidelines were provided to 33 personnel from 13 tanneries. This training included Leather Working Group’s
Environmental Stewardship Certification, which is widely accepted by many brands and consumers.

8. A paper on flow and energy analysis in Zero Liquid Discharge (ZLD) was prepared by evaluating data from three common effluent treatment plants. The findings were presented in IULTCS World Congress, and is now available as a reference document for whole leather sector.

9. Pilot demonstrations on occupational safety and health related aspects have now been identified and in progress to few small tanneries in Jajmau cluster in Kanpur.

10. A concept paper for overall waste management plan, incorporating available options for conversion or disposal of solid wastes, has been prepared.

11. Core Group in Cleaner Technology has been instituted comprising of all stakeholders in this region, namely associations, R&D institutions, training institutions and trade promotion agencies with an objective to closely work with the project and disseminate the knowledge among their members and sustain the cleaner technology interventions in the cluster.
The objective of this project is to support the Indian cement sector by strengthening the capacity and capability of the nodal technical institution for the Indian cement sector - the National Council for Cement and Building Materials (NCCBM) - to provide management and technical support to the cement industry. The expected impact and results of the project are:

- Facilitation of the efficient usage of resources, adoption of latest technologies and implementation of global best practices in the Indian cement sector
- Strengthened capacity and capability of NCCBM
- Improved global competitiveness of the Indian cement sector

The modalities of implementation include transfer of technical know-how, facilitation of the transfer of state-of-the-art technologies to the Indian cement sector, and a wide range of technical capacity-building and knowledge sharing activities such as technical workshops, international study tours, fellowship training programmes, on-site training, twinning with international organizations and facilitating the development of standards for the sector. Some of the key focus areas for these activities are waste-derived fuels, CO2 emissions, patents and intellectual property rights (IPRs) and green technologies.
Progress in 2016:

1. A diagnostic assessment of NCCBM was completed. The assessment included two phases of on-the-shop-floor consultations by the international consultants (Phase 1 during 13-20 Mar 2016 and Phase 2 during 01-05 Aug 2016) at NCCBM, a visit to a cement plant, diagnostic sessions with two cement companies, a diagnostic session with CMA, and an online survey to seek feedback from industry units.

2. A benchmarking assessment to reflect global best practices has also been completed with the diagnostic assessment.

3. Based on the findings of the diagnostic assessment, an action plan was prepared and presented to DIPP and NCCBM during the action plan meeting held on 27th October 2016.

4. Three technical workshops were organized for the scientists and engineers of NCCBM.
   - 'Usage of Alternative Fuels (AF) and Alternative Raw Materials (ARM)' – 7-9 June 2016
   - 'Best Available Technologies (BAT)' – 12-14 July 2016
   - 'Key Performance Indicators (KPIs)' – 28-29 July 2016

5. Two international study tours were conducted in 2016.
   - The first study tour (5-9 September 2016), focusing on management & strategy aspects, covered relevant institutions in Germany (Verein Deutsche Zementwerk (VDZ) & European Cement Research Academy (ECRA)), a preparation unit for AF including the cement plant in Austria (Lafarge) and the industry association (The Association of the Austrian Cement Industry VOZ, Smartimminerals) Austria.
   - The second study tour (18-26 October 2016), focusing on technical aspects, covered visits to organizations in Belgium (CBR Heidelberg Cement, Lixhe, Recyfuel, Walloon Business Federation), Germany (SCHWENK Zement KG) and Poland (Lafarge Cement, Novago Alternative Fuel preparation site and the Polish Cement Association - SPC).

6. Discussions with the potential international partners for fellowship training programmes were held during the study tours. The areas for such training have been identified.

7. A learning-by-doing component for on-site training of NCCBM’s scientists and engineers at cement plants is being developed.
The objective of the project is to strengthen the global competitive position of the Indian paper and pulp sector by introducing advanced technologies, building capacity, enhancing skills and transferring knowledge/expertise. The project activities look to strengthen the capacity and capability of the nodal technical institution for the Indian paper and pulp industry, the Central Pulp and Paper Research Institute (CPPRI), and industry associations like Indian Paper Manufacturers Association (IPMA), Indian Agro and Recycled Paper Mills Association (IARPMA), Indian Newsprint Manufacturers Association (INMA) and Indian Recycled Paper Mills Association (IRPMA) to provide management and technical support to the pulp and paper industry.

The project activities include a diagnostic assessment to identify technology gaps, technology benchmarking and various capacity building and skill enhancement activities, including transfer of state-of-the-art technologies to target beneficiaries, technical workshops, international study tours, fellowship training programmes, twinning with international organizations, learning-by-doing and training of trainers. These activities are intended to provide support to the beneficiaries to strengthen their technical capacity and technology transfer mechanisms, and to foster international linkages and cooperation. The focus areas of the project are environment-friendly bleaching (including ozone bleaching), biochemical/membrane separation processes for reduction of colour and TDS in effluent, liquor heat treatment and waste disposal and management.
**Progress in 2016:**

1. Paper clusters were identified in the northern, southern, western and eastern regions for diagnostic and technology benchmarking assessment. Further, in order to sensitize the participants about the project activities and incorporate their inputs in the project document, four consultation meetings across India were conducted: Kashipur, Uttarakhand (18 February 2016), Chandigarh, Punjab (5 March 2016), Vapi, Gujarat (12 March 2016) and Coimbatore, Tamil Nadu (19 March 2016).

2. A diagnostic assessment of CPPRI and the industry associations was undertaken. The assessment covered detailed information pertaining to CPPRI and the selected industry associations, including organizational and governance structure, areas of activities, database of members from each association, key legislations pertinent to the sector, CVs of staff to be trained, list of global firms/institutes for capacity building/study tours, R&D infrastructure, challenges faced in servicing clients, gaps faced and requirements of international and technical support network etc.

3. A technology benchmarking assessment vis-à-vis global best practices has been completed. This involved detailed consultations of international experts with CPPRI and the industry associations, visits to nine paper units and a review of the process flow, machineries and technical aspects.

4. A workshop on 'Key Performance Indicators (KPIs)' for CPPRI and the associations was conducted on 2-3 May 2016 in Delhi.

5. Based on the findings of the diagnostic and technology benchmarking assessment, an action plan was prepared and shared during the action plan meeting held on 21 June 2016 at DIPP.

6. An international study tour (2-11 November 2016), focusing on management and strategy aspects, to Norway, Sweden and Belgium was conducted. It included visits to R&D institutions/companies and funding agencies like the Paper and Fibre Research Institute (Norway), Research Council of Norway (Norway), Innovation Norway (Norway) and Innventia (Sweden); site visits to a bio-refinery- Borregaard (Norway) and a paper mill- Norske Skog Saugbrugs (Norway); meetings with industry associations like Skogsindustrierna- Swedish Forest Industry Federation (Sweden), the Confederation of European Paper Industries (Brussels) and the Forest Technology Platform (Brussels); and meeting with the European Commission (Brussels).

7. Discussions with the potential international partners for fellowship training programmes and prospects for twinning were held during the study tour.

8. The second study tour (14-23 February 2017) to Norway and Sweden was finalized. It is intended to expose the scientists of CPPRI to the best practices, latest technologies and state-of-the-art facilities within some of the Europe’s leading institutions in the pulp and paper sector.
Fig: Paper-Delegation from the Central Pulp and Paper Research Institute (CPPRI) and paper industry associations visiting Norske Skog, a newsprint and magazine paper mill, during an international study tour to Norway, Sweden.

Fig: Delegation from the Central Pulp and Paper Research Institute (CPPRI) and paper industry associations visiting a laboratory at the Paper and Fibre Research Institute (PFI), Norway, during an international study tour to Norway, Sweden and Belgium; 2-11 November 2016.
**Brief Description:**

The programme focuses on promoting the use and development of production capacity of eco-friendly and cost-effective pesticide derived from Neem kernels, in three countries in West Africa: Ghana, Nigeria and Sierra Leone. It aims to arrange national coordination, provide training to key personnel involved in field implementation, sensitize potential stakeholders and finalize individual work-plans. The production and use of Neem kernel-derived bio-pesticides is aimed at boosting rural development, promoting agribusiness and micro-industries, alleviating poverty and generating employment, while at the same time strengthening environmental protection and eliminating health hazards by providing a low-cost bio-efficient alternative to toxic POPs and non-biodegradable chemical pesticides, and supporting organic food production.

**Progress in 2016:**

1. Issuance of contract to National Technical Partners in all participating countries (Ghana, Nigeria and Sierra Leone) completed in May 2016.

2. Scientific field trials on different crops were undertaken in Ghana and Sierra Leone, and trials on more crops and in farther areas are ongoing. In Nigeria, Neem census and field trials were started in August 2016.

3. Bio-efficacy evaluation on select crops is ongoing in Ghana and Sierra Leone. This activity has also been started in Nigeria in August 2016.

Bio-efficacy and phyto-toxicity data generation on different crops (for three seasons) at different locations in the three countries was initiated to prove the effectiveness of the Neem
based pesticides (NKAE) against the economically important pests on different crops.

4. In Ghana, training workshop including field demonstration on the collection and processing of Neem seeds was organized in April 2016 by the technical team of School of Agriculture. The workshop was attended by forty-seven (47) farmer trainees of the Leventis Foundation Farmers Training Programme (LFFTP).

5. For the demonstration of NKAE in Ghana, farmer trainees (47 trainees in Accra, 30 trainees in Kade and 30 trainees in Kpong) have been allocated plots to grow vegetables; recommended agronomic practices are being used; pests are being controlled using Neem kernel aqueous extract.

6. In Nigeria, National Neem Coordinating Cell (NNCCs) has been established and the Neem survey started; terms of reference (TORs) for the technical partnering institution in Nigeria were drafted and issued in June 2016. Groups were formed and assistance provided for undertaking field activities.

7. Technical specifications for mechanized pesticide production demonstration plants were prepared, Indian vendors were identified and the tender process was undertaken. The equipment has been delivered to the Neem centres in Ghana & Sierra Leone.

8. Ghana & Sierra Leone: Training manual provided to Neem centres; seminar to educate the 1st batch of farmer trainees was organized soon after the training programme from India. The trainings are ongoing in Nigeria.

9. The Project Steering Committee meeting was held in Accra, Ghana in August 2016.
3.18 Strengthening the technical service capabilities of the Kenya Industrial Research and Development Institute (KIRDI) in collaboration with the Kenya Subcontracting and Partnership Exchange Programme

**Brief Description:**
The project aims at improving the capacity of KIRDI to enhance productivity and quality of industrial training and to become a Centre of Excellence in industrial research, technology and innovation in Kenya, and to expose senior policy makers and technocrats from Kenya to the latest trends in industrial policy development and appropriate technologies, and establish institutional linkages with Indian industrial R&D institutions. The main focus areas of the project are as follows:

- Improvement of product design capability of KIRDI through the increased application of CAD/CAM
- Improvement of product testing capabilities in KIRDI
- Provision of holistic support services to prospective Kenyan suppliers in the metal and electronics sector (Subcontracting and Partnership Exchange)

**Progress in 2016:**
1. Trainings on 'Machine Tool Design- Mechanical' at IMTMA (Apr-May 2016 for 3 KIRDI staff members), 'Finishing School in Production Engineering' at IMTMA (Apr-May 2016 for 2 KIRDI staff members) were conducted.
2. The order for the installation of CAM software at the KIRDI CAD/CAM centre was placed.
3. Background activities for in-house training sessions for KIRDI personnel by trainers trained in India with support of IMTMA Experts were conducted (engaging experts, consultations, issuance of contracts, etc.)
4. Procurement of equipment to improve the product testing capabilities in KIRDI was finalized (including drafting of TORs, clearance, receipt of offers, placement of order).
5. A one-week capacity building training was provided to SPX Team; supplier database of 250 company profiles was updated and uploaded on SPX MIS system; SPX benchmarking services provided to supplier firms; Linkages established with the Kenya Association of Manufacturers.
6. SPX support to domestic companies in B2B sessions organized with incoming delegations from Mauritius (4 companies), South Korea (10 companies) as well as with Turkey (5 companies).
7. 10 supplier companies from the metals and electronic manufacturing sectors have been selected for eventual provision of tooling and testing services by KIRDI.

**Planned budget**: US$ 226,000

**Donor**: Department of Industrial Policy and Promotion (DIPP), Government of India

**Status**: Ongoing

**Partners**:
- Indian Machine Tool Manufacturer’s Association (IMTMA)
4. PROGRAMME DEVELOPMENT – KEY AREAS OF COOPERATION

- **UNIDO’s Mandate: ISID and SDGs**

  The newly adopted 2030 Development Agenda lists 17 Sustainable Development Goals. Goal 9: ‘Build Resilient Infrastructure, promote inclusive and sustainable industrialisation and foster innovation’ recognises the importance of inclusive and sustainable industrialisation as an important driver of economic growth and sustainable development. Thus, UNIDO’s ISID mandate has been brought to the fore.

As a specialised agency, UNIDO aims to promote industrial development for poverty reduction, inclusive globalisation and environmental sustainability. In accordance with SDG 9, ISID can serve as an engine for job creation, economic growth, technology transfer, investment flows and skill development, as was also acknowledged in the Addis Ababa Action Agenda of the Third International Conference on Financing for Development held in July 2015.

Specific industry-related targets have also been identified for the other SDGs, making UNIDO’s interventions central to the international development effort. UNIDO’s extensive expertise in supporting industrialisation in developing countries makes the organisation a pivotal point in implementing the industry-related targets across all SDGs. In line with this new development agenda, UNIDO is guided by three thematic approaches: Advancing Economic Competitiveness, Creating Shared Prosperity and Safeguarding the Environment.
Alignment with India’s National Priorities and Policies

UNIDO’s interventions and projects in India complement national development priorities and schemes in India. Since the launch of the ‘Make in India’ campaign in September 2014, UNIDO’s ISID mandate has worked in consonance with this campaign to boost industrial development. UNIDO’s activities also work with other initiatives and such as ‘Start-Up India’, ‘Swachh Bharat Abhiyan’ and the ‘Smart Cities’ project.

Fig: UNIDO’s interventions and projects in India complement Govt. of India’s above flagship programmes
UNIDO will continue to work with SMEs towards an efficient and commercially sustainable sector, and help the Government of India progress towards Sustainable Development Goal 9 to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. The Govt of India’s special focus on the *Skilling India* will certainly enhance the job opportunity for the youth population. It will not only transform the economic growth from the jobless growth to the employment led industrial growth but also help to increase the manufacturing sector’s share in country’s GDP. The Skill India mission will reduce the shortage of talent pool for skilled workers thereby potentially turn the country as new human resource capital and talent pool for the world. UNIDO is committed to support the Govt. of India on this important endeavor and is willing to collaborate with respective organizations to develop new and relevant curriculum and training materials. Some of the important areas where UNIDO is already contributing to local capacity building and training are:

- Energy Efficiency in Industrial clusters,
- Increasing the Industrial productivity
- Maintaining strong supply chain and global value chain
- Cleaner Production and Resource Efficiency (RECP)
- Developing trade capacity and international marketing

The new impetus on ‘Digital India Mission’ and promoting digital payment by the Govt. could be another important initiative to reduce the transaction cost and increase the efficiency of the MSMEs. The internet and smart phone penetration in the country are fast growing but still limited to educated and urban people. To make this ‘Digital India Mission’ successful, strong and consistent support to the local service provider are needed.

During the reporting year the Ministry of Environment, Forest and Climate Change has notified the new rule for the Construction and Demolition Waste Management Rules, 2016. UNIDO’s efforts on dealing with different type of wastes and its sound wastes management are already proven. Thereby, UNIDO fully endorses this new rule and is keen to associate with this important initiative. In fact, UNIDO has already submitted following concept notes and project proposals on the subject:

- To promote the production of low-carbon low-energy construction materials from environmentally-sound recycling of construction and demolition wastes.
- Promoting Waste Heat Recovery system and Alternative Fuel and Raw Materials (AFR) in Cement Sector

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UNIDO has also initiated Resource Efficient and Cleaner Production (RECP) – Pilot project to foster Eco-Industrial Park Development in Industrial Parks in India. The RECP pilot programme is aimed at improving the resource productivity and environmental performance of industries in Pilot Indian Eco-Industrial Parks through the parallel and integrated application of RECP technique in enterprises on EIP strategies and practices in the selected Parks. Three States, Gujarat, Telangana and Andhra Pradesh were selected for this pilot project as per case studies done by experts. The project will focus on generating a potential for developing Industrial Symbiosis, where industries can efficiently utilize the available resources, thereby generating lesser waste (emissions to air, waste water generation, hazardous waste generation and loss of energy). Focus will also be on exchange of waste and by-products with other enterprises, so as to develop Eco-Industrial Parks. The project activities include creating awareness, capacity building, RECP demonstration, environment infrastructure need assessment at park level, exploration of industrial synergies and other studies as needed.

The other important initiative is a project on National Air Quality Index, where UNIDO is collaborating with Ministry of Earth Science (MoES) and MoEF&CC. The objective of the 'Addressing adverse impacts of climate change and air quality on human health in India' project is to address air pollution and its impact on human health.

UNIDO is also exploring new projects in Food processing sector, Agriculture sector and cluster mapping etc.
6. COMMUNICATION AND MEDIA COVERAGE:

Annual Report 2016
Solar thermal projects to get interest subsidy

The government has announced solar thermal projects to get interest subsidy. The Ministry of New and Renewable Energy (MNRE) has launched the project "Promoting business models for increasing penetrations and scaling up of solar energy". Under this project, a couple of site visits and a workshop have been planned.
7. UNIDO INDIA REGIONAL OFFICE:

René Van Berkel  
UNIDO Representative  
Regional Office in India

Vinay Vij  
(Admin)

Harjit Singh Chandhok  
(Admin)

Sohan Badhan  
(Admin Support)

M. Vasudevan  
(Sr. Chauffeur)
Fig: TEAM UNIDO: India office